

Work, Time and Sustainability: The Political Economy of Work and Time Usage in the
Context of Policy Related to a Sustainable Society

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Tiefe Brunnen muss man graben wenn man klares Wasser will

Work, Time and Sustainability: The Political Economy of Work and Time Usage in the
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Abstract

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Issues pertaining to the relationship between how sustainable a society is, and how people use their time, represent a significant area of interest for both researchers and policy makers. Specifically, of interest is the idea of *time equity*- that is, time use patterns which maintain an appropriate balance between work, leisure, social and economic activities. Analyzed here is the question of how time equity relates, either in a causal or correlational manner to a broadly defined version of sustainability that simultaneously considers social, economic and environmental factors. To better understand this relationship this dissertation attempts to both assess the immediate relationship between time use and sustainability and illuminate how public policy and various major social, economic and environmental structures influence both sustainability and time use. Although an analysis of these topics can use many methodologies and investigate a wide range of subject pools, the focus here consists of major industrialized countries and the methodology entails the development of an index that gauges both time equity and sustainability. Time usage is analyzed both relative to specific daily activities and periodic repetitive activities. Sustainability is assessed relative to specific social, economic, and environmental indicators. This approach provides a two-fold opportunity; the first is to investigate the hypothesis that countries which foster long working hours, short vacations and display neglect for the assessment of informal economic activity tend to be less sustainable than countries which do otherwise. The second opportunity is to infer the effect of public policies geared towards more equitable time management and various aspects of sustainability. This comparative analysis provides a foundation for a discussion of the likely causal dynamics time equity and sustainability. Although the primary analysis of this work is inherently

comparative and quantitative in nature, the ultimate goals of this work include addressing the issues of American exceptionalism relative to time use¹ and addressing many of the normative questions that surround this topic. Ultimately, this work concludes that there is a positive relationship between high levels of time equity and sustainability.

¹ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

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Chapter 1

Introduction

Time, in many senses, is the most neglected resource of modern society. It is exploited to its fullest capacity, divided infinitely and loaded with the burden of incomprehensible amounts of activity. Yet, on many levels, time use remains a mostly unaddressed issue. If one is to understand human activities such as work and fulfill objectives such as achieving a comprehensively sustainable society one must look towards time as being one of the crucial elements that defines and connects such variables. Considering this, time use patterns can be used to depict the structure and meaning of work in a society. Although work is often perceived as something that is defined in terms of material or economic gains, work can also be perceived as being something that occurs within particular time frames and uses time as its defining variable.

In most of modern society we neglect this broader consideration of time use in favor of the more tangible economics of the situation. However, in doing such the major focus of our attention is shifted away from factors that ultimately dictate the success of society and individuals. If we are to be effective in addressing these issues we must expand the scope and direction of analysis to be more inclusive of other ways of thinking. The beauty of using time to define much of work is that it expands our commonly held perceptions of what work is to a level that is highly inclusive. For much of America, and the industrialized world generally, “work” is merely the activity at the end of a commute, often occurring in factory, a retail service setting, or an office building. Work begins and ends at such a destination; it amounts to a paycheck which is converted into some other type of material or social commodity. However, if we view work through the lens of

time many things that are not often perceived as being work become such. For instance, the commute to work can be perceived as a form of work. Housework and shopping and other domestic activities also become types of work. Even leisure activities might be seen as a type of work since leisure is a concerted effort at achieving mental and physical well being in part to maintain productivity in compensated work. This approach along with a number of others can be used to create a model of society that addresses issues often disregarded in conventional analyses labor and economic activity.

The main purpose of this work is to explore the relationship between time use, especially relative to work time, and sustainability. Such an approach proves useful in highlighting many of the relationships that are often not considered when developing policy geared towards any number of issues such as the organization and composition of labor and environmental protection issues. Also, it should be noted that although there is a tendency to strive for a limited number of explanations to a problem, the issues surrounding work and the use of time are complex in that they are rooted in numerous and diverse causes, occur at all levels of social organization, and manifest themselves differently in different groups. Thus, any analysis of the subject faces a difficult task of organizing such diverse topics within an analytical framework that notes their individual relationships and creates a relatively clear image of the entire system.

There is also the issue of how the methodology in this work relates to our greater theoretical understanding of the relationship between times use and sustainability. Although, this work primarily focuses on the practical and policy orientated aspects of

the topic, any exploration of this depth inevitably must address issues found in mid-range and grand theories of both sustainability and human behavior in general. As will be highlighted through out the work, there are many theories that explain various aspects of the dynamic between time use and sustainability. For instance, Marx's theories of class conflict can be used to understand many of the dynamics associated with labor policy directed a certain group of workers. On a broader level, we must deal with addressing the issue how theory can accommodate the relationship between time use and sustainability. On a conceptual and methodological level, it is difficult to apply traditional linear-causal models to the relationship between time use and sustainability. Obviously, it seems somewhat bizarre to state that either sustainability causes equity in time use or vice versa. However, when the situation is approached from the perspective that both time equity and sustainability and are interdependent, bi-directional in their influence, and yet distinct in their nature then their relationship becomes clearer. Specifically, is the notion that time equity can be used in combination with other variables, such as material efficiency, social capital, etc, as method of assessing sustainability. As elaborated in the subsequent discussions, time use proves to be a variable that can be incorporated in to almost any analysis of sustainability. For instance, even in dealing with topics not directly related with time use such as resource consumption, time use proves to be a useful variable to incorporate in the analysis since both various resource consumption patterns will tend to lead towards certain time use patterns and vice versa. Ultimately, this and other situations consistently demonstrate the need for time equity in achieving sustainable outcomes, along with demonstrating its utility as an analytic tool.

With this broad idea in mind, the following analysis features two principle goals. First, I will analyze the development of the existing economic system as it relates to work and time usage. Second, I will use that exploratory analysis of work and time usage to analyze what existing policy has done to address the issue of the connection between work and time use and to theorize as to what problems future policy needs to address to achieve greater sustainability.

Sustainability represents the second major aspect of this work. Sustainability deals with achieving a social, economic or environmental system that is in persisting equilibrium with its environment, and will remain so for some time. A sustainable system neither diminishes itself nor its environment. Theories of sustainability often rely on the assumption that for a society to achieve a sustainable level of operation its social, environmental and economic systems must be integrated in such a manner as to allow all systems to contribute to the efficiency of the others. One of the larger and more pressing questions of the modern era has been that of how to achieve a proper balance between or among competing interests so as to achieve a sustainable society. These questions fall into in a number of categories, ranging from issues relating to patterns of resource consumption to patterns of social organization.

There are numerous theories which deal with either a specific topic relating to sustainability or feature a holistic consideration of the question of sustainability.

Arguably, sustainability represents one of the wicked problems that are difficult to completely address at a technical or theoretical level. However, one could make the case that effective explanations that deal with questions of sustainability aim to create an image of society and depict the function of specific elements within society's bounds. With this awareness in mind, we are left with the question of how does time spent working or involved in some other activities relate to the greater goal of achieving a sustainable society? To answer this question it is necessary to conceptualize work, time use and sustainability in a way that systematic analysis is possible.

Judging from some sources², there is a strong relationship between time spent at work and work-related activities and various manifestations of sustainability. However, meeting the objectives of this work requires ascertaining a number of specific relationships that deal with either structural mechanisms or individual behaviors occurring within a given situation. For instance, we must explore the relationships among work, material consumption, health outcomes and social capital. To achieve this end data are drawn from multiple sources and disciplines to depict these relationships. Specifically, data from the International Labor Organization, the United Nations, World Bank and other sources are used to gain an understanding of the time use habits of various types of individuals.

These data are used to explore the relationship between time use and indicators of sustainability such as social capital, material consumption and public health. In terms of

² Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

disciplinary perspectives, this work uses theories and approaches from sociology, psychology, philosophy, economics, and political science, and most importantly from the policy sciences. Once the end of depicting the relationship between work and time use with sustainability has been achieved, we are left with the task of synthesizing the results and theorizing as to what types of policy remedies might be developed to deal with work time use and sustainability.

In general there are a number of persistent themes and concepts to be found in a discussion of time use and sustainability: although, these themes and concepts they are connected their divergent backgrounds make them distinctive. The following is a brief introduction to these themes and concepts that focuses primarily on the United States.

Time use

Issues relating to work and time use are diverse and multi-disciplinary in nature. In this work, their relationships with the overall structure of society are particularly relevant. Although there is some debate regarding specifics, one area of much emphasis in time use research is the impact of overwork on individuals and society. One excellent discussion, which provides the basis for much of this work is Juliet Schor's book *The Overworked American*³. Schor makes the case that working time in America has expanded in recent decades for a number of reasons including an increase in competition for jobs, American's neglect for national policy relating to vacation time, and American's

³ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

cultural preference for consumerism. Working from this premise, Schor systematically discusses the impact of overwork on both individuals and broader society.

Along these same lines the work *Discretionary Time*⁴ by Robert Goodin and his colleagues notes the relationship between government policy, different social groups and the management of time use through redistributive policy. In the work of both Schor and Goodin and his colleagues these scholars note the complex relationship between policy, social conditions and time use. One prominent theme found in many analyses is that there is a relationship between equity in time use and quality of life. Also, many discussions have noted⁵ that modern society, especially American society, has increasingly demanded more work and permitted less flexibility in time use.

One observation of note is that the average full time working hours have expanded by around 160 hours per year in recent decades in the United States⁶. There are a number of factors that may have contributed to the expansion of working hours in America and in other countries. Primarily, the situation appears to be the result of economic forces both at the individual and social level. Regarding society-wide trends, some observers contend that competition from abroad and domestically has contributed

⁴ Goodin, R., Rice, J. M., Parpo A., Ericksson L., (2008). *Discretionary Time*. Cambridge University Press.

⁵ Reich, R. B., (2001). *The future of success*. Alfred a Knopf Inc.

⁶Rones, R. L., Ilg,R. E., Gardner, J. M. (1997). *Trends in hours of work since the mid 1970s*. Bureau of Labor Statistics. Retrieved: June 23, 2007. Website: <http://stats.bls.gov/opub/mlr/1997/04/art1full.pdf>, Another analysis noted a 162 hour in crease in hours from 1967-2000, see ILO, Key Indicators of the Labor Market.

to the expansion of time spent working⁷. In the instance of foreign competition we find that much of the pressure to expand working hours in industrialized countries comes as a result of pressure created by low production costs in the third world⁸. In contrast, the domestic trends that have contributed to an expansion of working hours can generally be ascribed to a loss of “stability” and increased competition for jobs and other resources in the economy⁹

In terms of the individual level economics of work time, the situation varies depending upon occupation and other variables¹⁰. However, there are a number of what can be considered typical individual level trends. One prominent force that has contributed to people working more has been the general stagnation or decline in real income since the early 1970’s¹¹. When this trend is combined with increasing levels of material consumption the only route for most workers is to work longer hours. Finally, we can attribute at least some of the growth in working hours to rising levels of income inequality and an overall rise in the cost of living. As many studies have noted income inequality tends to polarize working hours in that lower income people must work longer hours to make ends meet while the wealthy are relatively immune from the pressure to

⁷ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

⁸ Krugman, P., Anthony, J., Venables, A. J., (1995). Globalization and the Inequality of Nations. *The Quarterly Journal of Economics*, 110(4), 857-880.

⁹ Hornstien, A., Krusell, P., Voilente, G. L., (2004), *The Effects of Technological Change of Labor Market Inequalities*. Retrieved: June 10, 2007. Website: http://www.econ.nyu.edu/user/violante/Books/GrowthHB_final.pdf

¹⁰ American Time Use Survey (2007). Retrieved: June, 16, 2007. Website: <http://www.bls.gov/tus/>

¹¹ Irons, J., (2007). *Typical families see income and earnings decline, Economic Snapshots, Economic Policy Institute*. Retrieved: September, 7, 2007. Website: http://www.epi.org/content.cfm/webfeatures_snapshots_20070905

expand time at work.¹² Along these lines, a number of forces have made inordinately expensive to live in certain regions. Thus, many families must have two full time incomes to survive. For instance, the consumer price index for western states has risen almost 30% in the past 10 years¹³. Also, housing costs and a relatively low minimum wage, especially for families with children, have had a similar effect in terms of creating a situation where people must work long hours to support themselves.

Aside from the economics of the work-time dynamic, there are also a number of social and structural changes in society that have contributed to Americans working more than people did in the 1960s. Specifically, women entering the workplace, an increasing neglect of informal labor, and the development of American infrastructure all influence the work time dynamic. Regarding the issue of women working, one of the consequences of modern feminism was to promote the entry of women into the work place. Although many observers see this development as having a positive impact on society, the introduction of more potential workers has had the unintended effect of increasing competition for jobs¹⁴. As mentioned above competition for jobs arguably is one of the primary motivations for people to put in long hours at work. Also, having women enter the work force helped bring about the advent of the dual income family. In and of itself the idea of having two incomes in a family is something that conceivably would bring

¹² Pannozzo L., Colman, R., (2004). *Working Time and the Future of Work in Canada: A Nova Scotia GPI Case Study*, Genuine Progress Index for Atlantic Canada.

¹³ Western Office Bureau of Labor Statistics (2007). Retrieved: May, 10, 2007. Website: <http://www.bls.gov/ro9/data.htm>

¹⁴ Hayghe, H., (1997). Developments in women's labor force participation. *Monthly Labor Review Online*, Vol. 120(9).

less work to the members of that group since the formal work of one individual could be divided between two. However, if an economy develops in such a way as to consider the basic economic well being of a family as being dependant upon two incomes, then hours worked increase to meet such standards and effectively negate any economic gain derived from two incomes.

Finally, certain elements of modern feminism have helped promote a decline in the social standing of informal labor in the American economy. Although informal labor has been done by both sexes, the traditional conception of the informal laborer has been that of the housewife. With the social changes of the 1960's and 1970's, the commonly held belief that a women's place was in the home was mostly abandoned¹⁵. Along with a number of other developments, this change in beliefs has led to a widespread neglect of the role of informal labor in American society. People must still raise children, cook, clean and commute to work; however there has developed a system of social norms that seldom pays proper regard to the value of these activities. The ultimate effect of this trend has been two-fold; first, work is only considered in terms of formal economic activity¹⁶; and second, people are still expected to work informally. The net result is that the average amount of labor most people are involved in has been significantly underestimated by some conventional analyses¹⁷.

¹⁵ American Time Use Survey (2007). Retrieved: June, 16, 2007. Website: <http://www.bls.gov/tus/>

¹⁶ American Time Use Survey (2007). Retrieved: June, 16, 2007. Website: <http://www.bls.gov/tus/>

¹⁷ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

Infrastructure and other aspects of American society also contribute to various aspects of time use. Sprawl in the United States has contributed to people driving ever increasing distances¹⁸. The net effect of this has been to increase the amount of time spent commuting and hence the amount of informal labor expanded. Also, the level of technological development of American society has facilitated people consuming ever increasing amounts of goods to maintain their comparative standard of living. If a person were to live by an average 1950 standard of living, by most accounts he or she would be considered a Luddite if judged by conventional norms. For instance, many colleges now require their students to possess a computer for doing their home work.

This trend in materialism can also be seen in the greater context of normative theory. A thoughtful commentary in this regard is found in Paul Stiles' *Is the American Dream Killing You?*¹⁹. Stiles' Americans have become fascinated and utterly entrenched in the rhetoric of market economics. Combine this with America's individualism and the Protestant work ethic, and the influence of the dominant culture on what we conceive of work becomes clear. The expansion of work time is connected to these cultural beliefs, in individualism, in capitalism, and in the virtue of competition; the absence of a national mandate to establish a more sustainable system of work time reinforces their influence. Although the causes of the expansion of time at work and consequently the reduction in vacation and free time are certainly diverse, they can be seen as all pointing in the same direction.

¹⁸ Energy Information Administration (1988). *Household Vehicles Energy Consumption*. DOE/EIA-0464(88).

¹⁹ Stiles, P., (2005). *Is the American Dream Killing You? How "The Market" Rules Our Lives*. Collins.

The effects of over work and lack of free time of are numerous and well documented. There are a number of social and health effects ranging from the increased incidence of stress-related illnesses to increases in the likelihood of divorce.²⁰ In general, we can view the effects of overwork on individuals in two ways; first, there are those effects that can be causally linked to long working hours, and secondly there are those effects that result from the limiting function of spending large amounts of time at work. Relative to direct effects we find that the longer an individual spends at work, and the less vacation time they take, the higher risk they run for cardiovascular, psychological and other stress-related problems²¹. Also, longer working hours have been directly related to increased levels of obesity and absenteeism.²²

In addition to this, the level of social problems experienced by people who put in long hours tends to be significantly higher than those with more reasonable schedules. For instance, research has suggested that the rate of divorce, spousal or child abuse and

²⁰ Michie, S., Cockcroft, A., (1996). Overwork Can Kill. *British Journal of Medicine*, 312, 921-922. and Johnson, J. H., (2004). Do long work hours contribute to divorce? *The B.E. Journal of Economics and Policy*, 4(1), Article 24.

W. F., Wilson, W. F., D'Agostino, R., Levy, D., Belanger, A., Silbershatz, H., Kannel, W., (1998). After-Effects of Job-Related Stress: Families as Victims. *Journal of Occupational Behaviour*, 3(1), 63-77.

Virtanen, M., Singh-Manoux, A., Ferrie, J. E., Gimeno, D., Marmot, M. G., Elovainio, M., Jokela, M., Vahtera, J., Kivimäki, M., (2009). Long working hours and cognitive function: the Whitehall II study. *American Journal of Epidemiology*, 169(5), 596-605.

²¹ Refer to subsequent analysis chapter 3

²² Woo, M., Yap, A. K, Oh, T. G, Long, F. Y., (1999). The Relationship Between Stress and Absenteeism, *Singapore Med J*; 40(09).

Okudaira, M., (2004). Karoshi (death from Overwork) from a medical point of view. *Japan Medical Association Journal*, 47 (5), 205-210.

other social manifestations of stress are directly related to the length of the work week²³. Also, there is some evidence that suggests that the effects of overwork are cross-generational in that the less time parents spend with their children the less likely their children are able to succeed at a variety of tasks²⁴. Along these lines, it has also been observed that long working hours tend to have a negative effect on community-oriented activities, such as time spent volunteering, going to church or even socializing with friends or neighbors.²⁵ It is also possible to extend this trend to high levels of television consumption and a general lack of interest in hobbies and other enriching activities outside of work.²⁶

Aside from formal economic activity a number of studies have noted the influence of informal labor on various groups. One prominent example of this influence has been the effect of combining the demands of housework and child rearing with occupational careers. As discussed by Schor,²⁷ women tend to bear a disproportionate amount of the burden when it comes to attending to domestic needs and maintaining a career.²⁸ The result has been increased levels of stress along with reduced prospects for career

²³ Fox, G., L., Benson, M., L., DeMaris, A. A., Van Wyk J., (2002). Economic Distress and Intimate Violence: Testing Family Stress and Resources Theories. *Journal of Marriage and Family*, 64(3), 793–807.

²⁴ Nock, S., L., Kingston, P. W., (1988). Time with Children: The Impact of Couples' Work-Time Commitments. *Social Forces*, 67(1), 59-85.

²⁵ Putnam, R. D., (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.

²⁶ Jacobs, J. A., Gerson, K., (2001). Overworked Individuals or Overworked Families? Explaining Trends in Work, Leisure, and Family Time. *Work and Occupations*, 28(1), 40-63.

²⁷ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

²⁸ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

advancement²⁹ Also, along less gendered lines, many jobs have come to implicitly require that workers be involved in work related tasks such as commuting, socializing with employers and clients, and doing additional work even though it is not part of their job description.³⁰ Considering these various effects, we can conclude that when work occupies a disproportionate amount of someone's schedule a number of negative effects are the result particularly which relate to activities in which they can participate outside of work.

Relative to the society-wide effects of the contemporary state of time use, when many members of a community possess little free time they cannot contribute to social capital by building trust based networks of association and cannot volunteer to address other social and structural problems in those communities. The rates of various forms of civic participation including voting, civic and associational volunteering and church attendance tend to be lower in communities with high proportions of full time workers whose work entails little free time³¹. Also, communities with many residents who commute to locations outside of this town in which they reside often suffer the compound effect of time being consumed by both formal and informal work in the form of

²⁹ O'Rand, A., M., Henretta, J., C., (1982). Delayed Career Entry, Industrial Pension Structure, and Early Retirement in a Cohort of Unmarried Women. *American Sociological Review*, 47(3), 365-373.

³⁰ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

³¹ Putnam, R. D., (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.

transportation by solitary commuting³². In addition to these direct effects of long working hours, communities often have developed in such a manner as to exacerbate many of the negative aspects of overwork. For instance, it has been shown that in sprawling communities where driving is a necessity the opportunity to walk, recreate, socialize or otherwise participate in the community of residence is limited.³³ The net effect of such structures can contribute to the negative health and social outcomes associated with overwork³⁴. On a more normative level we must question the relationship between a community's professed values and the working habits of members of those communities. For instance, does a human community that emphasizes a large amount of conspicuous consumption condone the social practice of systematic overworking, and the consequent alienation from others, of its residents to support such materialism? Alternatively, do communities that possess strong social networks value community participation and informal labor while sanctioning overwork and materialism? Although these questions represent thinking on a high level of abstraction, their practical consequences are rather tangible. For instance, in a tightly knit community where neighbors often assist actually each other that assistance amounts to a substantial amount of the economy of a community.³⁵ Thus, any analysis that attempts to gain a

³² Weber, T., (April, 9, 2007). *Long Commutes and Family Time*. *Wall Street Journal*. Retrieved: July, 17, 2008. Website: <http://blogs.wsj.com/juggle/2007/04/09/long-commutes-the-space-between-work-and-home/>

³³ The Land Use Commission (2007). *Fact Sheet: The Economic Benefits of Walkable Communities*. Retrieved: June, 12, 2007. Website: http://www.lgc.org/freepub/community_design/index.html

³⁴ Ewing, R., Schmid, T., Killingsworth, R., Zlot, A., Raudenbush, S., (2003). Relationship Between Urban Sprawl and Physical Activity, Obesity, and Morbidity. *American Journal of Health Promotion*, 18(1), 47-57.

³⁵ Rohe, W. M., Temkin, K., (1998). Social Capital and Neighborhood Stability: An Empirical Investigation. *Housing Policy Debate*, 9(1) 61-87.

perspective on the impact of the present work time situation must view the situation both from the perspective of the individual and from the perspective of the social group and the broader society as well.

Although the dilemma of overwork and other issues of time use can be judged relative to specific situations and dynamics, the issues surrounding time use are equally rooted in the broad social values that most people endorse. As many scholars have observed, America is an relatively materialistic society that upholds norms of consumerism, capitalism and individualism as representing core values of social existence.³⁶ These core values may create a dynamic wherein the value of accumulating material and financial wealth is placed over that of maintaining social relationships, contributing to efforts to maintain viable communities and personal well being. These values influence a community's social life through a number of formal and informal processes. In terms of formal aspects, most members of American society places a high value on things that have a monetary worth attached to them.³⁷ Although there are many exceptions to this proclivity where people's ideological or religious beliefs are contrary to these values this set of beliefs nonetheless represents a major cultural force in American society. For materialistic people things such as being an involved member of a

³⁶ Stiles, P., (2005). *Is the American Dream Killing You? How "The Market" Rules Our Lives*. Collins.

Also, for a more historical treatment see: Mills, C. W., (1951). *White Collar*. Oxford.
Weber, M., (2002). *The Protestant Ethic and the " Spirit" of Capitalism and Other Writings*. Penguin Group.

³⁷ Stiles, P., (2005). *Is the American Dream Killing You? How "The Market" Rules Our Lives*. Collins.

community or developing some sense of the self outside of material realm are often underappreciated and valued rather little.

In a less tangible sense, much of what defines most Americans' sense of self and of success is depicted in material terms or relative to aspects of the economy such as their careers. For instance, the values of the American consumer can be seen as defining our self worth through our capacity to consume ever-increasing amounts of material goods. Also, the tenets of capitalism value competitive success which often come at the expense of others-over less divisive measures of progress.³⁸ Since such a world view represents the dominant theme of the American ideological dialogue, to question or introduce other narratives into the discussion is something that most people would not conceive of, or would possibly even actively resist.

This dynamic provides some explanation as to why many Americans are willing to carry the burden of long hours of work even when many of them could manage to get by on less. In many senses, Americans have trapped themselves in such a world view because they have decided that success and failure are to be defined mostly in these terms of material success. To reinforce this tendency American society tends to give more authority to the "successful" than those who are not. To resolve the problems of time use and sustainability, it may be necessary to re-conceptualize success and failure and adopt a different perspective on core value dimensions. To advocate such a position inevitably gives rise to the charge of radicalism. However, the question must be asked: are the

³⁸ One excellent discussion of this is found in: Mills, C. W., (1951). *White Collar*. Oxford.

values of the present system perhaps radical in a manner that we typically ignore? For instance, most societies abhor greed and waste³⁹; however, the values of capitalism and consumerism appear to promote it. This set of considerations, along with a number of related questions, shed a much more complete light on the situation of use of time and sustainability in terms of issues of values and best practices. Although some empirical research tends to avoid normative questions in the never-ending search for methodological rigor, it appears likely that in this instance it is inevitable that we include such topics in an appropriate analysis of the situation.

The situation in other industrialized countries is rather similar to that of the United States, but somewhat different in many noteworthy respects. Similar pressures in terms of the consequences of economic competition on social structures have been noted in research conducted in other industrialized countries. For instance, in recent years many German labor unions have had to make concessions in terms of accepting longer work weeks⁴⁰. Also, various countries such as Iceland have experienced neo-liberal policies that have contributed to more economic competition and longer working hours⁴¹.

³⁹ Robertson, F., (2001). *GREED: Gut Feelings, Growth, and History*. Polity Press.
Wilkinson, R., Pickett, K., (2009). *The Spirit Level: Why More Equal Societies Almost Always Do Better*. Allen Lane.

⁴⁰ Deutsche Welle (2004). *Germans Mull Fifty-Hour Workweek*. Retrieved: August, 15, 2007. Website: <http://www.dw-world.de/dw/article/0,2144,1260997,00.html>

⁴¹ Refer to chapter 3 for ILO cross national data on hour, also a good article on Iceland's Neoliberalism: Sigfússon, S. J., (2008). *On the Financial Crisis of Iceland*. Retrieved: March, 15, 2009. Website: <http://monthlyreview.org/mrzine/sigfusson201008.html>

Additionally, various countries such as Japan which traditionally have relied on a male-centered work force have increasingly incorporated women in the work force⁴².

Although there are similarities between the United States and other industrialized nations, there are also some significant differences which deserve our attention. Specifically, all industrialized nations with the sole exception of the U.S. legally mandate some amount of annual paid vacation⁴³. Also, other industrialized countries possess higher levels of economic and social equality, and they have more extensive welfare states that universally guarantee health and retirement benefits that American workers must rely on employers for coverage. Although there are exceptions to this⁴⁴, as we will examine later, by-and-large workers in other industrialized countries work substantially fewer hours than do those in the United States. Finally, it is important to take note of the cultural differences that exist between the United States and other countries, specifically the United States tends to be highly individualistic and place a great deal of emphasis on work while placing less emphasis on leisure and the promotion of family life.

As we can see from this brief discussion, issues relating to time use are rooted in a number of structural factors and have important consequences for both individuals and society. In many ways issues relating to sustainability are similar in terms of the complexity of factors and the complexity of interrelationship among those factors that

⁴² Japan Today (2009). *More women enjoying a night out alone*. Retrieved: March, 15, 2009. Website: <http://www.japantoday.com/category/kuchikomi/view/more-women-enjoying-a-night-out-alone>

⁴³ See chapter 3 for details.

⁴⁴ Most notably Japan, and Iceland for either cultural or economic reasons.

dictate their status. However, sustainability does differ from time use in that it does not possess one defining characteristic.

Sustainability

As a general concept sustainability deals with achieving a balance between human activities and the natural environment.⁴⁵ Most conceptualizations of sustainability rely on the presumption that for a society to be sustainable it must achieve an equitable balance among its social, environmental and economic aspects.⁴⁶ This belief in the need for comprehensive sustainability represents one of the more unique aspects of the concept. Rather than assuming sustainability is achieved through actions which have a specific cause and effect, most approaches to the study of sustainability assume that there is a complex set of relationships among the diverse set of things that describe humans, their society, and the natural environment in which they reside. Thus, work that assesses sustainability should address issues in a broad and interdisciplinary fashion.

Sustainability research is quite diverse in both methodology and topics addressed. In general, we can divide studies of sustainability into those that deal with economic, social or environmental issues on either an individual or societal level. For instance, studies of economic sustainability often address issues of equity in labor and

⁴⁵ United Nations (1987). *Report of the World Commission on Environment and Development*. General Assembly Resolution 42/187.

⁴⁶ Milbrath, L. W., (1989). *Envisioning A Sustainable Society: Learning Our Way Out*. SUNY Press.

compensation⁴⁷, economic exploitation⁴⁸, and meaningful economic development⁴⁹ amongst other topics. In contrast, research that relates to social sustainability often addresses issues of social equity and the influence of culture on individual and group behaviors⁵⁰. Relative to environmental sustainability, we find that research in this subfield deals with both modeling the impact of humans on the environment⁵¹, their resource usage⁵² and also applying ecological models to various aspects of human behavior⁵³. Also, it is noteworthy that research and theory relating to environmental sustainability can be considered to represent the core of sustainability-related research since environmental topics were the first to be explored using the rubric of sustainability. Although there is much more research on these topics than what is mentioned above (which subsequent chapters will attempt to address), the basic typology presented here represents the basis of both the theory and subject matter of sustainability-related research. In addition to these topics, it is also noteworthy that much of the research that deals with sustainability focuses on integrating topics that are not commonly related so as to develop novel syntheses that explain the complex nature of systems that govern sustainability.

⁴⁷ Sklar, H., Mykyta, L., Wefald, S., (2002). *Raise The Floor: Wages and Policies That Work For All Of Us*. South End Press.

⁴⁸ Lazar, E. P., (2000). Economic Imperialism. *Quarterly Journal of Economics*, 115(1), 99-146.

⁴⁹ Barbier, E. (1987). The concept of sustainable economic development. *Environmental Conservation*, 14 (22), 101-110.

⁵⁰ Jcdes, U., (2000). *Towards a culture of sustainability*. Peter Lang Publishing.

⁵¹ Valentin, A., Spangenberg, J. H., (2000). Assessment Methodologies for Urban Infrastructure, A guide to community sustainability indicators. *Environmental Impact Assessment Review*, 20(3), 381-392.

⁵² Pearce, D. W., Kerry, R., (1990). *Economics of Natural Resources and the Environment*. jhu press.

⁵³ Vayda, A. P., (1983). Progressive contextualization: Methods for research in human ecology. *Human Ecology*, 11(3), 265-281.

Aside from the topics that sustainability assesses, the second area of importance is that of the methodology that sustainability related research uses. The methods used to gauge sustainability are diverse and complex; one method of assessing how sustainable a society makes use a set of indicators that measure things believed to be related to the promotion sustainability. For instance, one key feature of sustainability is the notion of not consuming more resources than the environment can replace⁵⁴. One can operationalize this concept by analyzing rates of material consumption along with other data relating to the availability of resources and their rates of consumption.

Alternatively, we might look at existing trends and outcomes in a community and compare those with either real or hypothetical instances of communities that exhibit different levels of sustainability. One example of this might be to compare communities in terms of the need for automobile-based transit for commuting to work. Another analysis might focus on health data from a society that scores well in most indicators of sustainability and one that does not. Considering the breadth of research done relating to sustainability, it is clear that there are many possible ways of analyzing the concept.

One method that has been used in a number of prior analyses makes use of the Genuine Progress Index. The index was originally conceived of by Simon Kuznets as an

⁵⁴ Milbrath, L. W., (1989). *Envisioning A Sustainable Society: Learning Our Way Out*. SUNY Press.

alternative measure to gross domestic product⁵⁵; Kuznets argued that the notion of the gross domestic product was an unreliable measure of progress since it included forms of economic activity that cannot meaningfully be considered things of genuine social value. For instance, the gross domestic product considers money spent on prisons, divorce, and chronic illness related to stress; all of these expenditures are treated as economic activity that can be included in its estimation.⁵⁶ In contrast, the Genuine Progress Index considers only forms of activity that can be shown to have a positive impact on society.

One of the more advanced versions of the genuine progress index was developed and applied in Nova Scotia and other provinces in Atlantic Canada. Through a number of iterations research at GPI Atlantic has refined the GPI index to provide a comprehensive view of how well a community is performing in terms of its promotion of sustainability. For this reason GPI Atlantic's index provides a good way to measure sustainability empirically and is used as a model here in this dissertation. Although somewhat modified to fit the needs of this work the basic principle of the GPI remains the same. Ultimately, the goal in using the GPI is to create an empirically grounded way of measuring and conceptualizing a society's level of sustainability. Once we have properly conceptualized an indicator of sustainability it is possible to do a comparative analysis of time use, sustainability and public policy. Now that some of the theoretical basis for this work has been discussed it is useful to outline goals and describe this nature of subsequent chapters.

⁵⁵ Colman, R., (2001). Measuring Real Progress. *Journal of Innovative Management*, August, 1-8.

⁵⁶ Colman, R., (2001). Measuring Real Progress. *Journal of Innovative Management*, August, 1-8.

Chapter 2

Chapter 2 features a discussion of the evolution of work, time use, and sustainability in terms of their theoretical development. Also, chapter 2 addresses many of the contemporary issues in time use and sustainability. As mentioned above, the primary goals of this analysis are to establish the relationships among time use, public policy, sustainability, and normative trends such as consumerism and adherence to capitalism. From these general questions a number of more specific concerns develop. Relative to public policy it is possible to divide the analysis into two distinct categories. The first category consists of policies that directly address time use. In addition to understanding the technical details of the public policy, however, we must also consider the social values and societal level trends that influence such policies. At this level of analysis it is also useful to explore the influence of large scale social, economic and environmental trends by themselves to gain an understanding of the underlying structures that influence specific trends or policies. To achieve this it would be useful to incorporate some classic theories such as Marx's conflict theory, Durkheim's theory of the division of labor, Taylor's theory of scientific management, and Weber's ideal type theory of bureaucratic organization.

Using these discussions as a foundation, the final the task of this analysis is to answer a number of normative questions. The first question is what role have society's values, including economic and cultural philosophies, played in the development of the trends observed. The second question relates to the issue of American exceptionalism.

Time use is consistent with other trends that substantiate the claim that American's behavior is substantially different from that of other nations and yet is subject to the same fundamental forces. After addressing these issues it is possible to use the conclusions drawn from the analysis of sustainability, time use and public policy to help answer these questions. The goal in answering both the question of American exceptionalism and also the underlying causes of the present dilemmas of time use and sustainability is to be able to identify those values that are either in conflict with or contribute to the goal of achieving a sustainable society. By identifying these factors we are better able to both develop public policy that helps address the issues created by the present system and critically reassess some of the fundamental structures of American society. In addition to addressing these broad issues, the discussion featured in chapter 2 also makes an effort to describe structural and ideological differences of the countries studied, along with showing how issues of time use and sustainability play themselves out on an individual and group level.

Chapter 3

Chapter 3 features a discussion of the methodology and subject selection used for this research. The methodology used in this work is that of a cross-national comparative study that uses archival data to assess time use, sustainability, social trends and public policy in the countries studied. This analysis can be done on the level of individual indicators such as time spent commuting or on the aggregate level by comparing countries' national statistics related to time use or sustainability. Considering the nature of some of the questions raised in this work, this analysis focuses on the general,

somewhat hypothetical, relationship between policy, time use and sustainability.

However, since both time use and sustainability are gauged in a quantitative manner in this study, it is possible to present statistical data about the relationship among public policy, time use and sustainability.

As discussed above, the Genuine Progress Index represents an established method of empirically assessing sustainability⁵⁷. The basic premise of the GPI is to use indicators that accurately reflect how a community and its members interact with their environment and each other. Using these ideas, statistics relating to resource usage, economic activity, social and environmental well being can be analyzed to gain an understanding of specific aspects of a community's level of sustainability. Although the general concept of sustainability is a useful construct, it is also useful for this analysis to use more specific constructs such as environmental, economic, social, individual and community sustainability. To create these constructs, data from industrialized countries are combined in various ways to create indicators for each construct. Once the variables are selected, the indicators are standardized on to a scale ranging from 0 to 1. This standardization allows for a ranked and weighted comparison. Once the sub scales have been compiled, their individual scores are then re-standardized and added to create a comprehensive indicator of sustainability.⁵⁸

⁵⁷ Pannozzo, L., Colman, R., (2004). *Working Time and the Future of Work in Canada: A Nova Scotia GPI Case Study*. Genuine Progress Index for Atlantic Canada.

⁵⁸ See Chapter 3 for detailed methodology.

With these indicators of sustainability in hand it is then possible to do a comparative analysis of time use, social trends and public policy. Data on time use are derived from a number of sources including the World Bank, the United Nations, the International Labor Organization and other sources, to create an index of time equity that is of a similar structure to the index of sustainability. The time use index is compared both to indicators of sustainability and specific sustainability related variables. Also, specific data relating to vacation time, employment, and leave policy is also analyzed. Ultimately, the goal of this analysis is two-fold; the first goal are to assess the general relationship between time use and sustainability, and the second goal is to promote society's level of sustainability. Relative to the second goal, it is also useful to assess the specific relation among certain variables such as infrastructure and time use.

Chapter 4

Chapter 4 discusses the results of the analysis framed by the previous chapter. In general, the core conclusion set forth in chapter 4 is that there is a strong relationship between equity in time use and sustainability. Also, chapter 4 features a discussion of the relationship among individual variables related to time use and sustainability. To achieve this end the greater indices of time and sustainability are broken down into their constituent parts such as economic, social and environmental indicators. In general, this piecemeal analysis reveals more details about the relationship between time use and sustainability. Also, this analysis by-and-large confirms the overarching claim that there is a consistent relationship between indicators of time use and sustainability. It should be

noted, however, that this analysis also reveals that there are some notable exceptions to this general rule.

Chapter 5

Chapter 5 concludes this work with a discussion that integrates both the empirical findings and the theoretical discussions. The purpose of this conclusion is to establish this place of this analysis in both the research literature and among the prominent theories of behavior and sustainability. This discussion compares the findings to traditional sociological theory such as that of Marx and Weber along with discussing the more practical aspects of this research. Specifically, attention is paid both to how this analysis relates to policy and to the development of real world situations related to sustainability. How this research can contribute to both the existing study of sustainability and how it can be refined in the future are also discussed in considerable detail. Finally, a discussion is presented of the normative implications of this research as they relate to both classical philosophy and to contemporary dialogues such as those that relate to issues of materialism and consumerism.

Chapter 2

An Overview of the Development of Issues Relating to Work Time and Sustainability

The following discussion presents a number of perspectives on the topics of work, time use and sustainability ranging from its historical development to modern research and case studies. Also, some context relating to the historical development and present nature of industrialized nations is given. The purpose of this discussion is two-fold; first, it is an attempt at providing some background relative to the topics and cases studied and secondly this discussion helps frame a number of important concepts and questions which can be used in subsequent analyses.

There are a number of areas of interest that are applicable to this situation. To begin, the evolution of how society has dealt with issues of work, time use and sustainability is addressed. One of the defining aspects of this discussion is noting that sustainability and issues relating to work and time use have always existed in society; however, discussions of these issue have lacked an empirical and explicit structure. This framing discussion of the development of work time and sustainability forms the basis for a later discussion of the academic disciplines and research literature available in these areas.

In addition to discussing time use and sustainability, a discussion is offered is offered of this issue the historical development of this issue and an overview is present of an overview is present of contemporary issues currently under debate in various industrialized nations. The purpose of this discussion is to connect the cases that are used

in subsequent analysis to ideas relating to time use and sustainability. Along these lines, two illustrative examples of comprehensive time use and sustainability research are presented. One of these discussions represents a summary of a time use and sustainability study done by researchers associated with the Genuine Progress Index of Atlantic Canada (GPIAC). Although case selection is on a sub-national, scale GPIAC's study is one of the better examples of systematic empirical research that relates time use to sustainability. To help understand how time use and sustainability occur on a national level, the second case study deals with these topics in contemporary American society. Although this discussion is somewhat hypothetical, in the sense that no one has yet to study the topic systematically, it serves to highlight existing research on these topics along with how this research exists within an overarching structure. An implicit objective of these discussions is to highlight three major themes. First, the issues of time use and sustainability are complex, contextually-driven issues that are influenced by a variety of factors ranging from geography to public policy. Second, time use exists in a continuum that is inextricably related to personal and family income and other resources, and it is impossible to understand issues of equity and fairness in time use without considering these other factors. Third, understanding issues relating to time use and sustainability requires viewing these issues in a manner that notes their rather broad scope and interrelated nature.

Preindustrial Society

Work represents an activity that is diverse both in nature and definition. Work has evolved along with human progress since the inception of society, and it represents

an essential element of our contemporary existence. In the modern world work has assumed a number of forms that affect how we operate in social settings on both an individual and a group level. In the formal sense, we participate in work to gain finite economic resources. Equally important, people involve themselves in informal activities ranging from house work to involvement in civic groups that can also be considered forms of work that contributes to the sustainability of family units, groups, and larger society. Ideally, this involvement produces both psychological and social value for the person doing the work. Although modern societies have developed a high level of complexity, the general public's view of work, especially in America, remains limited primarily to formal economic activities.⁵⁹

Relative to the goal of achieving a sustainable society, the present situation raises many questions about how to adapt and transform a society's economic and social systems so as to achieve more sustainable ends. To achieve these ends a number of issues must be addressed. First, we must frame efforts at developing a sustainable model of work time in a manner that makes it compatible with the needs of workers, business enterprises public initiatives and society at large. Many of these models need to be presented in economic forms. Though the act of reducing human behavior to a cost/benefit analysis is restrictive in many respects. Nonetheless, it is necessary that individuals and groups become amenable to the idea of transforming the nature of work

⁵⁹ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books. This work offers an extensive discussion of the transition of American society from a pre industrial one in which informal labor was viewed in a similar light to formal labor to a society in which informal labor is mostly ignored and sole attention is given to formal work.

in society for progress toward sustainability to be achieved. As will be demonstrated through the course of this discussion, much of the problem with promoting change in our collective understanding of time usage, work and sustainability stems from prevailing attitudes and the premises underlying many of our social institutions. Thus it is useful to understand the development of the structures that dictate how we work and what society has held in value through the course of its development.

Competing definitions of work abound ranging from formal economic activity, to uncompensated voluntary labor, to any activity that is experienced as burdensome and unattractive to those involved in it⁶⁰. One of the most generalizable definitions of work is as follows: “an activity that results in a tangible material, economic, social, or psychological gain.” Thus, work can be conceptualized as an activity that we derive pleasure from or hate with a passion, it can result in an increase in pecuniary gain or it can provide us with the satisfaction of advancing society and/or ourselves. This understanding of work is sufficiently inclusive so that we might have a realistic picture of what effects various work activities have on individuals and society, and how those effects are interrelated.

Much of what defines work has paralleled the development of society. Initially, work was primarily geared towards subsisting and was performed mostly alone or in small groups. As a number studies of primitive subsistence societies have demonstrated,

⁶⁰ University of Liecester (2008). *Definitions of work non-work and leisure*. Retrieved: April, 8, 2008. Website: <http://www.le.ac.uk/education/resources/SocSci/defwork.html>

most work is relatively unplanned in terms of time allocation and structure⁶¹. What drives work primarily at this level are immediate needs and long term time schedules such as seasonal changes, crop cultivation and animal migrations. Also, this type of primitive subsistence work typically does not occur within the context of a formal economy. Most of the products of work of this kind are directly tangible to the worker. Thus, there is little need for money since products can be traded or consumed by the producers themselves. What makes this an important point is that the lack of a formal economy limits the division between formal and informal work. When compared with modern systems it is difficult to imagine a preindustrial economy in which people gave commuting or housework the same value as a salaried job.

Although subsistence societies have formed an enduring basis for the nature of work in society, as human organizations and technology have developed and become increasingly complex so too has the nature of work. In particular, there are two themes that are applicable to the goals of this dissertation devoted to a deeper, understanding of the relationship between time use and sustainability. The first theme is the division of labor, specifically the division between formal and informal work. The second theme deals with the use and ownership of labor.

As societies developed beyond the stage of small tribal or kinship groups, various trends within these developing societies caused a number of work related dynamics to develop. One trend of particular importance was the hierarchical division of labor. As

⁶¹ Smith, M. F., (1984). "Wild" Villagers and Capitalist Virtues: Perceptions of Western Work Habits in a Preindustrial Community. *Anthropological Quarterly*, 57(4), 125-138.

societies grew in complexity this growth was accompanied by an expansion in their vertical organization. Initially the level of social stratification in subsistence societies was relatively limited. Many anthropologists have noted that many primitive societies possess little if any hierarchical order⁶². Often it was and is the case that in such subsistence societies those in positions of power were nothing more than charismatic “big men” who were no different in terms of status or wealth from anyone else⁶³. However, as society advanced further toward its current level of sophistication two trends in organization become apparent. The first was the hierarchical division of labor for purposes of management, and the second was the hierarchical division of social systems on the basis political, social or economic power.

Regarding the issue of management, we find that the need for hierarchical management increased as a result of the scale and complexity of the products being produced. For instance, objects such as the pyramids or extensive irrigated agricultural systems required individuals to develop, plan and oversee their operation; thus additional layers of management were added on top of those doing the basic work activity. As society developed, the discrepancies in wealth and power increased concomitantly. Although there is some debate as to whether humans are inherently hierarchical creatures⁶⁴, the effects of this trend towards stratification are apparent in that the desire of some to develop and maintain power and wealth led to the subjugation and frequent marginalization of others.

⁶² Woodburn, J., (1982). Egalitarian Societies. *Man*, 17(3), 431-451.

⁶³ Sahlins, M. D., (1963). Poor Man, Rich Man, Big-Man, Chief: Political Types in Melanesia and Polynesia. *Comparative Studies in Society and History*, 5(3), 285-303.

⁶⁴ Gould, S. J., (1997). *The Mismeasure of Man*. Penguin Books.

This phenomenon represents one of the most important events in the development of work and human society. For when work was directed and used by others to gain wealth and power it effectively detached work from useful activities that resulted in tangible benefits for those involved in the process. In its most extreme manifestation slavery represents such a development. However, there are other less obvious manifestations of such a trend toward exploitation and wealth concentration. For instance, the use of extraction tithing, profit extraction and various forms of taxation can all be perceived as representing a variation of this wealth activity. Although some have questioned the validity of this system,⁶⁵ both in normative and theoretical terms, the act of using others' labor to further social power and wealth has remained a persistent phenomena throughout human societies. As will be discussed later, this area of activity plays an extremely important role in determining the amount of time worked both from the perspective of business enterprises and from the perspective of individuals.

Sustainability in preindustrial society

Sustainability has developed in a similar fashion to time use in that the development of sustainability mirrors the development of human society. Also, much like time use sustainability has existed primarily as an implicit aspect of human activity rather than an explicit set of theories developed in the context of scientific research. Arguably, humans have been compelled to consider their place in the environment ever since they developed the capacity to think. From one perspective modern industrial

⁶⁵ Tucker, R.C., Marx, K., (1978). *The Marx-Engels Reader*. Norton.

society has developed from existing in a state of nature to one in which social life is removed, or at least perceived as being removed, from the greater natural environment.

A good place to begin this discussion would be in exploring the concept of society in biological terms. One of the basic tenets of biology is that organisms must evolve to be compatible with their environments. An organism that fails to be compatible with its environment either must evolve to be such or run the risk of extinction. To be compatible with its environment, an organism must achieve a balance of interests between its own members, other species, and the greater context of the ecosystem. This balance is delicate in the sense that if an organism overextends its position relative to its environment it runs the risk of initiating a series of events that can have catastrophic consequences. Inevitably, this economy of nature encourages species to develop niches within which they exist in a state of equilibrium with the surrounding environment.

Initially, the development of humans and human society followed this adaptation to the natural environmental dynamic. Early humans, like any other animal, were subjected to the whims of their environment since most of their food came from hunting and gathering and they were mostly nomadic, lacking in substantial infrastructure⁶⁶. They were afforded little protection from or advantage over other animals. If humans were unwise and over-harvested a certain crop or animal, they would, risk starvation. Also, their ability to insulate themselves from natural threats was limited. In this setting people were directly related to their environments, thus the effects of their actions were

⁶⁶ Smith, M. F, (1984). "Wild" Villagers and Capitalist Virtues: Perceptions of Western Work Habits in a Preindustrial Community. *Anthropological Quarterly*, 57(4), 125-138.

relatively immediate⁶⁷. However, as societies developed into more structural and stable settlements man's relationships with his environment grew increasingly complex.

One of the more prominent developments in human history is the establishment of agrarian societies in various river valleys in the Middle East which allowed humans to have a greater degree of control over food production and their general environment. Permanent settlements allowed for a number of aspects of human society to evolve⁶⁸. Agrarian societies produced a social organization that allowed humans to accumulate intergenerational knowledge, develop complex physical and social structures, and made their relationship with their environment seem less immediate⁶⁹. For instance, with the advent of agriculture and the development of food storage processes humans were more capable of controlling their food supply⁷⁰. Also, the development of knowledge systems helped aid early societies by providing some, albeit not explicit, guidelines for dealing with one's environment and managing it sustainably⁷¹. The net effect of such development was to detach man from his environment and hence make the effects of his actions less immediate and tangible. The once direct relationship between over-harvesting and risk of starvation now manifested itself in a number of different ways.

⁶⁷ Russell, S., (2006). *Hunger an Unnatural History*. Basic Books.

⁶⁸ Dubos, R. J., (1980). *Man Adapting*. Yale.

⁶⁹ Lemonnier, P., (1993). *Technological Choices*. Routledge.

⁷⁰ Pringle, H., (1998). Neolithic Agriculture: The Slow Birth of Agriculture. *Science*, 282(5393), 1373-1600.

⁷¹ Griffiths, T., Robin, L., (1997). *Ecology and Empire: Environmental History of Settler Societies*. University Washington Press.

For instance, a society now could deplete the soil of an area through over farming. Such problems could be complicated by the fact that such dynamics could take decades to develop. In this time span populations could expand since there was more food being produced, and other forms of resource usage might also increase. In addition, such groups might have stored substantial amounts of food. Thus, recognition of the problem of how people can harm their environments might be a long time in coming. Each development in the complexity of society was accompanied with an additional increase in the complexity of man's relationship with his environment. Thus, as society grew more complex and resilient it also grew more difficult to understand for those being in it.

Medieval Society

Throughout most of recorded history work has occurred within relatively small organizations. Although there are some notable exceptions, traditionally work took place on small farms or in the shops of craftsman. These organizational patterns persisted until the industrial revolution of late 18th century Europe and North America. It is interesting to compare and contrast this non-industrialized work system with the industrialized one that followed it. There are a few aspects of the medieval system that are of particular interest to this study. First, is the structure of the average working day for various types of labor. Second, the number of official holidays given to workers is of interest. Third, the mentality that workers maintained about their labor is of direct interest.⁷²

⁷² Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books. pp 43-59.

Regarding the structure of the working day during medieval times, on average we find that typically it was adapted to human capabilities and the demands of the working environments. As noted in one observation, the working day was frequently interrupted with breaks, mid-day naps, and extended lunch breaks⁷³. Labor tended to be seasonal, based on the availability of daylight and the need for certain functions to be performed at particular times of the year⁷⁴. Also, it is noteworthy that the number of holidays granted for workers during medieval times was significantly higher than is the case in contemporary America. For instance, in Great Britain during the 14th century holidays consumed a total of 5 months of the year⁷⁵.

In addition to these social/culture and structural aspects, some analysts contend the mentality of work during the medieval period was substantially different than it is today. As noted by the medieval Bishop Pilkington,⁷⁶ medieval workers tended to prefer work that was done to subsist rather than work to advance either in wealth or social standing⁷⁷. One can attribute this tendency to a few possible causes. First, the relatively static nature of the medieval social and economic structure would serve to dampen aspirations. Since social status was mostly determined by lineage within caste systems there was little opportunity to advance in life or wealth. However, a second argument

⁷³ Thomas, K., (1964). Work and Leisure in Preindustrial Society. *Past and Present*, 29, 55-66.

⁷⁴ Ritchie, N., (1962). Labour Conditions in Essex in the Reign of Richard II. In E. M. Carus-Wilson ed. *Essays in Economic History*, Edward Arnold.

⁷⁵ Ritchie, N., (1962). Labour Conditions in Essex in the Reign of Richard II. In E. M. Carus-Wilson ed. *Essays in Economic History*, Edward Arnold.

⁷⁶ Thomas, K., (1964). Work and Leisure in Preindustrial Society. *Past and Present*, 29, 55-66.

⁷⁷ Le Goff, J., (1980). *Time Work and Culture in the Middle Ages*. University of Chicago Press.

could be advanced that members of medieval society valued their free time more than they valued an additional accumulation of material items or higher social position. Regardless of which explanation of the medieval work ethic we adopt, the consumerism and desire for social advancement characteristic of contemporary American would be quite foreign concepts in Medieval society.

Industrialization

During the late 18th century the process of industrialization fundamentally altered how most people perceive and participate in work. Although historical accounts of everyday people's perceptions of work from this time are rather limited, it is widely accepted that early industrialization fundamentally altered how work is structured and performed. As mentioned before, there are two significant dynamics of the modern work environment upon which we should concentrate. The first is the division of labor, both in a horizontal and vertical sense. Such a division has created vast segmentation in the different types of labor present. Also, as some scholars have noted it has routinized work in such a manner that creativity and autonomy have been removed from most work and those characteristics of work have been replaced with the structural systems that force people to adhere to a certain method and pace of doing things. As a result these systems force individuals to use their time in a certain manner and concentrate on using a certain range of skill. Creativity and flexibility are difficult for most people to integrate into mass and standardized production. We can attribute this structural pressure both to an economic inclination to specialize and to an ideology that discounts diversity.

Aside from the need for a division of labor, the use and ownership of labor can be described as the second major factor influencing modern work. In short, most people do not work for themselves in a subsistence fashion. Work is either done for an employer, on the employer's terms, or it done in a fashion to obey the mandates of the market. In either instance an individual's work is controlled to achieve economic productivity. To add to this situation we also find that the products of the worker's efforts are often directed towards entities other than the worker. It is standard and accepted practice for employers, stockholders, and managers to profit from the labor of others. This use of labor has led to a system of management which aims to maximize the use of individuals for purposes of work.

The development of the factory system in the United States and Great Britain caused a number of changes in the nature of work. Most of these factories were used to produce textiles which, prior to the invention of the mechanical loom, was a tedious process done by hand either in the home or in small workshops. However, factories expanded the ability to produce things well beyond the capacity of one given person. As alluded to before, with an increase in capacity and complexity came an accompanying division of labor. Once autonomous individuals became merely extensions of the machines that they maintained. Accompany this trend with such inventions as gas lighting and the desire of factory owners to control workers and maximize production, the impersonalization of the boss/worker relationship, and one arrives at a system in which factory work effectively reduced humans to be extensions of the machines they ran and to the owners that profited from them.

It is also noteworthy to comment at this point on how industrialization expanded their level of control and use of labor. Since large amounts of capital were needed to develop and operate a factory, owners of capital tended to organize and develop systems through which to exploit the labor that operated its factories. Thus, the classic Marxist division between labor and capital developed. What typifies this division are the divergent goals of labor and capital. Capital desires to maximize the profit it gains from labor regardless of the effect it has on labor. In contrast, the goal of labor is to support itself and hopefully prosper from the sale of its labor. Although somewhat of a neutral dynamic at first glance, the reality of the early capital labor dynamic was much more lopsided. In this instance capital possessed a disproportionately large amount of influence over the dynamic since they possessed more resources, were more organized, owned factories, and controlled media outlets.

The early phases of industrialization have ultimately served two functions. The first was to transition people from a pre-industrialized work mindset to an industrialized way of thinking. As a number of observers have noted, factory owners initially had a tremendous amount of difficulty in constraining workers to the strict schedules and routines of factory life⁷⁸. The primary reason for this was that workers were not accustomed to such schedules or disposed to possess the obedient mentality that was required for factory work. Interestingly enough, this difficulty at socializing factory workers led many factory owners to be proponents of compulsory education since it was

⁷⁸ Landes, D., (1983). *Revolution in time, Clocks and the Making of the Modern World*. Harvard University Press.

assumed that if education could be structured in a manner to resemble a factory system children could be taught from a young age that such a form of social organization was natural⁷⁹. Ultimately, this form of public education and a number of other means of socializing people to accept the dynamics of capital and industrialization has over the past two centuries caused most of the people of many contemporary societies to endorse a set of values that serve such systems.

The second major accomplishment of early industrialization has been to create a division between formal and informal economic activity. Prior to industrialization the division between formal and informal work was not particularly clear. Much of the work that would occur on a farm or in a small shop could often be defined as being both domestic and formal in its nature. For instance, people would often raise crops for both sale and their own consumption. Also, much of the pre-industrial social mentality did not distinguish between those involved in domestic labor versus work done outside of the home⁸⁰. Additionally, neighbors would often cooperate to achieve tasks that were only possible through the labor of a large group of people such as harvesting or raising a barn. These gatherings were social occasions as well work.

However, with the advent of the factory system the division between formal paid labor and informal, unpaid labor grew. There are a number of reasons for this historical occurrence. The first is the formal and demanding nature of factory labor. Factory labor

⁷⁹ Cubberley, E. P., (1919). *Public Education in the United States: A Study and Interpretation of American Educational History*. Houghton Mifflin Company.

⁸⁰ Folbre, N., (1991). The Unproductive House Wife: Her Evolution in the 19th Century Economic Thought. *Signs*, 6(3), 463-84.

not only established a system in which a family depended upon a breadwinner, typically the male head of household, to acquire money to support other activities in the family, but also the factory system effectively mandates a division between formal and informal labor since it was commonly expected that factory laborers work 16-18 hours a day. Thus, the ability of someone working in such a system to perform domestic tasks was effectively highly limited.

The early phases of industrialization can be categorized as a somewhat rigid and primitive attempt at integrating people with often dangerous technology so as to serve what was seen as economic modernization. Although many people in prior agricultural societies were accustomed to long hours of work, such was done in an effort to subsist rather than to produce above what was needed. Regardless of how one views the early factory system and early modern capitalism this system undoubtedly helped create a number of social structures and belief systems that evolved into fundamental parts of our social and economic system. With some understanding of the pre-industrial and early industrial worlds of work, we are then able to chart the development of labor and labor-related policies up through the present.

Any system taken to an extreme that affects significant numbers of people in an adverse manner most likely will either collapse or be under considerable pressure to reform itself in a manner that makes it less offensive. The harsh realities of early industrialism fit into this category. The extreme nature of the early system in what it demanded of people led to ongoing resistance. In the two centuries since the

development of the industrial economy the voices in opposition or in favor of that system have subscribed to a certain set of master narratives that, although time and specific circumstances have changed, have retained the same general meaning. On one hand we find the voice of labor arguing for adequate compensation and fair and safe working conditions. On the other hand we find the voice of business arguing for economic efficiency and productivity. In either instance it is possible to extend these arguments to greater world views. In terms of labor we find a view that emphasizes social justice and equity while in the instance of business we find one that upholds ideals of capitalism and traditional legalism. This ideological schism has been the traditional framework through which we have viewed the divide between labor and business; however it also possible to develop a number of alternative outlooks which can resolve much of the conflict between business and labor. Creating such a synthesis would be of great utility to models of sustainability and work.

The first challenges to the factory system came on two levels. First, those who labored in the factory systems began to organize and directly challenge their employers. Second, there were a number of contemporary observers such Charles Dickens and Karl Marx who noted the abuses of early industrialism. These individuals either directed their attention at specific aspects of the factory system or at social structures underlying the system⁸¹. In terms of specific criticisms of the factory system, most reformers focused on the length of the work day, low rate of pay, dangerous working conditions and the use of certain vulnerable groups such as children and young women. Once these issues were

⁸¹ Dickens, C., (1992). *Oliver Twist*. Wadsworth Classics.
Tucker, R. C., Marx, K., (1978). *The Marx-Engels Reader*. Norton.

identified various groups of workers began organizing to protest employers' tolerance of such activities. One such example would be labor's activities during the 1860's in Chicago to organize and petition for an 8-hour working day⁸². This movement consisted of both workers striking and various groups petitioning for legislation to protect workers.

Many of these movements were violent both with respect to those protesting and in efforts of businesses. One particularly bloody incident resulted from a strike at Carnegie's US Steel factories in Pittsburg in 1882. During the 1882 Strike, Carnegie authorized the use of the private militia of the Pinkerton's to demobilize the strikers. The resulting violence led to the deaths and injuries of a number of people. Much of the labor activities of the 19th century consisted of such episodes⁸³. Efforts at reforming the policies of business or legislating worker protections mostly produced mixed results. Organized labor, along with a number of other social movements, succeeded in limiting the use of child labor and also provided some worker protections. However, many of the trappings of early industrialism continued well into the twentieth century. In the instance of work time, we find that although there were many efforts at limiting the 12- 14- and often 16-hour days, very few of these efforts were in fact successful. The interests of business and capital often have relied on threats of unemployment or direct physical

⁸² Green, J., (2006). Death in the Haymarket: A Story of Chicago, the First Labor Movement, and the Bombing That Divided Gilded Age America. *Industrial & Labor Relations Review*, 60(2), Article 90.

⁸³ Demarest, D. P., Weingartner, F., (1992). *The River Ran Red": Homestead 1892*. University of Pittsburgh Press.

coercion to repress anyone who questioned their policies⁸⁴. Also, it was common practice to fire pro-union workers, and close unionized facilities.

On a higher level, if we look at the rhetoric of those opposed to reforms we find a theme that appears strikingly similar to justifications given in contemporary settings as reasons not to limit the amount of formal time individuals work. In the instance of 19th century business opposition to a shorter work day, most of the rhetoric fell into two basic arguments. The first is that if business were to grant a shorter working day, and a higher rate of pay, they would fail to be competitive and ultimately be overcome by a competitor with who provided fewer benefits to their workers⁸⁵. The second justification is that by not using workers at a level that consumed them almost completely one would be promoting laziness and idleness which lead workers and hence society into a state of moral and economic decline⁸⁶. This argument is more general and normative in its nature than the economically-based argument and casts light on the greater ideological leanings of opponents of work time reforms. Specifically, we must tie this assertion to the elitism and social Darwinism of the 19th century. Both assume the inherent inferiority of some individuals to govern themselves. Thus it required a benevolent elite to guide them out of such a state, or at least contain it in a manner that someone can profit from this “molding of demeanor” of the mediocre masses.

⁸⁴ Dubofsky, M., (1985). *Industrialism and the American Worker, 1865-1920*. H. Davidson.

⁸⁵ Yellen, J., (1986). *Efficiency Wage Models of the Labor Market*. Cambridge University Press.

⁸⁶ Roediger, D., Foner, P, (1989). *Our Own Time: History of American Labor and the Working Class*. Verso.

Although the lasting gains of those opposed to the excesses of early industrialization were somewhat limited, it is possible to note some beneficial changes in the potential system within which industrialization developed. There was more awareness of the discontent of the working classes, some criticisms of the structures of modern capitalism, and the development of organized efforts at reforming the system and protecting the interests of laborers.

In addition to the creation of the modern labor movement, the period between 1850 and 1930 also was a time when various structural changes in how we view work and social roles occurred. One of the more significant of these changes was the growth in the distinction between formal and informal work. As discussed previously, earlier economies prior to the factory era often did not distinguish to any great extent between paid and unpaid labor. However, with the advent of the factory system and the concept of the “male bread winner” a distinction grew between those involved in domestic and non-domestic labor.

The development of a system that differentiated between formal and informal labor came about as a result of the combination of a number of factors ranging from the economic realities of modern industrialism to social conceptions of gender roles. As discussed before the demands of early capitalism and industry often required that work consume most of worker’s time. With a factory job consuming 12-18 hours a day, and six to six and a half days a week, it was unlikely that a worker could attend to domestic work such as shopping, raising children and cleaning.

With this situation as a basis, a dynamic evolved in which men were perceived as being the primary economic providers for the families while women stayed at home and attended to domestic tasks. Also, some have noted that social norms played a role in the development of the male bread winner model⁸⁷. Specifically the norms of later 19th century America placed a high value on women being mothers and domestic servants. Thus, the cult of domesticity contributed to the mentality that the proper social function of women was to be mothers and housewives. The male bread winner model has persisted in one form or another since its inception. As will be discussed later economic realities have changed and made it such that two incomes are often required to support families; however, many people view the structure and operation of a family as being properly based upon the single earner model.

Aside from the gendered division of labor, it is also possible to note another development that occurred in the division between formal and informal labor during the 1850-1930 period. Traditional American households were mostly autonomous in their production of goods. With some exceptions, many American households were self-sustaining in that they produced their own food, fuel and clothing. However, with the increase in the division of labor and the advent of the industrial economy, the standard practice of an American household evolved into a system in which individuals, primarily men, were involved in some type of formal economic activity that resulted in them being able to buy products rather than to produce them directly. This development in how

⁸⁷ Janssens, A., (1998). *The Rise and Decline of the Male Bread Winner Family?* Cambridge University Press.

families provided for themselves can be linked to a number of other trends in American society.

First is the growing distinction between the worth of formal and informal labor. Since families grew to rely on formal economic activity as their primary method of existence, it is possible to make the case that social institutions developed to value formal over informal economic activity. One prime example of this is the change seen in the early census which initially defined domestic work, such as that done by housewives, as work; however, in time this type of labor was not considered work in the census⁸⁸. This disregard for informal work can also be linked to the undervaluing of informal economic systems. Such a devaluation can be seen as hindering places where informal labor is particularly valuable, such as in poor and rural areas where formal economic resources are limited.

Finally, we can establish a direct link between formal work and consumerism. Considering that paid labor grew to be considered the primary form of economic activity in America, one can hypothesize that this development went hand-in-hand with the rise of the consumerist mentality. Per se, it is possible to argue that when paid labor became perceived as the standard of existence it was only natural for people to consider success at life as being derived from one's ability to consume products. Also, this mentality ties in with earlier aspects of the Protestant Ethic in that it was commonly believed that

⁸⁸ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

material success was one aspect of being the predestined elect.⁸⁹ With this development of the formal economy we find that informal or unpaid activities took a secondary position relative to compensated labor. Thus, unpaid labor has been a somewhat neglected topic in theories of economic productivity as they apply to entire economies.

Early social theory: Weber, Marx and Engels, Durkheim and Fredrick Taylor

In addition to changes in social structure there were a number of theoretical and technical developments that occurred during this era that are both relevant to work and the social structure within which work occurs. Although these theories are not fundamentally necessary to the analysis presented here, they help provide some perspective as to the social undercurrents that have contributed to the commonly accepted canon of social theory that forms the basis for much of this analysis. In particular, it is useful to briefly describe Weber's theory of bureaucratic function, Karl Marx's theory of the development of industrial capitalism⁹⁰, Emile Durkheim's division of labor⁹¹, and Frederick Taylor's scientific management⁹².

Marx and Engels' observations about the nature of a capitalist social system lend a tremendous amount of understanding to the social and economic dynamics established

⁸⁹ Weber, M., (2002). *The Protestant Ethic and the " Spirit" of Capitalism and Other Writings*. Penguin Group.

⁹⁰ Tucker, R. C., Marx, K. (1978). *The Marx-Engels Reader*, Norton.

⁹¹ Durkheim, E., (1997). *The Division of Labor in Society*. The Free Press.

⁹² Taylor, F. W., (1998). *The Principles of Scientific Management*. Dover Publications.

between workers, business and the greater interests of capital.⁹³ Using Marx's hypothesis that capital must exploit and marginalize the proletariat so as to maintain its wealth and power, we are able to explain much of the dynamic between labor and business discussed in this work. Using Marx's theories of both economics and social control, we can conjecture about the specific relationship between business and labor. The first, as alluded to above, is that capital will aim to use labor to the fullest extent so as to profit in a monetary sense. The second is that for capital to maintain its position of authority it must exploit labor to varying degrees. Third, regardless of the economics of the dynamic between capital and labor, capital also desires a certain level of social control over labor for the purpose of repressing labor's ability to express its economic and social aspirations.

Although much of Marx and Engel's prescriptions about how to deal with the capitalist system have proven questionable, their description of the classic dynamic between workers and the interests that control them maintains a great degree of validity both in the context of early industrial economies and in more contemporary settings.

Max Weber's theory of rational organizations is another theoretical perspective that developed during the early phases of industrialization that can aid in our understanding of how work and time use came to be structured as they were⁹⁴. Arguably Weber laid the ground work for our modern understanding of how organizations should

⁹³ For a general discussion of Marx's views of economic and social systems it is best to refer to the *Communist Manifesto*. Marx's other works provide more detailed insights and deserve mention as well.

⁹⁴ Weber, M., (1997). *The Theory of Social and Economic Organization*. Free press.

ideally act. Weber hypothesized that the ideal modern organization was a rational, hierarchically structured entity in which individuals act based upon the directive of those above them. Also, Weber makes the case that for such a hierarchical system of management to operate it must use a system of compensation that gives an employee incentives to demonstrate loyalty to their employer rather than to other groups such as families or religious groups.

Although there has been much subsequent work to expand on Weber's initial theory of organization,⁹⁵ it is possible to see the persistent utility of Weber's theory in our understanding of what determines the use of time during work-related activities. Specifically, the idea that work is hierarchical in structure and based upon incentives is particularly relevant. For instance, we could view self-employed individuals as working within the structure of an economic system. Since the economy is structured in such a manner as to have forceful influence on individual economic actors it is possible to view the economic system as serving the same function as a hierarchical rational organization. Additionally, we can use the basic concept of the rational organization to understand both the beneficial and pathological manifestations of organizations.

For instance it is possible to argue that many of the issues relating to overwork and inequitable patterns of time use stem from a system of organizational incentive that motivates people to work more than is desirable. As has been much discussed in various

⁹⁵ Thompson, J. D., (1967). *Organizations in Action: Social Science Bases of Administrative Theory*. McGraw-Hill.

analyses that followed Weber's initial work,⁹⁶ there are any number of instances that portray the potential of organizations to use their rational structures in a manner that harms some group or some individuals. Alternatively, it is also possible to argue that organizations can use systems of rational structure to gain greater levels of equity in time use or achieve higher levels of sustainability. Ultimately, Weber's notion of the rational organization provides us with both an understanding of how certain dynamics have evolved, especially in the work place as it relates to time use, and how organization can be used potentially to alter certain unsustainable patterns of behavior.

Durkheim's theory of the division of labor parallels much of Weber's organizational work in that it can address the nature of work affects upon people within an organization. However, Durkheim's theories can also be extended to the entirety of society. Durkheim, in his 1883 work the *Division of Labor*, makes the case the society operates by individuals specializing in certain tasks. Thus much like the arguments of Adam Smith,⁹⁷ with this increase in specialization comes an increase in efficiency. Durkheim used this concept to then make the case that because different individuals possessed different sets of knowledge, the more societal and technological development the more interdependent, both socially and economically, people would become. It is possible to apply theories relating to the division of labor to both early industrialization and subsequent divisions between formal and informal labor. Specifically, one can make the case the many of the gains in economic productivity were had as consequence of more sophisticated divisions of labor in production.

⁹⁶ One excellent example of this is Hanna Arhendt's discussion of the "banality of evil."

⁹⁷ Smith, A., Raphael, D. D., (1991). *The Wealth of Nations*. Random House.

In addition, we can attribute, at least in part, some of the adverse aspects of industrialization to misplaced applications of the division of labor. For instance although it makes economic sense to have a factory worker specialize in operating one machine, the long term effects of such activities might be quite negative relative to the health of the worker and their ability to perform other tasks. Additionally, a division in labor on formal and informal work, such as featured in the male-bread winner model, can lead to situations where other arrangements are neglected such as in a household where both parents work.

In a more modern context, Durkheim can lead us to develop a number of highly useful observations about how our tendency to specialize economically has led us to various questionable ends. First, there is the issue of the division between formal and informal labor. On certain levels, and especially in some countries such as the United States, this division has resulted in the marginalization of informal labor. Also, this division is based upon a presumption that the male-bread winner model is universal. Second, we should question whether an increase in the division of labor in fact leads to the organic solidarity Durkheim hypothesized. Conceivably, if individuals are reduced to highly specialized and individualistic roles, they may ultimately lose their desire to be social and participate as members of a community. As will be seen, it is possible to draw from Durkheim's perspective by noting the specialization in work and social roles is ignored in certain ways, and by taking the critical perspective on the effects of excessive specialization.

Taylor's formulation of scientific management represented an important development in our understanding of work during the early twentieth century. This development contributed to a re-conceptualization of work as a mechanical, scientifically-based activity. The principles of scientific management stemmed from a desire to reduce work to a quantifiable and scientific activity, and thereby improve productivity. The work of Fredrick Taylor in particular exemplifies the tenets of this movement. Taylor invented the idea of the time and motion study. In essence, the time motion study attempts to gauge a worker's productivity by reducing their movements to quantifiable elements and then determining the "one best way" to do an activity to achieve maximum productive purpose. Taylor's ideas were applied in an effort to both improve worker productivity and to manage worker's time and behaviors in a way that served their employers' interests.

What is interesting about the application of scientific management is that its principals were applied to situations well beyond the basic time motion study. For instance, in an essay in which Taylor described the virtues of scientific management he made the case that workers are often selective in their desire to work efficiently and that if an employer were "scientifically oriented" the employer would make every effort to limit these inefficient behaviors in favor of ones that were more profitable⁹⁸. What this amounts to is that scientific management often was used to add a scientific basis for employers to design and use systems to limit their employees' ability to act in their own

⁹⁸ Taylor, F. W., (1998). *The Principles of Scientific Management*. Dover Publications.

self interest. Much of what Taylor and others deemed inefficient work was merely workers setting a pace that made sense to them in terms of their level of compensation and the greater context of work such as maintaining relationships with co-workers. Also along these lines, much of Taylor's work has been extrapolated to studies of worker temperament and how it relates to their job performance⁹⁹. Although in some instances this research has focused on matching worker dispositions with certain types of work, many have also noted the propensity of such approaches to weed out troublemakers and other potential "problem" employees.

Using the principles of scientific management and integrating them with technology we find that the assembly line represented a development in technology that offered a controllable mechanical standard by which work could be regulated. Also, the assembly line effectively removed the choice of a worker to set a pace and make decisions outside of the context of a set routine. This change in the perception of work has had a number of implications. In the instance of normative changes, it is possible to discern a further legitimating of the idea that employers can control and manipulate a worker in a ways that serve the economic interests of the employers. Also, scientific management can be seen as removing much of the individually developed skill and understanding that is associated with traditional work. Specifically, scientific management altered the value of work from being something done by a skilled individual such as a craftsman to being an activity completed by any one as part of a greater, pre-determined mechanical routine.

⁹⁹ Salgado, J., (1997). The five factor model of personality and job performance in the European community. *Journal of Applied Psychology*, 82(1), 30-43.

Lastly, scientific management contributed to the idea that economic productivity stems from economization and micromanagement. Scientific management has often been criticized for the reductionistic approach to labor. Such criticisms fit well into a greater commentary that is highly critical of an overly rational-economic view of human existence. However, some scientific management has perceivable utility in that it presents us with the notion that if we systematically assess behavior we will be able to determine what is productive and what is not over an extended time frame of the sort that is needed for understanding sustainability. The basic principle of scientific management can be used to help create a sustainable model of work and time usage.

Specifically, we must view a worker in terms of the totality of his or her existence including work and non-work activities. Once this change in scope has been achieved it is then possible to apply a version of the time motion study to the entirety of a worker's behavior. By studying the efficiency of an individual's actions and time allotment in the context of sustainability, it is then possible to create a model of what would be an optimal situation for a given person. Also, by studying behavior in a systematic manner that considers how well a given action helps achieve a sustainable end it is possible to develop a set of indicators that will help officials develop and implement policies which can promote sustainability more effectively.

The four theoretical approaches of conflict theory, Weberian institutionalism, Scientific Management and Durkheim's division of labor providing the theoretical basis

for much of the later analysis of the dynamic between work, time and sustainability. These theories are extremely useful since they address both macro level political and social forces and micro-level issues of management and policy. Although useful, these theories will require some modification to be applicable to modern situations for which their use was not originally intended. However, regardless of this caveat, they definitely provide a sound theoretical basis for further analysis. Ultimately, it is a strange compliment to the theories of early industrialized society that they can be used to address the issues of a modern, post-industrial economy.

1930-1960

Beginning with the Great Depression, the nature of work and work-related policy has evolved significantly, although much of the basic structure, both at the level of the individual and at the level of society, has remained the same. Of particular importance, we find that although labor has made significant progress in expressing the interests of workers, the structure of work continues to be mostly determined by employers and greater economic forces. Also, we find that much of the policy related to the management of work has been done either as a concession to organized labor or has been done in an effort to better manage the economy. With these general thoughts in mind it would be useful to explore both the development of work since the Great Depression and also some specific aspects of public policy, economic developments, and general social trends during this period.

The Great Depression can be seen as the focusing event that significantly altered public attitudes towards work and work-related policy in the United States. The Great Depression began with the crash of the stock market in 1929. This event signaled the end to the highly speculative economy of the 1920's and also led to economic repercussions that included unemployment in excess of 30 percent and high levels of sustained inflation¹⁰⁰. These circumstances led to the replacement of the complacent Hoover administration with the more proactive government of Franklin Roosevelt. Roosevelt's government, in conjunction with the efforts of organized labor, set out to relieve much of the distress of the Depression along with creating new government programs and standards intended to aid the average worker.

This set of policies known as the New Deal established two types of labor-related policies. The first were social insurance programs intended to provide a safety net for workers in the event that they were displaced from their jobs. The second major area related to workplace standards. The Fair Labor Standards Act of 1938 legislated a 40 hour work week with time and a half pay beyond 40 hours work¹⁰¹. Also along these lines the Wagner Act established labor's right to organize¹⁰².

In addition to the Fair Labor Standards Act there were also a number of other proposals geared to addressing the issue of work time. Amongst such proposals were a number of plans to reduce the work week to less than 40 hours. Most of these plans were

¹⁰⁰ Himmelberg, R. F., (2001). *The Great Depression and the New Deal*. Westport.

¹⁰¹ The Fair Labor Standards Act of 1938 (1938). (FLSA, ch. 676, 52 Stat. 1060, June 25, 1938, 29 U.S.C. ch.8)

¹⁰² Wagner Act, *National Labor Relations Act* of 1935(1935). (29 U.S.C.A. § 151 et seq.)

put forth by labor unions as a method of maintaining full employment¹⁰³. However, a number of businesses also used this practice to keep their labor force in work¹⁰⁴. The idea of reducing work hours to allow more people to work is not merely an idea applied during times of economic hardship. This practice, as embodied in the full employment model of economics is also a concept that is used in terms of creating an economic model for an entire economy. Such economic models as the full employment model and many aspects of the New Deal embody the essence of Keynesian economics,¹⁰⁵ which became popular during the Great Depression. Ultimately, the Great Depression provided a sufficient reason for labor to have enough leverage to mandate certain workplace and economic reforms; also the Great Depression signaled the creation of a modern welfare state in America.

The onset of World War II effectively ended the system of reforms being implemented by either government or organized labor in the American economy. With America at war two dynamics interfered with labor's efforts at developing a stake in the control of work time and the overall regulation of work. The first dynamic was the increase in employment either in industries related to the war effort or via military conscription. The issue of unemployment that was rampant during the Great Depression was effectively solved. The second dynamic involved the creation of a large industrial infrastructure which, during the war, proved necessary to support military efforts. Thus,

¹⁰³ The Fair Labor Standards Act of 1938 (1938). (FLSA, ch. 676, 52 Stat. 1060, June 25, 1938, 29 U.S.C. ch.8)

¹⁰⁴ Kalecki, M., (1971). *Selected Essays on the Dynamics of the Capitalist Economy 1933-1970*. Cambridge University Press.

¹⁰⁵ Keynes, J. M., (1936). *The General Theory of Employment Interest and Money*. University of California.

industry gained some leverage in limiting labor reforms since production of industrial goods was perceived as necessary to win against America's adversaries.

Following World War II America found itself in a strategic position relative to economic capabilities and political power in the global theater. America, with its industrial complex intact and well developed from the war effort was able to shift production from war-related goods to consumer products. This capacity combined with many of the reforms to labor, resulted in conditions that many observers have concluded was the "Golden" post war era¹⁰⁶. During this period of high optimism many of the dynamics of modern American consumerism came into full play. However new the situation, much of what defines the post-war era is in fact a relic of prior stages in the development of the industrial American economy.

One particularly interesting example of the further development of existing patterns in society was how 1950's culture dealt with the issue of the division of labor, both in terms of gendered roles and the division between formal and informal economic activity. As countless cultural icons such as the television shows *Leave It to Beaver* or *The Donna Reid Show* demonstrate, the standard perception of the male breadwinner and the female domestic worker was maintained and embellished to the extent where roles that deviated from this stereotype were mostly perceived as marginal or derogatory.

¹⁰⁶ Vidal, G., (2000). *The Golden Age*. Double Day.

As an interesting side note, this perception of women as mothers whose primary role was to attend to the home and raise children also extended itself to the realm of welfare policy. As Skocpol¹⁰⁷ notes in her insightful work much of the welfare policy of this time was directed at maintaining unmarried or widowed mothers in their traditionally conceived domestic role rather than promoting their formal involvement in the economy. This model of the culturally-sanctioned division of labor has had a number of lasting effects upon how we perceive work and work-related activities. Although this stereotypical arrangement has become almost cliché in its perception, many of the basic tenets of the male bread winner model persist. For instance, the notion of a single income family is still for the most part the primary social and economic model people use when they think of families' involvement in the economy¹⁰⁸. It is also the case that this perception has continued to effectively discount the value of domestic labor. Regardless of the necessities of a 21st century economy, which often mandates that families be supported by two income earners, or awareness of informal domestic work brought forth by the second wave feminist movements of the 1970's, many of the stereotypes of 1950's America persist.

Another trend from the 1950's that is significant to our greater discussion of work and time use is that of the dynamic between labor and business. Although the 1930's proved to be a time of critical reassessment of how work should be regulated and what role the government should play in the economy, the 1950's proved to be a continuation

¹⁰⁷ Skocpol, T., (1992). *Protecting Soldiers and Mothers: The Political Origins of Social Policy in the United States*. Belknap Press of Harvard University Press.

¹⁰⁸ Sainsbury, D., (1999). *Gender and Welfare State Regimes*. Oxford University Press.

of the trend of business possessing the upper hand in terms of setting labor policies and controlling the political dynamics that might influence labor policy. Two examples of such a trend were the anti-communist sentiment of the period and the efforts at addressing various issues of “cultural decay”- most notably of which was the issue of pernicious idleness.¹⁰⁹ Many observers have noted that the anti-communist movement with its active political persecution of left-leaning individuals and groups effectively quieted organized labor¹¹⁰. Labor unions and other groups that aimed to organize the interests of labor were fearful of being labeled communists. In light of this these fears labor organizations limited their objectives. Specifically, they were hesitant to be proactive in the developing labor policy. As a consequence of this political setting such organizations tended to pursue policies geared principally, towards maintaining the well being of their existing members.¹¹¹ This reaction of labor to the anti communist sentiment of the 1950’s created a lasting trend in which the influence of organized labor on public policy and the operation of the economy has been much more limited than in other industrialized countries.

The second example of how the prior status quo of business and capital possessing dominance in the discourse over work continued was through various “social movements” aimed at addressing perceived problems in society. One prominent

¹⁰⁹ Lynes, R., (1958). *Time on our Hands*. In Larrabee E and Eyerson R Eds., *Mass Leisure*. Free Press.

¹¹⁰ Schrecker, E., (1994). *The Age of McCarthyism: A Brief History with Documents*. St Martins Press.

¹¹¹ Goldfield, M., (1989). *Decline of Organized Labor in the United States*. University of Chicago Press.

legislative example of this is the Taft Hartley Act¹¹² which significantly limited the power of organized labor¹¹³. The movement to deal with the issue of idleness and laziness is of particular interest for the analysis of work time. As Schor notes¹¹⁴, there was much public discourse relating to how Americans allegedly had too much free time on their hands and that if the issue was not dealt with it might lead to moral decay and radicalism. Regardless of whether or not this was in fact the case, merely noting something as an issue brings attention to it. Thus, by various conservative and business orientated voices noting the “problem” of free time it may compel the uninformed to think there is an issue that needs addressing.

In the instance of idleness, it seems convenient that business would adopt such as an issue. First, it might lead to the idea that people should work more so as to avoid such things. Also relating these concepts to political “radicalism,” it no doubt creates the connotation that those who defend such idleness are in favor of things not commonly condoned by the average American. Regardless of these hypotheses, it is relatively easy to discern that with the onset of World War II the public discourse on work and labor policy had reverted to its prior state of one in which business and the interest of the holders of capital assets possessed a dominant position in terms of public discourse.

¹¹² Taft-Hartley Act (1947). Labor–Management Relations Act, 80 Pub.L. 101; 61 Stat. 136. This act provided for a number of measures that effectively limited the powers of labor unions such as regulations relating to close shop policies, strikes and various other employer/employee related regulations.

¹¹³ Taft-Hartley Act, (1947). Labor–Management Relations Act, 80 Pub.L. 101; 61 Stat. 136.

¹¹⁴ Roediger, D., Foner, P., (1989). *Our Own Time: History of American Labor and the Working Class*. Verso.

Also during this time the establishment of a system of overtime allowed for both workers and employers to circumvent the new time limit standards established for workers. The overtime system which was a part of the Fair Labor Standards Act of 1938 was intended to limit employers' extension of workers' hours by mandating a minimum of time and a half pay for hours worked in excess of 40 hours a week.¹¹⁵ Although this measure was intended to limit hours, the net effect of this policy in many instances has been to create a system of incentive through which working hours are expanded. Relative to the employer, workers are presented with a strong financial incentive to extend their time spent working. Also, employers have an incentive to use overtime since it often less expensive than to hire new workers when one considers the cost of training and benefits. Along these lines it is also easier to trim back hours when times are bad; employers can cut hours rather than laying off employees which can attract adverse publicity. In light of this, the dynamic established by overtime has helped contribute to a system of expanded hours for wage laborers when compared to expanding the number of full time employees.

The solidification of a mass consumerist mentality and its subsequent incorporation into the greater economy represents one of the more significant achievements of the 1950s. As discussed above, post-World War II America was in a position that both desired material goods and, with its new-found economic prosperity, could afford them. However, to understand consumerism merely as this dynamic alone is somewhat simplistic. Consumerism is not merely the desire to purchase goods and

¹¹⁵ The Fair Labor Standards Act of 1938 (1938). (FLSA, ch. 676, 52 Stat. 1060, June 25, 1938, 29 U.S.C. ch.8).

services, it is also a mentality by which certain things are valued simply by their existence as a commodity on the market.

Consumerism can also be the basis for appraisal of social status, culture and intellectual orientation. Thus, consumerism represents a development in American culture that is not only an economic activity but is a socially encompassing ideology¹¹⁶. Relative to our greater discussion of work, time and sustainability, it possible to attribute many of the phenomena of modern work to the desire to adhere to a consumerist ethic. Adhering to the doctrine of consumerism has had a number of effects on the structure of work and how resources are used. For instance, consumerism which complements the notion of planned obsolescence has created a system in which work and other economic activity is not done in an effort to achieve subsistence but often is done for the purpose of acquiring products to replace items that have become unfashionable or otherwise undesirable. Thus, much work and effort are done in an effort to maintain the behavior rather than to expand in other directions.

Also, consumerist tendencies extend beyond the realm of mere material consumption. As the colloquialism “keeping up with the Jones’s” alludes, it has become a standard to judge individuals’ merit and worth by their level of material consumption. Such trends have often exerted themselves in areas of society not typically seen as being primarily economic in nature. Individual’s education, ideology and religious faith have

¹¹⁶ A good discussion of this can be found in Thorstein Veblens’ *Theory of the Leisure Class*. Veblen, T., (1899). *The Theory of the Leisure Class: an economic study of institutions*. Dover Publications.

all been assimilated to some extent into a consumerist worldview¹¹⁷. Although the consumerism of the 1950's seems relatively quaint in comparison to the materialist sentiment of contemporary American society, it does represent the structural genesis of what has become one of the defining aspects of the modern economy.

1960's and 1970's

The period of 1945-1970 marked an era of relative stability in terms of work time and other factors that are relevant to this discussion¹¹⁸. However, beginning in the late 1960's various economic and social changes occurred that altered the equilibrium of the early post-war era. These changes, ranging from new global economic dynamics to social movements such as second wave feminism, have created an environment that can be typified by increasing competition, longer hours and diminishing earning power for much of the American labor force. This trend which began in the late 1960's has continued to the present. This period represents the most defining time in terms of its influence on the present dynamics regarding work and time use. Also, this period requires critical analysis both relative to American trends and policies and also alternative approaches that have been adopted by other industrialized countries.

Two of the economic developments of the greatest relevance to this analysis are inflationary pressure on wages and increased global competition; both have been primary

¹¹⁷ Stiles, P., (2005). *Is the American Dream Killing You?, How "The Market" Rules Our Lives*. Collins. Also of note are things such as evangelical Christian's adherence to the prosperity doctrine, libertarianism, and the decline of traditional liberal education.

¹¹⁸ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

motivators in terms of increasing working hours in the U.S. Also, existing trends such as a consumerist appetite and the lack of society's recognition for informal labor may be causing some of the dynamics that have been observed regarding work time.

Since 1973, the actual earning power of the average American worker has been steadily declining¹¹⁹. This decline in real wages reflects both an increase in the cost of living and various market forces which have depressed the cost of labor. Couple this lack of real growth in wages with an increase in material consumption and one arrives at a situation in which the expansion of our material lives has been accomplished through increasing hours of work, reduced amounts of vacation, and increasing amounts of debt. Although this dynamic of inflationary pressure with a lack of real economic progress received much public attention during the 1970's, there has been little subsequent progress in addressing this issue, both in terms of creating tangible economic growth for average Americans and also increasing their earning power in a manner that does not demand increasing working time substantially. Also, some have made the case that this relationship holds for wage earners since the more work time made available to an employer the more employers will tend to devalue the per hour pay rate.¹²⁰

Overall this system is troubling in a number of ways. First, it creates a dynamic in which individual economic gains are achieved through an expansion of working hours rather than through an increase in efficiency or a more egalitarian distribution of wealth.

¹¹⁹ Bureau of Labor Statics (2008). *Average hours and earnings of production and nonsupervisory workers*. Retrieved: April, 22, 2009. Website: <ftp://ftp.bls.gov/pub/suppl/empst.ceseeb2.txt>

¹²⁰ Lipsey, R., Harbury, C., (1999). *First Principles of Economics*. Oxford.

Second, this trend represents a downward spiral of sorts in which workers are motivated to work ever increasing hours to earn more, but in doing such they ultimately create a surplus in labor which effectively undervalues their work. Third, when this trend of increased work and less earning is coupled with a socially stratified society in which some individuals possess a great deal of power and resources we find that such a pattern can contribute to further stratification if those in power recognize this trend in labor and exploit it.

The trend towards a global economy appears to be another significant factor in the development of work time during the post-World War II era. America during the immediate post-war decades was in strategic position to dominate the world in terms of industrial economic power. Since most of the developed world had been ravaged by World War II, America found itself in a strategic position of possessing a developed industrial infrastructure. With this advantage America was able to secure a strategic advantage over other developed nations for some period of time.

However, as Japan and Western Europe rebuilt, they also began to develop the ability to compete with the United States in terms of manufacturing and other economic activities. This competitive pressure became increasingly apparent during the 1970's and 1980's. Many of the products produced abroad were competitive with their American counterparts, both in terms of quality and price. Thus, many American firms sought to decrease their overhead costs by shifting their operations overseas to developing countries where the cost of labor and requirements of regulation were significantly lower.

This exporting of America's manufacturing base has led to a number of adverse developments in the American labor market. Since there is the perpetual threat that an employer might export their operations to overseas locations, American workers have endured a number of pay cuts and reductions in benefits in an effort to keep employers in the United States¹²¹. Additionally, a number of major firms have shifted production to states with less support for Unionization. Also, many employers have pressured government either on the municipal, state or federal level to relax work-related and other regulations in an effort to reduce overhead costs¹²². Regardless of these concessions, much of the American labor market in manufacturing has been exported since the mid 1970's; as Tables 2.1 and 2.2 show, there has been a steady decrease in the number of industrial jobs in America while the proportion of foreign-made products that Americans consume has increase during this time. Additionally, it is noteworthy that the service sector has expanded significantly during this same period and that most of the jobs in the service industry are low wage and part-time positions, often featuring fewer fringe benefits

¹²¹ Revenga, A. L., (1992). Exporting Jobs?: The Impact of Import Competition on Employment and Wages in U.S. Manufacturing. *The Quarterly Journal of Economics*, 107(1), 255-284.

¹²²Gabe, T. M., Kraybill, D. S., (2002). The Effect of State Economic Development Incentives on Employment Growth of Establishments. *Journal of Regional Science*, 42(4), 703-730.

Manufacturing Employment, Table 2.1¹²³

Year	Services	Agriculture, Mining	Manufacturing
1970	60%	14%	26%
1980	64%	14%	22%
1990	71%	11%	18%
2000	76%	12%	12%

Table 2.2, Percent of Foreign Manufactured Goods Consumed in the Domestic Market¹²⁴

Year	%
1967	7%
1972	11%
1977	15%
1982	21%
1987	30%
1992	31%
1997	41%
2002	51%

The trend towards the globalization of the economy and the labor market can be seen as having a number of effects on work time in the United States. First, Americans must compete with their foreign competitors in terms of hours worked and wages earned. Thus, the average American manufacturer must somehow achieve the nearly impossible task of competing with their counterparts in negotiating compensation and work hours. Second, by reducing both the number and stability of jobs in the United States it gives employers a strategic advantage relative to employees in demanding more labor and less

¹²³ International Labor Organization (2007). *Employment by economic activity 1970-2007*. Retrieved: April, 22, 2009. Website: <http://laborsta.ilo.org/STP/do>

¹²⁴ Congressional Budget Office (2004). *What accounts for the Decline in Manufacturing Employment?* Retrieved: June, 9, 2007. Website: <http://www.cbo.gov/doc.cfm?index=5078&type=0>.

compensation from their employees. This is evidenced when one considers that real wages have stagnated or declined for the bottom 60% of families in the United States over the past 15 years¹²⁵.

Although both these trends are almost undeniable in their effects on the American labor market, one can present a number of arguments as to why this dynamic may be more of an rationalization for employers to acquire the benefits of cheap third world labor and unregulated markets than it is a justifiable reason to eliminate American manufacturing jobs. First, there is the issue of productivity, it has been consistently shown that highly paid workers in developed countries are far more productive than their third world counterparts. Second, there is the issue of profitability; specifically, some observers have noted that companies often export labor to increase an existing profit margin¹²⁶. Thus, exporting jobs is often not a question of profitability, but rather the relative size of profits.

Since the late 1960's a few social and ideological movements have influenced the labor market in a number of significant ways. The women's rights movement of the 1970's, along with the later resurgence of conservative economic and social values, have helped shape who is involved in the labor market, our attitudes towards work, and policy related to labor.

¹²⁵Lawrence, M., Bernstein, J., Allegreto, S., (2007). *State Of Working America 2006-2007*. Economic Policy Institute. Trends in average wages and average hours 1967-2004.

¹²⁶Lazear, E. P., (2000). Performance Pay and Productivity. *The American Economic Review*, 90(5), 1346-1361.

Feminism contributed to two relevant developments in work time. First, feminism emphasized breaking down gender roles and enabling women to work in formal, paid positions. Increasing the number of people in the workforce has increased levels of competition for work. Also, the legitimization of women being members of the work force has contributed to the development of the two-income family phenomenon. These dynamics have contributed to an increase in the number of formal hours worked through increasing the level of competition in the economy while simultaneously marginalizing informal labor.

The liberal social movements of the 1960's, including feminism, have had a tremendous impact on American society. However, their progress is not without detractors. Much of what can be described as the modern American conservative movement has developed as a response to the ascendance of liberal beliefs systems in the 1960's. Modern American conservatism includes a belief in limited government and traditional social and religious values¹²⁷. Although there is some diversity amongst conservatives in America on some social issues, their belief in capitalism and limited government is for the most part a consistent trait¹²⁸. The conservative movement solidified its power and gained a significant amount of influence with the election of Ronald Reagan in 1980.

The conservatives took a number of positions that directly or indirectly contributed to an increase in work time. Both conservative politicians and various right

¹²⁷ Goldwater, B., (1960). *The Conscience of a Conservative*. Buccaneer Books.

¹²⁸ Scruton, R., (2002). *The Meaning of Conservatism*. St. Augustine's Press.

of center organizations contended that government should have a limited role in regulating working conditions, providing social services related to unemployment and managing the economy as a whole. For instance, President Reagan gave two memorable speeches in which he took the position that unemployment insurance was merely a “prepaid vacation for free loaders” and that welfare assistance to single mothers was often abused to the point where individuals were receiving more than 30 AFDC checks and owned expensive luxury cars¹²⁹. These positions, combined with an overall preference for supply side and laissez faire economics, have typified the conservative position on labor. The result was a movement towards deregulation of both industry and labor.

The modern American conservative movement has contributed a number of master narratives to the dialogue on work and sustainability. In the conservative view of work we find considerable emphasis placed upon the contractual nature of employment rather than work as being a means of self support and a social convention. For instance, there have been a number of “right to work” movements that have sought to solidify the notion that employment is solely a contract between the employer and individual employee rather than one which focuses on collective bargaining¹³⁰. Also, the conservative movement has been quite proactive in creating a negative image of social insurance programs and organized labor and a positive image of long working hours. Finally, the conservative movement has been critical of many social movements that have

¹²⁹ Seccomb, K., (1998). *So You Think I Drive a Cadillac?: Welfare Recipients' Perspectives on the System and Its Reform*, Allyn and Bacon.

¹³⁰ Ellwood, D. T, Fine, G., (1987). The Impact of Right-to-Work Laws on Union Organizing. *The Journal of Political Economy*, 95(2), 250-273.

attempted to address the issues of equity in labor, and also contested the greater issues related to environmental protection and the promotion of sustainability. Although these views are not solely indigenous to the resurgence of conservatism in America, the conservative movement has actively promoted several perspectives on work and sustainability. A few of these perspectives include general opposition to community planning, proactive social policy, resource conservation, and economic redistribution.

Modern sustainability

Throughout most of recorded history society can be described as being primarily agrarian and pre-scientific. However, beginning in the Renaissance period the world, starting with Western Europe, began to transform the structure of society and social thought away from its agrarian roots. The development of both scientifically-based engineering and the scientific method allowed for the rapid development of both technology and knowledge. The advent of the modern era has brought a higher standard of living. This progress particularly appears after the assimilation of this paradigm into the economic realm through the industrial revolution. Within the past two centuries almost all indicators of individual welfare and prosperity have improved. Additionally, with such progress individuals have generally been afforded more control in terms of government and lifestyles. However, the progress of the modern age has come at a cost. With increasing technological sophistication humans have had an increasingly large impact on their environment¹³¹. Also high levels of consumption mandate that more resources be expended per capita to meet demands. In a world of limited resources these

¹³¹ Goudie, A., (2006). *The Human Impact on the Natural Environment: Past, Present, and Future*. Blackwell.

advances create pressure on the environmental and ultimately the human population which must deal with the effects of over population and environmental degradation.

One of the earliest observers of this potential trend was Thomas Malthus¹³²; Malthus postulated that if populations grew without conscious control the world would become so overcrowded that it could no longer support its people. Although Malthus' initial postulations about population dynamics possessed some questionable assumptions, he did establish one of the fundamental questions of modern thinking relative to sustainability. The idea that growth and consumption cannot expand indefinitely in a world of limited resources is one of the primary concepts of contemporary sustainability.

Modern society in many ways represents the end result of a long process of humans' apparent detachment from their environment. Although prior societies have possessed values that are divergent from their environments, none have achieved the level of detachment that modern consumerist societies have. This detachment can be attributed to a number of causes, including a belief in modernity, technological progress and acceptance of market capitalism. Relative to the issues of modern thought, we find that the scientific rationalism of the early enlightenment and renaissance thinkers¹³³ has been taken to an extreme level of abstraction that can be described in some senses as pathological. Specifically, progress through scientific and technological advancement which formed the basis for much of the development of modern industrialism and

¹³² Malthus, T. R., (1999). *An Essay on the Principle of Population*. Oxford University Press.

¹³³ Cottingham, J., Stoothoff, R., Kenny, A., and Murdoch, D., (1988). *The Philosophical Writings of Descartes*. Cambridge University Press.

economics has developed in a way that may not serve the needs of humanity. The notions of progress, wealth, and efficiency are often based in abstractions that have little to do with the tangible welfare of most people.

For instance, it is assumed that high levels of economic activity is indicative of prosperity; however, as proponents of the Genuine Progress Index have noted such is often far from the truth since indicators of economic progress often have little to do with actual status of people's lives. On another level, analysts emphasizing conventional economic thinking often assume that progress need only be measured in economic terms or through the development of ever-increasingly complex technology, regardless of its actual utility. Couple this view of progress with the mandate of capitalism to hold profit as a value above all else and one arrives at a system that is not very attentive to living in congruence with the natural order of things.

Although positivism, consumerism and other ideological trappings of the modern era have been dominant in many countries, some consistent criticisms of such world views have arisen. Individuals ranging from Marx to Rachel Carson have suggested that the progress modern societies have made in terms of knowledge, standard of living and material wealth have come at a steep social and environmental price. Much of what constitutes contemporary theoretical and applied sustainability finds its roots in the intellectual efforts of these people. Although many of these early theorists did not explicitly address sustainability in a manner that would be considered acceptable by contemporary standards, they did aid in creating a formal academic discipline geared

towards the explicit assessment of the human's needs relative to both society and the environment.

As discussed before, Marx and his contemporaries were critical of early industrial capitalism. Although not explicitly endeared to the notion of sustainability, Marx's commentaries on the social effects of capitalism can be seen as an initial step towards developing a theory of what people can tolerate and what society should resemble. Also, Marx's observations about the relationship between material and economic wealth and social structure represent one of the first moves towards formalizing a theoretical understanding of the relationship between people and economics. Although Adam Smith's work the *Wealth of Nations* is traditionally considered to be the ideological antithesis of Marx, much of what Smith discusses alludes to the basic need to create balance between economic and social forces. For instance, Smith makes the case the individuals or companies that seek profit to excess often fail and create tension in both the economy and society¹³⁴. What is interesting about these works is not only their attempts at formalizing theories of social behavior but also that these works were eventually utilized in attempts at restructuring society. In many senses the works of Marx in particular represent the first true attempt at social engineering.

In addition to the soci-economic analysis of Marx and Smith, other thinkers from the 18th and 19th century began to develop commentaries about humans' relationship with their environment. One of the earlier movements of this time was the Romanticist

¹³⁴ Smith, A., Raphael, D. D., (1991). *The Wealth of Nations*. Random House.

literary movement. Recreation, as it is known in the contemporary sense, became a prominent aspect of this era. Literally the term recreation means to recreate oneself through experiences in different environments. Additionally, the Romantic movement facilitated the development of many early naturalists and environmentalists such as John Muir, Walt Whitman and Henry David Thoreau. These early environmentalists began to question humanity's impact on the natural world along with questioning man's growing dependence upon the exploitation of the environment. This thinking represented a divergence from the standard western world view that the world was created for man and that he was master of his environment¹³⁵. As a consequence of these early theorists naturalism and conservationism became accepted if not mainstream ways of thinking. However, the net effect of these early efforts manifested itself primarily in the form of land conservation and the establishment of national parks. Although this definitely represented progress, most people's daily lives were not directly impacted and for the most part environmentalism was largely considered something that was removed from daily life¹³⁶.

Although the influence of the early environmentalists was somewhat limited in its direct effects on society, beginning in the late 1950's a number of individuals started taking a more proactive position on environmental issues. Rachel Carson's book *Silent Spring*

¹³⁵ Hoffman, A. J., Sandelands, L. E., (2005). Getting Right with Nature: Anthropocentrism, Ecocentrism, and Theocentrism. *Organization Environment*, 18, 141-162.

¹³⁶ Black, B., (2006). *Nature and the Environment in Twentieth-Century American Life*. Greenwood.

Bonnett, A., (2005). Global America? The Cultural Consequences of Globalization. *The British Journal of Sociology*, 56 (4), 664–665.

is commonly cited as representing the beginning of the contemporary environmental movement¹³⁷. In *Silent Spring* Carson argued that widespread use of pesticides and other industrial chemicals was killing enough wildlife that widespread extinction and harmful environmental disruption were inevitable. Although the resistance to Carson's work from chemical and other industries was substantial, many of the ideas that Carson presented gained widespread support¹³⁸.

In addition to Rachel Carson's works many academics and prominent journalists began to pose similar questions about human impacts on the environment. The period between the mid 1960's and early 1970's proved to be a time in which research and social action relating to sustainability became more formalized and more evident. Relative to academic inquiries, this period saw the development of ecology, environmental studies and environmental policy as formalized academic disciplines. Applied activities in the 1960's, such as recycling, reducing energy consumption, organic agriculture and promoting social justice, were all viewed in a positive light by many people.

The 1960's also proved to be a time in which many movements developed that sought both social and economic justice for America's disadvantaged groups. During this time the basic notion of sustainability became a more formalized concept. One of the most important early works on sustainability, the Club of Rome's collaborative work *The*

¹³⁷ Carson, R., (1962). *Silent Spring*. Houghton Mifflin.

¹³⁸ Taylor, R., (1990). *Ahead of the Curve: Shaping New Solutions to Environmental Problems*. Potomac Publishing / Environmental Defense Fund.

Limits to Growth,¹³⁹ presented the notion that man's ability to expand in population and resource consumption was limited by the earth's ability to support such expansion. This hypothesis was substantiated through the use of an early computer-based modeling program which was used to present various scenarios of the dynamic among people, natural resources, and various economic structures. Also, *The Limits to Growth* hypothesized as to the potential negative consequences of what would occur if humans exceeded the planet's carrying capacity.

This trend in both theoretical and applied sustainability continued through the 1960's to the present. Although there have been periods when the topic has received less attention, the public is increasingly concerned about sustainability-related issues.¹⁴⁰ For instance, many polls of public opinion have noted that most people are concerned about the status of the environment¹⁴¹. There are a number of reasons why environmental concerns and issues related to sustainability have become more salient in the public's eye. Regarding environmental issues, people have grown increasingly aware of man's impact on the environment, while at the same time many environmental issues relating to population natural resource consumption and environmental degradation have become

¹³⁹ Meadows, D. H., Meadows, J., Randers, H., Behrens, W., (1972). *The Limits to Growth*. New York: Universe Books.

¹⁴⁰ Public Agenda (2007). *Public perception of environmental issues*. Retrieved: June, 18, 2007. Website: http://www.publicagenda.org/issues/pcc.cfm?issue_type=environment.

¹⁴¹ Gonzalas-Benito, J., (2006). A review of the determinate factors of environmental proactivity. *Business Strategy and the Environment*, 15(2). 87-102.

worse. In particular, it is widely known that consumption patterns, especially in the United States and other developed countries, are not sustainable¹⁴²

In terms of issues related to sustainability, there is an increasing public concern over the effects of modern social and economic systems. Specifically, at issue are matters dealing with social inequality, both within and among nations, civic disengagement and lack of personal fulfillment. These issues, along with some others, have led many to question whether or not the tenets of modern societies are hindering human progress more than they are aiding it.¹⁴³ Although all of these issues are distinct in nature, one of the defining aspects of contemporary theories of sustainability is that all of these issues are ultimately interrelated and self-complicating. Thus, most contemporary theories of sustainability have concluded that it makes little sense to address one of the issues without attempting to contextualize the problem into a greater framework that considers the environmental, social and economic aspects of the situation. In a strange sense modern theories of sustainability represent a form of thinking that has come full circle relative to the tenets of the evolutionary forces that form humans, both as a society and as a species. We now find ourselves in a position where we must reengage ourselves with our environment, both in terms of physical existence and our comprehension of our situation.

American Exceptionalism

¹⁴² Hart, S., (1997). Beyond greening: Strategies for a sustainable world. *Harvard Business Review*, January-February, 66-76.

¹⁴³ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books. Stiles, P., (2005). *Is the American Dream Killing You?, How "The Market" Rules Our Lives*. Collins.

American society differs significantly from other industrialized nations, both in terms of social structures and in terms of physical structure. There have been a number of explanations offered as to the causes of American exceptionalism. Most of these explanations rely on either America's youth as a society or in our ideological composition.¹⁴⁴ These unique aspects of American society may significantly influence Americans' time use habits and their perceptions of such things as work, time use and sustainability.

One can argue the structural roots of American exceptionalism can mostly be attributed to America's unique position as a young country, with abundant natural resources, a relatively sparse population, and a technologically advanced culture which capitalized upon its resources. Although the United States was initially inhabited by Native Americans, their level of technological development was relatively limited. The most advanced Native American societies such as the Aztec or the Maya possessed neither iron nor used wheels in transportation-related activities¹⁴⁵. Thus, the environmental impact of this group, especially in the United States, was relatively limited when compared with European settlers. For purposes of the present argument it is best to consider the development of American society from the beginning of European settlement.

¹⁴⁴ Ross, D., (1992). *The Origins of American Social Science Series: Ideas in Context*. The Johns Hopkins University.

Voss, K., (1993). *The Making of American Exceptionalism: The Knights of Labor and Class Formation in the Nineteenth Century*. Cornell University Press.

¹⁴⁵ Diamond, J., (2004). *Collapse*. Viking Adult.

It is reasonable to argue that the arrival of European settlers in North America created a situation of a technologically advanced society being given the opportunity to expand rapidly and take advantage of abundant natural resources. This expansion was supplemented by further technological advancement such as the mechanization of production and the development of specific technologies such as the internal combustion engine and the widespread use of fossil fuels. Oddly enough, the conditions that have precipitated the rise of American society have inadvertently led to an erosion of some of the core values that made it initially prosperous¹⁴⁶. As discussed before, American society has evolved into a relatively inefficient system that pays little regard to the ability of its environment to support itself and its long term viability.

Culture represents that second major factor that defines America's unique position among developed nations. Although much of America's background is historically of European origin, America's ideological values have developed in a similarly divergent fashion as its structural and technological systems. The United States represents a society that exhibits strong individualistic values and possesses only weak tendencies towards collectivism¹⁴⁷. The origins of these values are most likely rooted both in elements of the European societies from which American culture originated and through the experiences

¹⁴⁶ Both Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books. and Stiles, P., (2005). *Is the American Dream Killing You?, How "The Market" Rules Our Lives*. Collins. present a relatively in depth discussion of how the consumer materialistic culture has evolved from earlier cultural dispositions such as a belief in capitalism, pursuit of prosperity or The Protestant Work Ethic.

¹⁴⁷ Triandis, H. C., (1995). *Individualism and collectivism*. Westview Press.

of Americans as the country developed¹⁴⁸. European culture, especially when compared to its Asian counterparts, has a set of values which promote individual autonomy and self interest. However, when compared to contemporary American society those values in Europe are relatively weak.¹⁴⁹

Traditionally, the mythology of the rugged American individual has been embodied in such characterizations as the bold frontier settler seeking out a better existence through harnessing the untapped resources of the virgin land, or in the character of the ambitious captains of industry whose entrepreneurial spirit enriches him self while promoting the rest of us.¹⁵⁰ However, in recent decades the concepts that define the American mentality have taken what is arguably a pathological turn in their development. What once was an ideology that favored progress through individual means has now developed in to a way of thinking that places individual desires of the economic calculus of the market virtually above all else¹⁵¹. The development is embodied in a number of specific cultural icons such as the Objectivism of Ayn Rand¹⁵², mantras of the “Me” generation and the conscienceless declaration of the 1980’s that “greed is good”¹⁵³. Also, the capitalist ideology has evolved from merely an economic world view to a

¹⁴⁸ One good example of the nations early political development is Tochville’s discussion of political activity in early America.

¹⁴⁹ Triandis, H. C. (1995). *Individualism and collectivism*. Westview Press.

¹⁵⁰ The stories of Horatio Alger are a good example of this. Scharnhorst, G., Bales, J., (1981). *Horatio Alger, Jr.: An Annotated Bibliography of Comment and Criticism*. Scarecrow Press. See also, Mills, C. W., (1951). *White Collar*. Oxford University Press.

¹⁵¹ Cox, H., (March, 1999). The Market as God. *The Atlantic*.

¹⁵² Any of Rand’s Works allude to the general nature of her ideology. A few examples are *Atlas Shrugged*, (1957), and *The Fountainhead*, (1943).

¹⁵³ Stiles, P., (2005). *Is the American Dream Killing You?, How “The Market” Rules Our Lives*. Collins. Also a good example of this in contemporary culture is the 1987 film *Wall Street*.

comprehensive social ideology. The “marketism” and individualism have developed in a manner which marginalizes society and things of little obvious economic value. When one compares this ideological orientation with other developed countries, or even America’s historical position on certain issues, its influence becomes apparent in both the development of policy in the United States and the overall performance of society at achieving certain ends.

Aside from the influences of culture and the historical conditions that have prevailed in American society, there is also the issue of cultural evolution in the United States. Since America is a relatively young country that has not been exposed to the same turmoil that other industrialized countries have, it is possible that American society represents a culture that has not been fully tested by the pressures of deprivation, overpopulation, wholly destructive wars¹⁵⁴ and long-standing oppression. Thus, many of the characteristics that define American society can be viewed as being cultural organisms that have yet to be subject to the selective evolutionary forces of time. Things such as American’s consumption habits, our sprawling infrastructure and our lack of will to serve the collective good are possible manifestations of these phenomena. Ultimately, the lack of adversity in the American experience can be seen as contributing many aspects of Americans’ unique cultural experience.

¹⁵⁴ One, the United States have never experienced a protracted nationwide famine or other massive natural disaster. Two, with the exception of certain groups such as blacks under slavery, the United States has never been occupied or actively oppressed by an outside entity. Three, the Japanese and Continental European experiences during WWII would be an example of near total destruction suffered during war. Other than the South during the Civil War, the United States has yet to experience a truly destructive conflict.

Other Industrialized Nations

Other industrialized countries differ significantly from the United States in their social and economic structures, along with their time use patterns. The structure of most industrialized countries is typified as being more collective in their mentality, possessing a strong social identity, being more centrally planned and possessing more cohesive and active labor forces. However, there is some variation amongst countries in this regard. For instance, the United Kingdom tends to resemble the United States in its cultural and economic heritage, while Japan and Northern European countries possess different lineages¹⁵⁵. Additionally, some countries resemble the United States in terms of their recent settlement, population density and resource abundance, such as Canada, Australia and New Zealand. These structural differences have a number of influences on the development of policy related to work and time use in the countries in question.

The issue of culture is a rather fundamental one relative to the issues at hand. Culture ultimately dictates much of an individual's or group's behavior regarding both social interactions and economic transactions. Thus, an understanding of the defining aspects of a society's culture can help us in our understanding about how societies deal with issues of time use and sustainability.

It is possible to argue that two of the key defining features of developed countries are the length and nature of their development. Considering that Western Europe and

¹⁵⁵ One method of substantiating this point is to consider Epsing-Anderson, J. (2002). *The Three Worlds of Welfare Capitalism*. Princeton University Press. Also, as will be shown later, there is extensive empirical evidence to suggest that countries tend to differ in any number of ways along cultural and ideological lines.

Japan have been inhabited as relatively cohesive cultures for at least two thousand years, it is useful to evaluate these societies relative to their tribal and kinship group-based origins. As much research on primitive societies has shown, tribal and kinship-based groups tend to be significantly quite cohesive and homogenous both in their ideological values and in their genetic lineages¹⁵⁶. The existence of such traits is generally predicated by a community that is not particularly mobile and is also constrained and challenged by its environment¹⁵⁷. Thus, the early inhabitants of what now are developed countries in Europe and Japan were forced to cooperate and develop strong cultural identities that help ensure their survival¹⁵⁸.

In addition to internal threats, these societies were also required to defend themselves against threats from other groups¹⁵⁹. Although the technology and social structure of these early groups has long since evolved into vastly different institutions, many of the basic aspects of these early societies persist to the present day. One method of justifying this argument is to consider the role collective organizations such as monarchs, state churches and other society-wide institutions play in such societies. For instance Japan, Great Britain and many Scandinavian countries still maintain heads of state and state churches. Also, it is possible to note how these several societies have developed governmental systems to reflect their core social values. Many commentators

¹⁵⁶ Queller, D. C., (1985). Kinship, reciprocity and synergism in the evolution of social behaviour. *Nature*, 318, 366–367.

¹⁵⁷ Hsu, F., (1971). *Kinship and Culture*. Aldine.

¹⁵⁸ Donald, M., (1991). *Origins of the Modern Mind: Three Stages in the Evolution of Culture and Cognition*. Harvard University Press.

¹⁵⁹ Hammond, R., Axlerod, R., (2006). The evolution of ethnocentrism. *Journal of Conflict Resolution*, 50(6) 1-11.

have noted the role of the strong collective identity of Scandinavians in the development of their social welfare states¹⁶⁰.

The development of physical and economic infrastructure of Western Europe and Japan mimics their cultural evolution in that each society developed over a long period of time under a number of varying conditions. Both Japanese and European societies have been inhabited for thousands of years. In the instance of European society, most of the European continent has been settled since the early Paleolithic period some 60,000 years ago;¹⁶¹ similarly, Japan has been settled since the upper Paleolithic period roughly 30,000 years ago. Although there have been considerable migration and cultural changes during the period of settlement, these areas have been consistently inhabited for this duration. In comparison, the United States was settled 12,000 years ago and has only been inhabited by a technologically advanced society for at most 400 years¹⁶².

What this difference in the duration of inhabitation has meant for these societies is that both Europe and Japan developed and reached a relatively high population density as agrarian societies. This pattern of development made it such that these nations had already exhausted or reached the carrying capacity of many of their natural resources long before the advent of modern technology. The existence of a relatively large

¹⁶⁰Kangas, O., Ritakallio, V. M., (2000). Social Policy or Structure? Income Transfers, Socio-demographic Factors and Poverty in the Nordic Countries and in France. *Luxembourg Income Study WP-series*, no. 190.

¹⁶¹ Brantingham, P. J., Kuhn, S. L., Kerry, K. W., Gamble, C., (1986). *The palaeolithic settlement of Europe*. Cambridge University Press.

¹⁶² Haynes, G., (2002). *The Early Settlement of North America, The Clovis Era*. Cambridge University Press.

population and lack of certain natural resources in these countries effectively mandated that they develop methods of controlling resource consumption and organizing themselves in a highly efficient way. For instance, Japan as early as the 15th century was practicing strict timber and land management due to a number of periods of significant timber shortages¹⁶³. Also, similar practices were adopted in Europe both in the form of crop rotation and adopting building practices that gave preference to more durable stone buildings over wood.¹⁶⁴

Aside from resource-related issues, the lengthy nature of the development in these societies also contributed to the development of a compact and efficient infrastructure. For example, both Japan and Europe one finds that they possess a significantly higher population density than does the U.S.¹⁶⁵. Arguably, the reason for this basic structure is that many features of these societies developed prior to the advent of modern transportation systems. Thus, there was a premium placed upon the ability to conduct one's affairs within walking distance of one's residence.

Also, Japan and European countries possess infrastructures in which food and other vital resource production are more evenly distributed throughout the country when

¹⁶³ Diamond, J., (2004). *Collapse*. Viking Adult.

¹⁶⁴ Farrell, E. P., Führer, E., Ryan, D., Andersson, F., Hüttl, R., Piussi, P., (2002). European forest ecosystems: building the future on the legacy of the past. *Forest Ecology and Management*, 132(1), 5-20.

¹⁶⁵ Assertion based upon population density calculated from ILO population data used in analysis.

compared to the United States¹⁶⁶. Although all industrialized countries rely to some extent on extra regional food imports, the amount and the scope of imports varies widely¹⁶⁷. For instance, small farms abound in Japan, even close to major urban areas such as Tokyo¹⁶⁸. This habit of diversified land use practices may have a number of consequences. First, it allows for food to be produced locally and hence not need to be transported long distances. Second, such practices contribute to the diversification of the local economy which adds to the resiliency of the economy. Third, by producing at least some food locally and maintaining both working agricultural land and the apparatus required to produce food, it provides an additional layer of security for the society in the event that food from other sources grows scarce.

This situation when compared with the United States provides evidence that American society is in a rather precarious position. Specifically, America, especially in the last half of the 20th century, has developed an infrastructure that relies upon agricultural regions rather than maintaining agriculture scattered throughout the United States¹⁶⁹. The net effect of this trend has been to create entire regions such as the Northeast that do not produce anywhere near the food required to support them. Also, this method of agriculture is rather resource intensive in that the average food product to

¹⁶⁶ Smit, J., Nasr, J., (1992). Urban agriculture for sustainable cities: Using wastes and idle land and water bodies as resources. *Environment and Urbanization*, 42(2), 141-160.

¹⁶⁷ United Nations, Food and Agriculture Organization (2007). *Import statistics for 2004*. Retrieved: June, 16, 2008. Website: <http://www.fao.org/ES/ess/toptrade/trade.asp>

¹⁶⁸ Ministry of Agriculture (2006). *Forestry and Fisheries of Japan*. Retrieved: July, 23, 2007. Website: <http://www.maff.go.jp/e/index.html>.

¹⁶⁹ Cochrane, W., (1993). *The Development of American Agriculture*. University of Minnesota Press.

reach market in the United States must first travel an average of 1,700 miles¹⁷⁰. This trend towards regionalism has created a system that does not value agricultural land in certain areas. For instance, it is predicted that half of all Florida citrus farms will be converted for residential and commercial development in the next 20 years¹⁷¹. Also, most of the agricultural land in New England has either been developed or lay fallow so long that is overgrown and no longer viable as working farm land¹⁷².

Another defining feature of developed nations outside of the United States is the relationship between business interests and labor. Although there is a great deal of diversity amongst industrialized nations, these countries consistently display traits that indicate either a more developed labor movement or the existence of an amicable relationship between business and labor. In the instance of Western Europe, we find that a very strong labor movement has developed over the course of a number of centuries. Unlike the United States which is still relatively unpopulated¹⁷³, Western Europe reached a high population density prior to industrialization. Not only did this high population density often result in widespread shortages, famine and mass migrations, but it also made available large numbers of workers for various industrial and agricultural

¹⁷⁰ Heller, M. C., Keoleian, G. A., (2000). *Life Cycle-Based Sustainability Indicators for Assessment of the U.S. Food System*. Ann Arbor, MI: Center for Sustainable Systems, University of Michigan.

¹⁷¹ Nightly Business Report (February, 12, 2007). *Real Estate Is Leaving The Citrus Industry Sour*. Retrieved:, February, 12, 2007. Website: <http://www.pbs.org/nbr/site/onair/transcripts/070212d/>

¹⁷² New Hampshire Farm Bureau (2004). *New Hampshire Senate Bill 519, An act establishing a committee to the study of a farm viability program, final report*. Retrieved: June, 17, 2007. Website: <http://www.nhfarmbureau.org/pdfs/FarmViabilityRpt.pdf>

¹⁷³ As the data from the analysis demonstrate The United States along with other recently settled countries has a relative low population density.

industries. The net effect of this abundance of potential labor was to create a system in which human welfare and the economic viability of labor were marginalized.

However, the dynamic between business and labor also has created conditions that make collective action not a viable option. As noted by Lowi¹⁷⁴ in his book on the development of socialism in both the United States and in Europe, one of the main causes for the development of a labor movement and left leaning politics in Europe was a highly dense if not over-populated society in which people lived in close proximity to one another and were often confronted with many dilemmas associated with resource shortages and political oppression. Although some of these factors were evident in the United States during its development, these conditions never existed in the extreme or proportion required for the America to develop a labor movement of the same economic and political influence that Western Europe¹⁷⁵. The presence of a strong labor movement in Western Europe, and to a lesser extent in Japan, has not only influenced the relationship between labor and business interests but it has also served to alter the policies and culture of the societies that have experienced these conditions.

Relative to policy, both Western Europe and Japan have significantly more developed and comprehensive social welfare policies when compared with the United

¹⁷⁴ Lowi, T. J., (1984). Why Is There No Socialism in the United States? A Federal Analysis. *International Political Science Review / Revue internationale de science politique*, 5(4), 369-380.

¹⁷⁵ Maddison, A., (2006). *Economic Growth in the west: Comparative experience in Europe and North America*. Taylor Francis.

States¹⁷⁶. A number of commentators have attributed the development of these welfare policies to both the desire of labor to improve the well being of the average worker and the desire of capital and the ruling elite to sequester the rebellious ambitions of workers who are discontented with their lives.¹⁷⁷ Regardless of the impetus for the development of such a welfare system, the end result has been to create societies in which the standard of living for the average worker is relatively assured.

The system of universal access to social services and medical care stands in contrast to the practices in the United States. One of the perceivable effects of broader social welfare systems where certain goods such as education and health care are guaranteed by the government is that it makes it difficult for employers to manipulate their employees by withholding benefits or forcing workers to compete with one another to maintain their benefits.

Although there is an inevitable competition for the best jobs in any market economy, the American labor market has developed into one in which the standards of adequacy have become so low that many outside observers have described such behaviors as “desperate”¹⁷⁸. In recent years workers in America have faced a job market

¹⁷⁶ Epsing-Andreson, G., (1990). *The Three Worlds of Welfare Capitalism*. Princeton University Press.

¹⁷⁷ Flora, P., Heidenheimer, Título, A. J., (1982). *Development of Welfare States in Europe and America*. Transaction Books.

¹⁷⁸ Glickman., L. B., (1997). *A Living Wage: American Workers and the Making of Consumer Society*. Cornell University Press. Also for a more systematic discussion of the economic conditions of American worker see: Lawrence, M., Bernstein, J., Allegreto, S., (2007). *State Of Working America 2006-2007*. Economic Policy Institute.

in which the number employers who provide pensions has been significantly reduced¹⁷⁹. Also, the number of employers offering some form of health insurance has decreased¹⁸⁰. A number of observers have noted that this situation has led many workers to accept decreased levels of compensation along with other workplace burdens so that they might maintain certain benefits. This trend is reflective of both the deficiencies of the American labor market, and one of the fundamental differences between the United States and other developed nations.

Overall, we can generally conclude that labor has been able to organize and voice its opinion more effectively in Western Europe and Japan than in the U.S. As the data relating to time use and time use-related policy clearly show, developed countries outside of the U.S have more equitable time use patterns.¹⁸¹

Finally, it is noteworthy to examine the overall employment environment in Western Europe and Japan. In either instance these regions exhibit an economy that is more egalitarian-both in terms of economic commodities and in terms of time use¹⁸². In Western Europe and Japan the length of tenure of the average employee is significantly

¹⁷⁹ Weller, C., Wolff, E., (2005). *Retirement Income: The Crucial Role of Social Security*. Economic Policy Institute.

¹⁸⁰ Kaiser Family Foundation (2006). *Employer Health Benefits Summary of Findings*. Retrieved: August, 12, 2007. Website: <http://www.kff.org/insurance/7527/upload/7528.pdf>

¹⁸¹ Refer to analysis for a more extensive discussion of data.

¹⁸² Mishel, L., Bernstein, J., Schmitt, J., (2001). *The State of Working America*, Cornell University Press.

longer than in the U.S.¹⁸³ Also, there are significantly fewer part-time and temporary employees. This phenomenon may have a number of consequences, both in terms of economic and social dynamics. In a stable work force both employees and employers have invested significantly in job-related training, and workers gain familiarity and technical expertise by working at a job for an extensive period of time. Also, an economy that does not have high job turnover is arguably more efficient since the costs of unemployment benefits, worker transition and retraining are not as great. In addition to the economic aspects of long worker tenure, there are also a number of social effects such as more stable communities and family units. If employment is more secure, people are less likely to compromise their social and physical well being to maintain a good job. Such appears to be the case both in Japan and Western Europe. Although the reputation of Japanese worker is that they work themselves to death, the reality is that in both Japan and Western Europe workers work fewer hours, have more vacation time, and overall have more job security than in the U.S.¹⁸⁴ In a highly competitive and insecure job market many workers will be willing to work longer hours for less pay to retain their jobs even if extremely adverse social effects result.

Finally, it is worthwhile to comment on the role that cultural identity plays in the relationship between labor and business in both Europe and Japan. Although there is the same basic tension between these factions that is observed in the United States, many

¹⁸³ Bertola, G., Boeri, T., Cazes, S., (2007). Employment Protection In Industrialized Countries, The case for New Indicators. In: David, Kucera ed. *Qualitative Indicators of Labor Standards*. Springer.

¹⁸⁴ ILO (2007). LABORSTA, *Annual and weekly hours worked*. Retrieved: June, 19, 2007. Website: <http://laborsta.ilo.org/STP/do>.

observers¹⁸⁵ have noted that the shared culture of both workers and management has aided in the development of a fair and equitable labor system in Europe and Japan. Two prominent examples of this are levels of executive compensation in both Germany and Japan and the level of worker loyalty of Japanese workers to the companies that employ them. Regarding executive compensation, both Japanese and German CEOs on average make about 20 times what the typical employee earns. Although this represents a significant difference, it appears relatively egalitarian compared to the average American CEO who makes 300 times what his average employee earns¹⁸⁶. Worker loyalty in Japan also supports the cultural identity thesis. For most of modern Japan's history it is commonly understood in Japanese culture that if a worker is competent and loyal to his or her employer the employee can reasonably expect a lifetime of employment. In both these instances we can attribute this behavior mostly to the strongly held cultural identity that these groups maintain. It must be noted of course that the Japanese society is not immune from the forces of globalization and economic unrest. In recent years, many Japanese workers have experienced the same job insecurity and expanded working hours that workers in the United States have grown accustomed to.¹⁸⁷

Public policy relating to time use in both Japan and Western Europe differs significantly from the United States, both relative to policies directly regulating time use (especially work time) and relative to other policies intended to influence the overall

¹⁸⁵ Edström, B., (2000). *The Japanese and Europe: Images and Perceptions*. Routledge.

¹⁸⁶ Abowd, J. M., Bognanno, M. L., (1995). *International Differences in Executive and Managerial Compensation, Differences and Changes in Wage Structures*. University of Chicago Press.

¹⁸⁷ Gottfried, H., (2008). Pathways to economic security: Gender and non-standard employment in contemporary Japan. *Social Indicators Research*, 88(1), 179-186.

structure of the economy or society. With these considerations in mind, it is useful to explore both specific policies and the overall policy climate from the countries studied.

The experience amongst European countries can be generally described as reaching a high population density, and state of industrialization, during the late 19th century. Also, in Western Europe the social pressures created by the underclass and workers of those societies motivated the governments to develop comprehensive welfare states as a method of sequestering these group's desires to co-opt the existing ruling class and form a communist or socialist state. Policy in these European countries was also influenced by the destructive tendencies of two world wars and significant social turmoil during the 20th century. In recent years the European experience has been influenced by an aging population, reliance on immigrant labor, and economic competition from third world countries.

Anglo Saxon Nations

Although the Anglo Saxon countries can be described as being parts of other subsets of industrialized countries such as Europe or recently settled lands, they collectively possess a common cultural heritage that makes their experiences somewhat distinct. The Anglo Saxon countries, including Great Britain, Ireland, Canada, Australia and New Zealand, possess a relatively common cultural heritage and to some extent a common form of government. Although quite similar in many respects these countries do possess some notable differences.

Great Britain represents the arguably the most conservative of European countries, both with respect to its policy and its historical development¹⁸⁸. Of the major reasons given for the UK's somewhat exceptional position, the two primary ones are its geographically isolated nature as an island and the fact that British society remained relatively stable in past centuries and has not undergone any significant social upheavals.¹⁸⁹ These factors, along with the Great Britain's historical status as an economic and political empire, have helped influence the UK's policy development by producing a climate that is less conducive to the political extremism found in other European nations.

Although the extent of the UK's welfare state is significantly more limited than of that other western European countries, it is far more comprehensive than anything found in the United States. Specifically, Great Britain possesses a nationalized health care system, along with highly subsidized higher education systems and other social services. Although these policies continue to enjoy widespread support, they have been challenged in recent years on both political and economic grounds. Most notable in this regard have been the reforms put forth by the Labor Government under the leadership of Tony Blair and his Conservative predecessors, most notably Margaret Thatcher. The activism of British labor, especially in the past decade, can be seen as representing a neo-liberal movement that questions whether government involvement is more capable of delivering services than the market. The UK is the only European country that allows employees to

¹⁸⁸ Rootes, C. A., (1992). The new politics and the new social movements. Accounting for British exceptionalism. *European Journal of Political Research*, 22(2), 171–191.

¹⁸⁹ Christopher, D., (1999). *British Culture: An Introduction*. Routledge.

opt out of the 48 hours work week mandated by the European Union¹⁹⁰. Also, vacation time in the UK is relatively limited, only 20 days, as compared with 30 days in most other European countries¹⁹¹.

Ireland in many respects is in the same class as Great Britain, since they share a relatively common history and are both English-speaking European island states. However, Ireland differs from Great Britain in that it historically has been Catholic, poor and subjected to British control. In many senses Ireland has historically represented Great Britain's most proximate colony. Until its independence in 1922 Ireland was consistently subjected to British authority, both in economic and political matters. As a consequence of this situation Ireland has generally been less developed economically than Great Britain. Contemporary Ireland's comparatively low cost of living, combined with government policies geared towards attracting outside investment, have resulted in substantial economic growth in recent decades¹⁹². Relative to time use we find that on the whole the Irish work more hours per year than do workers in most other European countries¹⁹³. To some extent this can be seen as the consequence Ireland's relatively recent economic development, combined with a policy environment that is conducive to work-intensive situations.

¹⁹⁰Mutari, E., Figart, D., (2001). Europe at a Crossroads: Harmonization, Liberalization, and the Gender of Work Time, Social Politics: International Studies. *Gender, State and Society*, 8(1), 36-64.

¹⁹¹ Altonji, J. G., Oldham, J., (2003). Vacation Laws and Annual Work Hours, *Economic Perspectives*, 27(3), 19-29.

¹⁹² Kirby, P., Gibbons, L., Cronin, M., (2002). *Reinventing Ireland: Culture, Society, and the Global Economy*. Pluto Press.

¹⁹³ ILO (2007). *Annual and weekly hours worked*. Retrieved: June, 19, 2007. Website: <http://laborsta.ilo.org/STP/do>.

The governments of the commonwealth countries, Canada, Australia and New Zealand, share the cultural and governmental heritage of the Great Britain. However, they also occupy a position similar to the United States in that they are recently settled and typically have a lower population density than other more established nations. Thus, many of the trends observed in these nations are probably the consequence of a combination of these factors. As data relating to time use demonstrates,¹⁹⁴ time spent working is similar to that observed in Great Britain. Additionally, one can hypothesize that other time-use related patterns such as commuting are likely to resemble the United States due to their similarity in terms of infrastructure and population density. However, these countries, with the possible exception of New Zealand¹⁹⁵, are divergent from the United States in terms of many of their policies and social mentality. Given these characteristics, these nations can act as useful subjects for ascertaining the impact of American policy and culture.

Continental Europe

The experience of continental Europe differs significantly from Great Britain and the Scandinavian countries in a number of ways. Both France and Germany are major industrialized countries that have undergone much social and political turmoil in the past century. Also, Spain, Portugal and Italy maintain a culture and system of government

¹⁹⁴ ILO (2007). *LABORSTA, Annual and weekly hours worked*. Retrieved: June, 19, 2007. Website: <http://laborsta.ilo.org/STP/do>.

¹⁹⁵ Although New Zealand has traditionally maintained a system of policy similar to other commonwealth states in recent decades it has undergone a number of Neo-liberal reforms. See: Wedles, J., (1999). *Neoliberal Reform, Cultures of Insecurity*. In: Wedles, J., *States Communities and the Production of Danger*. Univ. of Minnesota Press.

which differs significantly from that of the Anglo Saxon countries. France and Germany, much like most of continental Europe, experienced significant disruptions in demographic composition and destruction of physical and economic infrastructure due to their involvement in both world wars.

In addition to these countries' historical experiences, the "Continental"¹⁹⁶ culture has probably affected the development of policy in these countries. Unlike the time intensive and strict work ethic found in the Anglo Saxon countries, many continental states have a more relaxed view of work and leisure activities. The continental mentality also tends to place more emphasis on values outside of capitalism and the market mentality. Specifically, the level of collectivism exhibited in any of the continental countries tends to be greater than that of the UK or the United States¹⁹⁷. The result of these factors on policy in these countries has been to create a focus on maintaining a balance between the needs of society as a whole, workers, and the needs of employers and the economy. Relative to specific policy, France has maintained a 35-hour work week since the 1990's, while much of German industry has maintained a similar work week through labor union activism.

In southern Europe there is a strong tradition geared towards creating a balance between work and other activities. One prominent example of this is the tradition of taking a daily siesta in Spain. In addition to providing workers with more leisure time,

¹⁹⁶ Kumar, K., (2003). Britain, England and Europe. *European Journal of Social Theory*, 6(1), 5-23.

¹⁹⁷ Triandis, H. C., (1995). *Individualism and Collectivism*. West View Press.

the 35-hour work week was also intended as a method of distributing employment more evenly throughout the economy¹⁹⁸. Although these activities fit well with the cultural and economic logic that forms the basis of Continental welfare states, it is questionable whether or not such time use policies have had their intended effect. Most of Continental Europe has experienced consistently high unemployment rates since the adoption of the 35-hour work week¹⁹⁹. However, considering the number of intervening variables such as global competition, immigration and the reunification of Germany it is difficult to assess the effect of the 35-hour work week on unemployment.

There have been a number of recent political and economic criticisms of the 35-hour work week. With the success of conservatives in both France and Germany in the 2006 and 2007 parliamentary elections, there has developed significant resistance to shorter working hours. For instance, the right of center French Prime minister Nicolas Sarkozy has avowed to end the 35-hour work week on the grounds that it deprives low income people of needed income²⁰⁰. Also, many German firms have succeeded in renegotiating union contracts to extend the length of the work week to raise productivity relative to foreign competition.²⁰¹ Although these measures have some support in certain

¹⁹⁸ Fagnani, J., (2004). Work and the Family Life Balance the Impact of the 35-Hour Laws in France. *Work, Employment*, 18(3), 511-572.

¹⁹⁹ Crépon, B., Kramarz, F., (2000). *Employed 40 Hours or Not Employed 39: Lessons from the 1982 Mandatory Reduction of the Workweek. CEPR Discussion Paper no. 2358*. London, Centre for Economic Research. Retrieved: March, 12, 2007. Website: Policy Research. <http://www.cepr.org/pubs/dps/DP2358.asp>.

²⁰⁰ Sauger, N., (2007). The French Legislative and Presidential Elections of 2007. *West European Politics*, 30(5), 1166–1175.

²⁰¹ Werner Sinn, H., (2006). The Pathological Export Boom and the Bazaar Effect: How to Solve the German Puzzle. *The World Economy*, 29(9), 1157–1175.

groups in German and French society, there is also widespread resistance to such activities. Also, it remains to be seen whether such efforts will in fact have any tangible effect on the economy and the well being of both workers and business interests in these countries.

Aside from policy relating to the length of the work week in France and Germany, they also have policies governing vacation time and the overall structure of their welfare states. Workers in Germany are guaranteed 37 paid days of vacation time a year while French law provides for 35 paid days.²⁰² Spain, Portugal and Italy have 20, 20, and 32 days, respectively. Any of these instances represent a significant departure from the mentality found in either Great Britain or the United States. The most obvious difference is found in the length of vacations in France, Germany and Italy compared with the 20 days guaranteed by British law. Also, the cultural mentality associated with these policies is of particular interest. In French, German and other continental European societies the yearly vacation is considered a cultural institution that reflects both the civility and values of their societies. This mentality also extends to the common perception of these countries' welfare and other social policies since such institutions are not only perceived as a method of delivering certain services but also a way to maintain certain beliefs of what a country considers to be important²⁰³.

Scandinavian Countries

²⁰² Green, F., Potepan, M., (1988). Vacation Time and Unionism in the U.S. and Europe. *Industrial Relations a Journal of Economy and Society*, 27(2), 180-194.

²⁰³ Gilbert, N., Terrell, P., (2002). *Dimensions of Social Welfare Policy*. Allyn Bacon.

The experiences of the Scandinavian countries along with The Netherlands are similar in many ways to these of major industrialized countries such as France or Germany. However, the experiences and policies of these countries differs slightly in that they tend to be smaller in population and slightly more peripheral in terms of economic and industrial activity. Also, these countries, especially the northern Scandinavian nations tend to exhibit significantly higher levels of cultural homogeneity and collectivism. Policy in these countries reflects these features, both through specific polices and through the overall nature of each country's welfare state. In addition, the destructive forces of two world wars affected their policies as well. The welfare states in these countries are the most extensive to be found in any developed nation. For instance, government expenditures in Sweden have often comprised at least 55% of Gross Domestic Product²⁰⁴. In general, we can view the social policy in these countries as being comprehensive in attempting to address both social and economic issues. In the instance of time use policy, these countries, similar to other continental European countries, provide annual vacation time which is considered a cultural necessity along with establishing statutes that limit working time. Each of these countries attempts to maintain a system of full employment.

Relative to time use, measures have been proposed in these countries to create more flexible and equitable time use policies. Paid maternity leave is standard in all of

²⁰⁴ Swedish Ministry of Finance (2007). *Government expenditures as percentage of GDP for 2007: 51.2%*. Retrieved: August, 12, 2007. Website: <http://www.sweden.gov.se/sb/d/9516/a/87553>. Also see Central European Bank, Time series data on Swedish government expenditures, Accessed, May 28, 2009, Website: http://sdw.ecb.int/quickview.do?SERIES_KEY=139.AME.A.SWE.1.0.319.0.UUTGE

the Scandinavian countries, along with the Netherlands²⁰⁵. In addition, some have proposed extended periods of leave or “sabbaticals” as a method of evenly distributing employment in these countries²⁰⁶. Although these welfare states of the Scandinavian countries and Denmark have experienced substantial challenges in recent years, they are still considered a model for the operation of a modern social system which provides for both individual economic liberties and social welfare.

Japan

Japan represents the last industrialized society to be considered here. Compared to other industrialized nations, Japan occupies a rather unique position in that it is the only non-western developed nation. Also, Japanese culture differs significantly from its western counterparts in that Japanese society is more collective and homogenous than even Scandinavian societies. Regardless of the dissimilarities, Japanese society shares many common features with its western European counterparts. Among the more prominent common features are Japan’s highly developed infrastructure, strong cultural identity and extensive welfare state. Also, Japan has shared experiences relative to its near total destruction in World War II. In addition to this, Japan is also a relatively recently developed nation. Although Japanese society has existed in an advanced form for a number of centuries, it has only been during the 20th century that Japan has developed modern industrial infrastructure that is comparable with other western nations.

²⁰⁵ International Labor Organization (2001). *Maternity Protection ILO Convention No. 183*, June 2001, International Confederation of Free Trade Unions, the Public Services International and Education International.

²⁰⁶ Koning, J., Layard, R. S., Nickell, Westergaard-Nielsen, N. (2004). *Policies for Full Employment*. J. de, Ministry of Labor, UK. Retrieved: July, 5 2007. Website: http://www.dwp.gov.uk/publications/dwp/2004/pol_full_emp/layard_report.pdf

This recent development, combined with the various cultural aspects of Japanese society, promoted the development of significantly different time use patterns and policies there. The Japanese experience until recently more closely resembled the European and American experience during the early years of industrialization, with six-day work weeks and work days that often exceeded 12 hours²⁰⁷.

Although the Japanese work ethic combined with the efficiency and precision of Japanese business was renowned in business circles during the 1980's²⁰⁸, the negative consequences of such work behaviors were also becoming apparent to the Japanese. *Karoshi*, which is a Japanese term which means "death through over work," became a topic of tremendous interest in Japanese society during the late 1980's and the 1990's. Specifically, a widespread knowledge of the negative aspects of long working hours became apparent and pressure from a number of groups resulted in the establishment of a legal minimum of 18 days of vacation a year²⁰⁹. In addition, a number of other government and workplace policies were established to deal with the negative effects of overwork. Although the Japanese continue to maintain a system in which working hours

²⁰⁷ Loehr, W., Loehr, J., Schwartz, T., (2003). *The First Principles of Economics: The power of Full Engagement*. The Free Press.

²⁰⁸ Lillrank, P., (1995). The Transfer of Management Innovations from Japan. *Organization Studies*, 16(6), 971-989.

²⁰⁹ Nishiyama, K., Johnson, J. V., (1997). Karoshi--death from overwork: occupational health consequences of Japanese production management. *Int J Health Serv*, 27(4), 625-41.

are comparatively longer than their European counterparts, in recent years they been surpassed by the United States in total annual hours worked²¹⁰.

Ultimately, the Japanese experience is similar to that in other industrialized nations; however, Japan's unique position both relative to its cultural background and the recency of its development have contributed to slightly different development. Also, it is interesting to note that Japan can be a relatively viable candidate for comparisons with the United States. This comparison is attractive since both the US and Japan have relatively time-intensive economies and the structure of Japanese society differs significantly from the US. Thus, it is possible to effectively control for time use while studying the impact of other variables such as infrastructure, culture and other related variables.

Common Issues

Aside from issues that are specific to the industrialized countries discussed above, there are also a number of generalizable trends occurring in these countries. Amongst these common trends we find immigration, an aging population, low birth rates, the ascendance of environmental issues and the influences of globalization and the American economic mentality.

²¹⁰ International Labor Organization (2001). *Key Indicators of the Labor Market 2000-2001*. Retrieved: June, 13, 2007. Website: <http://archives.cnn.com/2001/CAREER/trends/08/30/ilo.study/> see also ILO.org.

In recent decades both Japan and Western Europe have experienced a relatively low birth rate, combined with an aging population. Also in Europe, immigration, mostly from third world countries, has influenced the demographic composition of many European countries along with introducing a segment of European society that is significantly more fertile than the indigenous populations. As the data developed in table 2.3 below indicate, the median age for these countries is relatively high and will likely continue to increase as the population ages while the birth rate remains low²¹¹. Also, the number of immigrants in some countries such as Germany and Great Britain will likely expand to represent a greater portion of the population while the overall population in many of these countries will decrease.

²¹¹ United Nations (2006). *World Population Prospects, 2006 revision*. Retrieved: June, 23, 2007. Website: <http://esa.un.org/unpp/index.asp?panel=2>.

Table 2.3 Median Age and Fertility Rate

Country	Fertility ²¹²	Median Age ²¹³
	2009	2009
Australia	1.78	37.1
Austria	1.39	41.3
Belgium	1.65	41.1
Canada	1.58	39.1
Denmark	1.74	40.1
Finland	1.77	41.6
France	1.98	39
Germany	1.41	43
Iceland	1.90	34.4
Ireland	1.85	34.3
Italy	1.31	42
Japan	1.21	43
Netherlands	1.66	40.7
New Zealand	2.10	34.2
Norway	1.78	38.7
Portugal	1.49	38.8
Spain	1.31	40.3
Sweden	1.67	41.1
Switzerland	1.45	40.4
United States	2.05	36.6
United Kingdom	1.65	40.6

These population trends have a number of implications for policy, sustainability and time use. In any of these instances more economic resources are required to support an aging population, both in terms of the cost of living and healthcare expenditures. Since the elderly represent a significant political interest it's likely that there will be demands placed upon governments and economies of these societies to support the

²¹² CIA World Fact Book (2009). *Fertility Rates*. Retrieved: May 29, 2009. Website: <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2127rank.html>

²¹³ CIA World Fact Book (2009). *Median Age*. Retrieved: May 29, 2009, Website: <https://www.cia.gov/library/publications/the-world-factbook/fields/2177.html> - 82k -

elderly, possibly at the expense of other demographic group. The aging population, combined with a low birth rate, will also place more pressure on those of working age to contribute to and maintain their countries' status as a developed and industrialized economy. Although modern economies can accomplish much through the use of technology in sectors such as manufacturing, it is likely that such a demographic shift will expand the work time requirements of those in the service sectors where it is less possible to gain efficiency through automation.

Along these lines, we must consider the role of immigrants in this situation. Considering that most immigrants in these countries occupy low paid service sector jobs, it is likely that this group will carry much of the burden of this demographic shift. The social consequences of this trend are already apparent in many European countries that rely on immigrant labor. These groups which are often socially and economically marginal to begin with will often become even more marginalized by occupying their lower status position in the economy and their status as non-indigenous groups²¹⁴. Conceivably, if one were to combine this with a trend of an expanding immigrant population it is likely that much social unrest would likely occur, combined with a tendency to make society increasingly stratified based upon national origin and culture. With this set of observations in mind, it may be the case that many European countries will be increasingly exclusive in the allocation of welfare to their inhabitants or that the immigrant populations in these countries will eventually expand and legitimize

²¹⁴ Kosic, A., Mannetti, L., Sam, D. L., (2005). The role of majority attitudes towards out-group in the perception of the acculturation strategies of immigrants. *International Journal of Intercultural Relations*, 29(3), 273-288.

themselves so that they become a dominant force in these countries. Alternatively, the new immigrant group may be increasingly integrated into their new homes and eventually move out of the bottom rungs of the economy.

The demographic composition of Japan and Western Europe also lends itself well to a commentary on these countries' overall sustainability and resource management practices. Generally speaking there are two distinct themes. The first major observation is that these countries became overpopulated and are merely correcting for this through a reduced birth rate. The second observation is that a number of socially and economically related forces such as a high cost of living, high education levels and material prosperity have contributed to a relatively low birth rate compared to developing nations²¹⁵.

Overpopulation can be attributed to both the natural carrying capacity of the countries in question and an artificial shortage of resources that stems from the high cost of living in the countries in question. Although many commentators²¹⁶ have noted the relatively high cost of goods in Western European countries and Japan, most of the commentaries have failed to consider the greater context of these prices. These “artificially” high prices are most likely more reflective of the actual cost of the goods in question than those in the United States. For instance, a high income tax that is redistributed might be seen as correcting for the inequalities created by modern

²¹⁵ Barro, R., (1991). Economic growth in a cross section of countries. *Quarterly Journal of Economics*, 106(2), 407-443.

²¹⁶ Mercer Human Resource Consulting (2007). *Cost of Living survey world Ranking 2007, Including Housing*. Retrieved: June 24, 2007. Website: <http://www.finfacts.ie/costofliving.htm>.

capitalism. Although, the cost of living in many of these countries is most likely a factor in their low birth rates, researchers have noted a number of other factors relating to population and birth rate such as education and rising levels of prosperity. Specifically, it has been noted²¹⁷ that when education levels and standards of living rise birth rates tend to decline both in certain groups such as the educated and well off or in entire societies²¹⁸. Although the causes of the lower birth rates, and in some instances declining populations in many industrialized nations are debatable, the trend by and large is consistent and raises many questions about the development of, and future sustainability of these countries.

In addition to the demographic and resource-related issues of Western Europe and Japan, another issue which these countries have consistently confronted is how to maintain their societies in the face of an increasingly global economy and the strong ideological influence and economic power of American capitalism.

Much like the United States other industrialized countries have confronted economic competition from developing countries. Unlike the United States, however, these other industrialized countries possess significantly different economic and social structures. As noted before, these nations tend to have extensive welfare system, strong labor organizations and on average a stronger and more collective social identity than the United States. Considering these factors, these countries are confronted with a situation in

²¹⁷ Barro, R., (1991). Economic growth in a cross section of countries. *Quarterly Journal of Economics*, 106(2), 407-443.

²¹⁸ Brewster, K., Rundfess, R., (2000). Fertility and women's employment in industrialized nations. *Annual Review of Sociology*, 26(1), 271-296.

which the low cost and loosely regulated economies of the developing world can potentially have more of an impact on these countries than they do on the United States. However, at the same time these nations' cultures are more apt to resist such changes.

One method of assessing the impact of globalization is by noting the ratio of imports to exports. Although there is some inherent variation between small countries that produce a limited number of products and larger, more diversified ones, judging from the data it is evident that countries with more neo-liberal economic policies such as the United States and the UK import more items than they export. Countries with more protectionist trade policies and a strong collective identity tend to be more self reliant.

Table 2.4: Imports verses exports 2005 ²¹⁹

Country	Exports %GDP	Imports % GDP	Ratio Export/Import
United Kingdom	26.12 %	29.28 %	0.89
Norway	45.29 %	30.45 %	1.45
France	26.10 %	26.35 %	0.99
Germany	40.12 %	33.07 %	1.20
Denmark	48.65 %	39.18 %	1.20
The Netherlands	71.22 %	59.73 %	1.19
Belgium	87.14 %	81.09 %	1.07
Sweden	48.59 %	40.56%	1.19
U.S.	10.05 %	14.95%	.67
Japan	13.36 %	9.81%	1.36

Also, as Table 2.5 notes, the number of jobs related to industry has decreased in many of these countries.

²¹⁹ United Nations Commodity Trade Statistics Data base (2005). Retrieved: June, 6, 2007. Website: <http://comtrade.un.org/db/>

Table 2.5: The decline of industrial jobs in developed nations²²⁰

Country	% Employment	Year	% Employment	Year
Norway	20.8	2005	29.2	1980
France	24.6	2004	35.9	1980
Germany	29.7	2005	40.3	1991
United Kingdom	22.0	2005	37.2	1980
Denmark	23.8	2005	29.4	1981
The Netherlands	20.0	2005	30.7	1980
Belgium	24.9	2004	34.7	1980
Sweden	22.0	2005	32.2	1980
United States	20.6	2006	30.8	1980
Japan	27.9	2005	35.3	1981

Although a number of commentators²²¹ have noted that many developed economies have shifted towards the management and service sectors, one must question the long term viability of this shift. Specifically, we must ask whether it is realistic to assume the developed world will long occupy a position in which it is prosperous and dependent upon less developed countries for its material needs. Also, this raises the question of sustainability in these societies. Specifically, a society that cannot produce the goods necessary to support it self is in a very precarious position. In Western Europe and Japan a trend has developed in which global competition may be seen as contributing

²²⁰ World Bank (2005). *World Development Indicators Database*. Retrieved: June 6, 2007, Website: Devedata/worldbank.org/query/default.html

Definition: Employees are people who work for a public or private employer and receive remuneration in wages, salary, commission, tips, piece rates, or pay in kind. Industry corresponds to divisions 2-5 (ISIC revision 2) or tabulation categories C-F (ISIC revision 3) and includes mining and quarrying (including oil production), manufacturing, construction, and public utilities (electricity, gas, and water). World Development Indicators database

²²¹ Schulman, B., (2005). *The Betrayal of Work*. New Press.

to a decline in the well being of those societies. For instance, in 2006 labor unions in Germany renegotiated the length of their work week to prevent their employers from relocating to Eastern Europe where the work week is significantly longer²²². Also, a number of industries in these countries have outsourced their production facilities to the third world²²³.

The net effect of this trend towards globalization has been to create a number of economic problems in Western Europe and Japan which have resulted in a decline in tax revenues and, hence, government cutbacks in funding for their welfare states.²²⁴ Global competition has also altered these countries in the political realm. In western Europe in particular there has been in trend since the mid 1990's to "reform" or "Americanize" both the economies and governments of these countries in response to increasing economic competition. The election of Margaret Thatcher in the UK, Angela Merkel in Germany and Nicolas Sarkozy in France embody this trend towards the neo-liberal model of a limited welfare state and the primacy of free market economics. In all of these instances policy has been proposed that reduces the role of the government in the economy and constrains the extent of the welfare state.

²²² Yates, M. D., (2003). *Naming the System Inequality and Work In the Global Economy*. Monthly Review Press.

²²³ Lander, M., (October, 26, 2005). *German Labor's New Reality*, New York Times.
Gill, S., (1998). European Governance and New Constitutionalism: Economic and Monetary Union and Alternatives to Disciplinary Neoliberalism in Europe. *New Political Economy*, 3(1), 5-26.

By and large, these policies have been mostly endorsed by the ruling factions of the countries in question²²⁵. However, resistance to neo-liberalism has become more popular in very recent years in light of the global economic decline attributed primarily to neo-liberal policies²²⁶. This policy outlook also leans towards reducing taxes and expanding the role of the private sector in the delivery of goods and services such as healthcare and education. Finally, these politicians have supported limiting trade barriers and labor policies that interfere with businesses' ability to compete in the global economy. The assumption in endorsing these policies is that they enable a country to develop an economy that is globally competitive.

In addition to this, liberalization of economies has also been expressed through the creation of the European Union. The EU, which consists of the western European countries combined with some eastern ones, aims to create an open economic system within Europe and an economy of scale which is on par with the United States. Although the EU maintains that member states guarantee social benefits generally in excess of what is provided for in the US, most of the focus of the EU has been on American-style economic liberalization. Critics have questioned the viability of this outlook relative to both the economies of these nations and their long-term sustainability.

Granted America's economic success has often been linked with its neo-liberal economic outlook; however, many informed observers doubt whether or not this model is

²²⁵ Sachs, J., Warner, A., (1995). Economic Reforms and the Process of Global Integration. *Brookings Papers on Economic Activity*.

²²⁶ Peters, M., (2008). The Global Failure of Neo liberalism, Privatize Profits; Socialize Loses. *Global-e, A Global Studies Journal*.

viable in countries that are more developed than the United States²²⁷. Specifically, we must consider America's position as a relatively new country whose economy may not be sustainable relative to resources consumed and long term social viability. It may be wise to question whether or not the American system is appropriate for countries that have traditionally differed from the US in both social and economic structure. Also, there is a greater supply of natural resources in the U.S. Finally, as some have questioned²²⁸, it may be the case that the neo-liberalism of American economics is merely a transient ideological fad that is the product of American society's political and economic hegemony, and that it is likely flawed both relative to its productive abilities and its viability as a social philosophy.

The discussion surrounding the issues of time use, work, policy and sustainability in the United States and other developed nations is a complicated one that involves a number of separate issues occurring at all levels of society. However complicated the entirety of the situation appears to be, however, a number of consistent trends can be noted throughout the discussion. Of particular note is the relationship between overall social and economic structure and individual behavior. It is relatively clear that a society's social values, culture, infrastructure and policy often dictate individual behavior. Also of worthy note is the perceivable relationship among the various dimensions of a societies' level of sustainability. Specifically, it appears to be the case

²²⁷ Bonnett, A., (2005). Global America? The Cultural Consequences of Globalization. *The British Journal of Sociology*, 56(4), 664–665.

Stiglitz, J. E., Myers, J., (2002). *Globalization and Its Discontents*. W. W. Norton & Company.

²²⁸ Harvey, D., (1993). *A brief History of Neoliberalism*. Oxford University Press.

that societies which manage themselves well in one area will tend to do such in other areas. Thus, it is likely to be difficult for one aspect of society to exhibit sustainability while the others do not. This idea is rather applicable to the issues of time use and work, since to achieve equity in these areas it is most likely necessary to address issues not directly related to them.

Chapter 3

Contemporary Issues in Work, Time and Sustainability

This chapter reviews contemporary research on time use and sustainability along with providing two examples of the impact of overwork and the various aspects of the relationship between time use and sustainability. The first example reviews the findings of the Genuine Progress Index for Atlantic Canada study on the time use habits of individuals from the Maritime Provinces. This study represents one of the more comprehensive looks at the impact of time use and work patterns on the various manifestations of sustainability.

The second example explores, in a somewhat hypothetical fashion, the impact of overwork and other time related variables on contemporary American society. On one level this discussion attempts to piece together various research studies in a manner that creates an image of the impact of time use patterns on sustainability. The second level of the discussion of both GPIAC's research and the discussion of overwork in America relates to creating a framework in which to assess the relationships between time use and sustainability. Although both these examples deal with individual countries or specific geographic areas, the overall structure and theory they incorporate is reflective of that used in the subsequent cross-national analysis.

Research in Time Use

The development of time use studies parallels the development of social science in that the majority of meaningful research has been conducted since the early 20th century. As the prior discussion of Taylor's scientific management and time motion

studies has noted,²²⁹ much of the impetus for understanding the dynamics of individual time use stemmed from the needs of industrialization. In addition to Taylor, a number of early studies such as *How Working Men Spend Their Time*²³⁰ and *Round about a Pound a Week*²³¹ focused on how individuals used their daily time. These studies, along with a number of others, focused on using time use diaries as a method of collecting information about an individual's time use patterns. The diary method has subsequently developed into the primary approach to collecting data relating to an individual's time use patterns.

As research progressed through the pre- and post-World War II eras the focus of such research evolved into studies of leisure time²³² and also how different types of individuals managed their domestic affairs²³³. Starting in the 1960's, government and large research-based organizations developed an interest in understanding time use patterns. One study of prominence is the Multi-National Time Use Study (MTUS) undertaken in Halifax, Nova Scotia in 1970²³⁴. This study is of note since it considered not only time use patterns but also each individual's geographic position. More recently the MTUS has undertaken to compile various periodic data sets taken from studies

²²⁹ Taylor, F. W., (1998). *The Principles of Scientific Management*. Dover Publications.

²³⁰ Bevans, G. E., (1913). *How Working Men Spend Their Time* New York. Columbia University Press.

²³¹ Pember, R., (1913). *Round About a Pound a Week*. Bell.

²³² Young, M, Willmott, P., (1973). *The Semmetrical Family: A Study of Work and Leisure in the Longdon Region*. Harmondsworth.

²³³ Walker, K. E., Woods, M. E., (1976). *Time Use: A Measure of Household Production or Family Goods and Services*. Washington D.C. Center for the Family of the American Home Economics Association.

²³⁴ Eliot, D. H., Harvey, A. S., Procos, D., (1976). An over view of the Halifax time budget study. *Society and Leisure*, 3, 145-159.

throughout the industrialized world²³⁵. Additionally individual countries such as the United States maintain time use study projects such as the American Time Use Survey through the Bureau of Labor Statistics. However, regardless of these studies' usefulness, time use research of this nature is expensive and often limited in its ability to be consistent. For instance, the Bush administration had proposed eliminating the American Time Use Study for budgetary reasons²³⁶. Although some research of this nature is more useful than none, the lack of consistent and comprehensive data make large scale cross national comparisons difficult, even when data are compiled and harmonized. However, individual studies that relate specific topics such as occupation and gender provide much information about how specific types of individuals use their time. The subsequent sections review a number of these topics, along with providing a discussion of some prominent themes in contemporary time use research.

Work

The analysis of data relating to time and work is by far the most prominent and frequently studied aspect of time use. A large volume of research has been done studying various aspects of labor. These studies can be typified as either assessing how work is performed or what effects certain labor patterns have on social or individual outcomes. For instance, the Michie and Cockcroft²³⁷ study focuses on how overwork can eventually

²³⁵ Pentland, W. E., Harvey, A. S., Lawton, M. P., McColl, M.A., (1999). *Time use research in the Social Sciences*. Kluwer Academic Press.

²³⁶ Izzo, P., (February, 2, 2008). U.S. Survey on time use may be eliminated. *Wall Street Journal*.

²³⁷ Michie, S., Cockcroft, A., (1996). Overwork Can Kill. *British Journal of Medicine*, 312, 921-922.

kill workers subjected to it, while research such as Stafford and Duncan's 1976²³⁸ study focused on assessing the relationship between economic productivity and labor use. Another aspect of labor analysis deals with assessing the true nature of work relative to time use and specific activities. Studies by Niemi (1983) and Robinson and Goodbey²³⁹ all have noted that people tend to work less than their official hours, or even what they voluntarily enter into a time use diary. Finally, research such as that done by Schor²⁴⁰ notes how overwork relates to greater issues of lack of leisure, quality of life in non-material terms, and how such social forces such as consumerism have shaped the overwork dynamic.

Time use research related to issues of gender, family and quality of life represents the second major category of research. A number of studies²⁴¹ have conducted research on the gendered division of labor as it relates to both formal and informal labor. Also, other research such as that of Stafford and Duncan (1985)²⁴² studied the differences between men and women in shopping and other behaviors. In general, research relating to gender differences in time use have concluded that by and large women's work is mostly

²³⁸ Stafford, F. P., Duncan, G. J., (1976). Market hours, real hours and labor productivity. *Economic Outlook*, 103-119. Robinson, J. P., Godbey, T., (1997). *Time for Life: The Surprising Way Americans Use Their Time*. State College: The Pennsylvania State University Press.

²³⁹ Niemi, I., (1983). Systematic bias in hours worked? *Statistical Review*, 4, 326-330.

²⁴⁰ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

²⁴¹ Bryson, G.V., (2008). Time Use Studies. *International Feminist Journal of Politics*, 10(2), 135-153.

²⁴² Stafford, F. P., Duncan, G. J., (1985). The use of time and technology by households in the United States. In F. T. Jester & F.P. Stafford. *Time, Good, and Well Being*, Ann Arbor University Of Michigan Press.

informal and domestic, both in developing and developed nations²⁴³. What is interesting about this conclusion is that despite a widespread perception of gender equity in industrialized nations, gender divisions detrimental to women continue to exist.

Aside from gender, research on how people use time throughout various stages of life is another prominent area of study. Some research such as the American Time Use Study²⁴⁴ have compiled data on how individuals of different age groups spend their time while other studies such as Gauthier and Furstenberg's²⁴⁵ study of adolescents attempts to explain the underlying conditions that promote certain time use patterns in young adults. Also, time use research that relates to various life stages represents a picture of highly interdisciplinary aspects of time use research. Social science related disciplines such gerontology and criminology and public health all make use of time use research.

Along these lines of studying issues of gender or age-specific time use research relating to recreation and quality of life, a robust literature is in evidence. Studies of leisure typically deal with the amount of free time people have available to them and how they decide to utilize such free time²⁴⁶. Often leisure studies occur in the context of general time use studies,²⁴⁷ but also studies of leisure activities can be specifically geared

²⁴³ Pentland, W. E., Harvey, A. S., Lawton, M. P., McColl, M.A., (1999). *Time use research in the Social Sciences*. Kluwer Academic Press.

²⁴⁴ American Time Use Survey (2007). Retrieved: July 16, 2007. Website: <http://www.bls.gov/tus/>.

²⁴⁵ Gauthier, A. H., Furstenberg, F. F., (2002). The Transition to Adulthood: A Time Use Perspective. *The ANNALS of the American Academy of Political and Social Science*, 580(1), 153-171.

²⁴⁶ Pentland, W. E., Harvey, A. S., Lawton, M. P., McColl, M.A., (1999). *Time use research in the Social Sciences*. Kluwer Academic Press, New Work.

²⁴⁷ Lundberg, G. A., Komarovsky, M., (1934). *Leisure: A Suburban Study*. New York. Columbia University Press.

towards assessing issues such as how people spend their vacation time. Research on quality of life and time use represents a departure from the afore-mentioned research since it often incorporates many subjective and normative elements. For instance, Zuzanek²⁴⁸ assessed the relationship between the amount people worked and their subjective appraisal of their own personal happiness. Also, along these lines a study by Robinson and Martin²⁴⁹ tested and confirmed the hypothesis that happy people tend to be involved in more activities they enjoy than those who are not. Other research, however interjects a somewhat normative element into the discussion. For instance, Juliet Schor's book *The Overworked American* uses empirical information about working time combined with normative arguments relating to American culture and consumerism to conclude that much of what can be described as Americans' obsession with over work is the product of cultural values and social norms.

Research relating to the relationship between time use and geographic position is yet another example of time use research. Such research differs from other forms of time use research since it assesses the relationship between time and physical infrastructure or geography. This type of research is both highly useful in facilitating our understanding of the role of physical structure in time use and also the most expensive to conduct since it requires both an assessment of an individual's location and time use. However, research such as the MTUS 1970-71 Halifax Nova Scotia²⁵⁰ study along with more

²⁴⁸ Pentland, W. E., Harvey, A. S., Lawton, M. P., McColl, M.A., (1999). *Time use research in the Social Sciences*. Kluwer Academic Press, New Work.

²⁴⁹ Robinson, J. P., Godbey, (1997). *Time for Life: The Surprising Way American Use Their Time*. The Pennsylvania State University Press.

²⁵⁰ Eliot, D. H., Harvey, A. S., Procos D., (1976). An over view of the Halifax time budget study. *Society and Liesure*, 3, 145-159.

specific work such as Dunton et al.'s²⁵¹ study of how physical environments affect physical activity add a tremendous amount of knowledge to our understanding of the relationship between physical spaces and time use. Relative to the research being conducted here, inquiries that relate to space and time use highlight the structural nature of time use and consequently sustainability.

The final area of time use research that is of interest to a discussion of time use and sustainability is that of cross-national studies. Since the research being conducted here compares data cross-national on time use and sustainability, prior research on the topic is of particular value for both reasons of information and methods. Research of this nature is relatively limited, both by virtue of cost and the scope of the specific topic it addresses. At the root of most cross-national time use research are compiled data sets such those developed by the MTUS²⁵². Although these data have been harmonized to be compatible with one another, they unfortunately lack both consistencies in terms of subject breadth and timing. Thus, studies that use such data must deal with such inconsistencies.

Although cross-national research using time use diaries is limited, research that deals with individual topics such as leisure and work is rather extensive. For instance, analysis of specific aspects of time use such as working time²⁵³ or leisure²⁵⁴ have been

²⁵¹ Dunton, G. F., Berrigan, D., Ballard-Barbash, R., Graubard, B., Atienza, A., (2000). Social and physical environments of the sports and exercise reported among adults in the American Time Use Survey. *Preventive Medicine*, 47 (5), 519-514.

²⁵² Multinational Time Use Study (2007). Retrieved: June, 16, 2007. Website: <http://www.timeuse.org/mtus/>.

²⁵³ Jacobs, G., Gornick, J. (2001). *Hours of Paid Work in Dual-Earner Couples: The U.S. in Cross-National Perspective*. United Nations.

frequently conducted using cross-national research. One fairly comprehensive cross-national research project of particular relevance to this research is that Goodin et al (2007) presented in *Discretionary Time*. That study uses MTUS data to assess the relationship between work time, income, taxes and free time in six countries. *Discretionary Time* also incorporates Anderson's²⁵⁵ typology of liberal, traditionalist and egalitarian welfare states. Goodin and his colleagues present that idea that discretionary time²⁵⁶, that is meaningful free time that is not incurred at the expense of income or taxes, is the most accurate measure of free time²⁵⁷. Goodin also make the case that discretionary time should be based upon a presumption that income earned above what is necessary to subsist is not need²⁵⁸.

Goodin et al. then analyze the amount of discretionary time available to various groups of people in the countries studied. From this analysis they conclude that single males have the most discretionary time in liberal welfare regimes such as Australia and the United States, while single parents have the most such time in egalitarian welfare

²⁵⁴Beatty, S. E., Jeon, G., Albaum, J., Murphy B., (1994). A cross national study of leisure activities. *Journal of Cross-Cultural Psychology*, 25(3), 409-422.

²⁵⁵ Epsing-Anderson, G., (1990). *The Three Worlds of Welfare Capitalism*. Princeton University Press. Government Accountability Office (2007). *Employer-Sponsored Health and Retirement Benefits: Efforts to Control Employer Costs and the Implications for Workers*. GAO Report-07-355.

²⁵⁶ Goodin, R., Rice, J. M., Bittman, M., Sauders, P., (2005). *The Time-Pressure Illusion: Discretionary Time Versus Time*. Social Policy Research Centre.

²⁵⁷ Although Goodin's model does neglect the issue of multiple jobs, which in certain groups such as the working poor is a substantial issue.

²⁵⁸ Goodin, R., Rice, J. M., Parpo, A., Ericksson, L., (2008). *Discretionary Time*. Cambridge University Press. Relative to the definition of subsistence, Goodin et al. define subsistence as slightly above the poverty level.

states such as Finland and Sweden²⁵⁹. Also they conclude that taxing and redistributive policies are at the root of such trends. In liberal countries the lack of redistributive policy effectively means those individuals with the most time and money have the most discretionary time since discretionary time is a factor of both time and money. In contrast, in traditionalist and egalitarian welfare regimes policy has been developed to assist certain groups such as parents, either in terms of free time or monetary subsidies. What is interesting about Goodin et al.'s research is that it attempts to tie together the relationship between time use, policy and other factors. Although we can question some aspects of Goodin et al.'s conclusions such as the marginal utility of income paid in taxes or the quality of life assumed in a discretionary time model, their methodology provides an excellent basis for the analysis of time use and sustainability done here. Ultimately, Goodin et al.'s research along with other less comprehensive studies can provide us with some basis for inference regarding the status of time use through the countries studied.

In addition to the various topics studied in time use research, there are also some prominent themes and discussions that are relevant to the research being conducted here. As mentioned before much time use research attempts to view equity or inequity in time use through a combination of time use and other factors such as economics. Goodin et al.'s example of discretionary time is the most prominent instance of this. In addition, the scope and context play important roles in understanding time use. For instance, an understanding of how an individual spends an average week says little about his or her

²⁵⁹ Goodin, R., Rice, J. M., Parpo, A., Ericksson, L., (2008). *Discretionary Time*. Cambridge University Press.

activities throughout the course of a year or throughout their life time. Thus, comprehensive measures of time use needs to include a variety of different concepts.

Also, the findings of time use research must be placed in the proper context. For instance, some research has suggested that Americans today have more free time than in the 1960's, while systematically ignoring the effects of unemployment²⁶⁰. This criticism of certain research is indicative of the greater status of contemporary time use research in that truly meaningful research addressed both how people use their time and this greater context with which time use occurs. For instance, a good amount of contemporary time use research addresses issues of social and economic equity relative to how people work and how their time is managed. A good a example of this is a study by Andrew Stevens and David Lavin that deals with time management and the labor of call center employees in Canada which notes the tensions that arise when management attempts to micromanage employees²⁶¹. Also, on a more structural level we find that there is a significant body of research that deals with the impact of social, physical and economic structures on time use and the levels of equity associated with various arrangements.²⁶² As noted in the afore-mentioned research along with numerous other studies of a similar nature, most of the theoretical progress in time use research stems from relating time use patterns to other social phenomena. This visible trend towards creating extensive

²⁶⁰ Aguiar, M., (2007). Measuring Trends in Leisure: The Allocation of Time Over Five Decades. *Quarterly Journal of Economics*, 122(3), 969-100.

²⁶¹ Stevens, A., Lavin, D., (2007). Stealing time: The temporal regulation of labor in neoliberal and post-fordist work regimes. *Democratic Communique*, Fall.

²⁶² One good example of this which is discussed latter is: Pannozzo, L., Colman, R., (2004). *GPIAC, Working Time and the Future of Work in Canada*. Retrieved: July, 21, 2007. Website: <http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>, also there are numerous other studies which characterize the relationship between time use and social, economic and environmental equity that are beyond the scope of this work.

interdisciplinary research and theory is what ultimately ties time use research to theories of sustainability.

A few themes regarding specific concepts can be derived from the prior discussion of time use research along with the subsequent discussion in this chapter. First, research on time use suggests that problems in time use relate to problems in other aspects of society the lives of individuals or the environment such as health status or resource consumption. Although by no means comprehensive, most research points towards a positive relationship between equity in time use and equity in other factors such as social and economic equity. Second, it appears it would be useful to develop an index that incorporates various measures of time use ranging from daily activities to activities occurring at various stages of life into a combined index of time equity. Such an index could then be compared with various other indicators to assess their relationship.

Sustainability Research

Contemporary research on sustainability represents an incredibly diverse field of inquiry. Generally speaking, discussions of sustainability are divided into those which deal with economic, environmental or social issues. The following discussion highlights some of the major questions being explored in contemporary research relating to sustainability. As the discussion in the prior section about the history and development of sustainability notes, much of what sustainability attempts to address has been a consistent issue with humans since the beginning of history. However, modern work with sustainability differs from prior attempts at understanding similar topics in that modern research explicitly attempts to address issues of sustainability rather than

implicitly as the result of other considerations. As the subsequent discussion notes, modern research in sustainability is geared towards both enhancing our understanding in theoretical terms and developing applied methods that can be used to address everyday issues that relate to sustainability.

Environmental sustainability

Environmental sustainability arguably is at the core of theory and research relating to sustainability. This is so since topics relating to the environment were the first studied and, often provide theoretical models that can be applied elsewhere²⁶³. At the core of research on environmental sustainability is the idea of creating a balance between human activity and the needs and capabilities of the environment. This idea is summarized in the definition of sustainability put forth by the United Nations Brundtland commission in 1986 which stated that sustainability can be defined as “Meeting the needs of the present without infringing upon the needs of the future”²⁶⁴. Using this idea as basis, a number of areas can be studied using methods that attempt to answer the question: what is the exact nature of a sustainable system?

One of the core areas of research in environmental sustainability is that of ecology. Ecology on a broad level deals with how systems or environments operate²⁶⁵. In this sustainability field, research that assesses ecological or systems-related questions mostly deals with addressing how much use a given ecosystem can tolerate, and what are

²⁶³ Munier, N., (2005). *Introduction to sustainability: Road to a better future*. Springer.

²⁶⁴ United Nations (1987). *Report of the World Commission on Environment and Development*. General Assembly Resolution 42/187, 11 December 1987.

²⁶⁵ Odum, E. P., (1971). *General Principles of Ecology*. W. B. Saunders Company.

the likely consequences if a system is overburdened²⁶⁶. One prominent example of research that deals with the impact of certain factors on the environment is the assessment of the impact of pollution and other man-made on the environment. Also, ecological research aims to assess what is the proper structure of the environment. For instance, research on biodiversity attempts to gain an understanding of the inter relationships amongst various species within an ecosystem²⁶⁷.

Also, along these lines research that relates to habitat and ecosystem management attempts to address how various environments can be successfully managed²⁶⁸. It is interesting to note that habitat or environment-wide research occurs both using the natural and human-made environment, the latter is often referred to as human or urban ecology²⁶⁹. Studies relating to understanding the dynamic of population and resource consumption on a given ecosystem represents another area of study. Incidentally, population studies and the theory that relates to them are among the older forms of research of this nature; they are useful to our understanding of the impact that humans have on the environment and provide us with a basic framework from which we can address numerous topics relating to sustainability. Specifically, the notion that all actions are caused by and occur within the context of an environment is fundamental to all research relating to sustainability.

²⁶⁶ Millennium Ecosystem Assessment Board (2003). *Ecosystems and Human Well-Being: A Framework for Assessment*. Island Press, London.

²⁶⁷ Wilson, E. O., Peter, F. M. (1988). *Biodiversity*. National Academy Press.

²⁶⁸ Selin, S., Chevez, D., (1995). Developing a collaborative model for environmental planning and management. *Environmental Management*, 19(2), 189-195.

²⁶⁹ Beatley, T., Manning, K. (1997). *The Ecology of Place: Planning for Environment, Economy, and Community*. Cisco.

Resource management research forms a large portion of contemporary research in sustainability. Resource management differs from ecology mostly in that it deals with the use and management of a specific resource. Generally speaking, research on resource management divides most resources into either renewable or non-renewable resources²⁷⁰. Much of the research on nonrenewable resources examines topics such as mining or other extractive industries and focuses on developing these resources without undue or adverse impacts on the ecosystem²⁷¹. In the instance of renewable resources research primarily focuses on developing systems that can extract the maximum amount of resources consistently without interfering with the greater environment²⁷². Research in resources management deals with a diversity of topics ranging from mineral extraction²⁷³ to forestry and watershed management²⁷⁴.

Environmental impact assessment is another area of environmental topics that is pertinent to a discussion of sustainability. Impact assessment is a highly applied field that usually focuses on the impact of a given product or community²⁷⁵. One of the more prominent manifestations of impact assessment is the environmental assessment

²⁷⁰ Pearce, D. W., Kerry, R., (1990). *Economics of Natural Resources and the Environment*. JHU press.

²⁷¹ Schou, P., (2000). Polluting Non-Renewable Resources and Growth. *Environmental and Resource Economics*. 16(2), 211-227.

²⁷² Clark, C., Clarke, W., Munro, F., Gordon, R., (1979). The Optimal Exploitation of Renewable Resource Stocks: Problems of Irreversible Investment. *Econometrica*, 47(1), 25-47.

²⁷³ Hodges, C. A., (1995). Mineral Resources, Environmental Issues, and Land Use. *Science*. 268(5215), 1305–1312.

²⁷⁴ Waring, R. H., Schlesinger, W. H., (1985). *Forest ecosystems: Concepts and management*. Academic Press. Naiman, R. J., (1992). *Watershed management: Balancing Sustainability and Environmental Change*. Springer.

²⁷⁵ Glasson, J., Therivel, A. R., (2005). *Introduction to Environmental Impact Assessment*. Talyor Franics.

requirement for all federal projects that is part of the National Environmental Protection Act of 1970²⁷⁶. Also, there are a number of other methodologies such as LEED green building certification²⁷⁷ and community sustainability assessment²⁷⁸ techniques that gauge environmental performance. Although environmental impact assessment is mostly an applied aspect of sustainability research, it is intrinsically tied to theory since it relies upon a theoretical understanding of sustainability to develop standards through which policies and programs and projects can be assessed.

Social Sustainability

Social sustainability represents the second major component of sustainability-related research. Studies of social sustainability are quite broad in terms of both subject and methodology. Broadly defined, research in social sustainability involves analysis of how social structures influence sustainability-oriented behaviors or other structures. Thus, research can emphasize the role of cultural variables,²⁷⁹ infrastructure,²⁸⁰ and to some extent technology and design of physical objects. Also, social sustainability can

²⁷⁶ Liroof, R. A., (1976). *A National Policy for the Environment: NEPA and Its Aftermath*. Indiana University Press.

²⁷⁷ University of Waterloo (2007). *Green Building Rating System Version 2.0*. Retrieved: July, 18, 2007. Website:

http://www.civil.uwaterloo.ca/beg/ArchTech/LEED%20rating%20V2_0.pdf

²⁷⁸ Valentin, A., Spangenberg, J. H., (2000). Assessment Methodologies for Urban Infrastructure, A guide to community sustainability indicators. *Environmental Impact Assessment Review*, 20(3), 381-392.

²⁷⁹ Ester, P., Vinken, H., Simoes, S., Aoyagi-Usui, M., (2005). *Culture and Sustainability: A Cross National Study of Cultural Diversity and Environmental Priorities Among Mass Publics and Decision Makers*. Dutch University Press.

²⁸⁰ Pugh, D. J., Pugh, C., (1996). *Sustainability, the Environment and Urbanization*. Earth Scan.

assess the effects that a physical environment has had on some aspect of social structure or technology²⁸¹.

One of the more applied fields in social sustainability research involves planning communities and infrastructure to meet environmental and social needs. For instance, the livable communities movement²⁸² aims to design communities in which walking can be the primary mode of transit and the overall environmental impact of the community is limited. As mentioned before, various methodologies have developed that attempt to establish standards for environmental performance in design and function. Although much of this research focuses on the environmental aspects of products, there is also a strong social element to these assessments. For instance, research has been conducted on the health outcomes of individuals that live in walkable communities versus those that do not²⁸³. Also, research of this nature can be used to assess various aspects of the socio-economic structure of a community. Of particular interest is research relating the proper balances of various social and economic interests within a community. As a wide body of research has noted, topics such as gentrification²⁸⁴ and social inequality²⁸⁵ are highly relevant to discussions of sustainability. Ultimately, research that attempts to gauge the

²⁸¹ Elliott, D., (2003). *Energy, Society and Environment: Technology for a Sustainable Future*.

Routledge. Diamond, J., (2004). *Collapse*. Viking Adult.

²⁸² Zelinka, A., Brennan, D., (2001). *SafeScape: Creating Safer, More Livable Communities Through Planning and Design*. Published by Planners Press, American Planning Association.

²⁸³ Burden D., (1998). *Walkable Communities: Designing for Pedestrians*, Southeast Michigan Council of Governments, and Walkable Communities, Inc.

²⁸⁴ Smith, N., (1996). *The New Urban Frontier: Gentrification and the Revanchist City*. Routledge.

²⁸⁵ Booza, J., Cutsinger, J., Galster, G. (2006). *Where Did They Go? The Decline of Middle-Income Neighborhoods in Metropolitan America*. Brookings Institution.

proper design of products and communities along with the effects of certain social arrangements is highly relevant to our greater understanding of sustainability since such research establishes both an understanding of the influence of various factors on sustainability and what is required to make various social institutions more sustainable.

In addition to the specific assessment of communities and products, research in social sustainability can also assess how entire regions or nations perform at certain tasks. For instance, the Environmental Performance Index²⁸⁶ compiled by a collaborative effort at Yale and Columbia University attempts to gauge a country's levels of sustainability. Also, such indices exist for social inequality²⁸⁷, social welfare²⁸⁸, and social mobility²⁸⁹. In any of these instances these indices provides a general assessment of how a society is faring on certain indicators. For the most part the research being conducted here fits into this category. Although somewhat general in nature, such indices are arguably important steps in developing broad, overall assessments of sustainability.

Research that links culture, ideology and policy to sustainability represents the final major category of research in social sustainability. Arguably a society's culture, along with its prevailing ideology, has a large influence on how people view sustainability and related topics. Much research has noted that pervasive social

²⁸⁶ Environmental Progress Index (2007). Retrieved: June 16, 2007. Website: <http://epi.yale.edu/Home>

²⁸⁷ Atkinson, A. B., Bourguignon, F., (2000). *Handbook of Income Distribution*. Elsevier.

²⁸⁸ Hamilton, K., Ruta, G., (2006). *Paper for discussion at the JRC/OECD Workshop Measuring Well-Being and Societal Progress*. Università Cattolica del Sacro Cuore , Milan, 19-21 June 2006. Retrieved: July, 20, 2007. Website: http://crell.jrc.ec.europa.eu/Wellbeing/papers/Ruta%20&%20Hamilton_Measuring%20Social%20Welfare%20and%20Sustainability%20v2.pdf

²⁸⁹ Lipset, S. M, Bendix, R., (1992). *Social Mobility in Industrial Society*. Transaction Publishers.

mentalities can have either a negative or positive impact on how a society deals with its environment, economy or members²⁹⁰. One of the more interesting discussions of the role of culture in sustainability is Jarred Diamond's book *Collapse*²⁹¹ in which Diamond assesses how various cultures throughout history either failed or succeeded based upon their cultural values and their appreciations for their environment.

In addition to this, if we take an inclusive view of sustainability it is also possible to include research that relates various social and economic practices to cultural or ideological values. One of the more important pieces of research that deals with this topic is Gosta Esping-Anderson's work *The Three Worlds of Welfare Capitalism*²⁹². In this work Anderson presents the hypothesis that a nation's cultural values have an influence on the type of welfare systems a country adopts. Specifically, Anderson hypothesizes that there are three distinct types of welfare states: liberal, traditionalist, and egalitarian. Liberal welfare states, such as the United States, are those that possess the most limited welfare state and tend to view social services as measures of last resort.

Traditionalist welfare states, such as France, use social policy to uphold traditional values and social structures. Finally, egalitarian welfare states, such as those in Scandinavia, use welfare policy to achieve both a more equal and productive society. In any of these instances Anderson makes the case that how a society deals with social issues is most contingent upon its cultural values. Although not the purest manifestation

²⁹⁰ Ester, P., Vinken, H., Simoes, S., Aoyagi-Usui, M., (2005). *Culture and Sustainability: A Cross National Study of Cultural Diversity and Environmental Priorities Among Mass Publics and Decision Makers*. Dutch University Press.

²⁹¹ Diamond, J., (2004). *Collapse*. Viking Adult.

²⁹² Esping-Anderson, G., (1990). *The Three Worlds of Welfare Capitalism*. Princeton University Press.

of research in social sustainability, Anderson's research does highlight the relationship among culture, policy and sustainability. Anderson's typology provides a useful framework for later analysis.

In addition to Anderson's analysis, there is also much specific research that deals with how culture and ideology shape policies that are relevant to sustainability²⁹³. For instance, much research has been done on the impact of cultural values and land use policy²⁹⁴. Also along these lines, a substantial body of literature deals with the relationship between consumerist values and resource consumption. On a fundamental level, cultural values can be seen as both directly influencing behaviors affecting sustainability along with indirectly influencing public policy, which then in turn either promotes or hinders sustainable outcomes.

Economic sustainability

Economic sustainability is the third major category of research on sustainability. There are two major elements to research in economic sustainability. The first area, emphasizes the theoretical conflict of sustainable economic systems thinking with more traditional approaches to economics. The second area is that of applied analysis geared towards economic systems that have sustainable internal standards and have sustainable social and environmental standards.

²⁹³ Le'Le, S., Norgaard, R., (1996). Sustainability and the Scientists' Burden. *Conservation Biology*, 10(2), 354-365.

²⁹⁴ Dryzek, J. S., (1997). *Politics of Earth: Environmental Discourses*. Oxford University Press. See also Diamond, J., (2004). *Collapse*. Viking Adult. for a discussion of various case studies.

The theoretical dialogue surrounding sustainable economics can be reduced to a basic dichotomy between sustainability and traditional theories of economics. Sustainability by its very nature is inclusive and seeks balance amongst competing interests. However, as some have noted²⁹⁵ many theories in contemporary economics restrict definitions of productivity and success to a very limited set of variables. Also, many theories of contemporary economics such as neo-classical theory have been accused of presenting an overly simplistic view of human nature²⁹⁶. For instance, the assumptions that all economic behavior is the result of self-interest and rational decisions has been widely criticized as inaccurate.²⁹⁷

Also, some traditional economic indices such as Gross Domestic Product have been criticized since they only consider the monetary value of the products and services produced rather than the efficiency and usefulness of such products to society²⁹⁸. In general, sustainable economics attempts to address these issues through a process of what is known as “full cost accounting”²⁹⁹. Full cost accounting attempts to assess the impact of a given activity in terms of not only its formal economic consequences but also in

²⁹⁵ Illge, L., Schwarze, R., (2009). A matter of opinion-How ecological and neoclassical environmental economists think about sustainability and economics. *Ecological Economics*, 68(3), 594-604.

²⁹⁶ Green, D. P., Shapiro, I., (1994). *Pathologies of Rational Choice Theory: A Critique of Applications in Political Science*. Yale University Press.

²⁹⁷ Illge, L., Schwarze, R., (2009). A matter of opinion-How ecological and neoclassical environmental economists think about sustainability and economics. *Ecological Economics*, 68(3), 594-604.

²⁹⁸ Lawn, P. A., (2003). A theoretical foundation to support the Index of Sustainable Economic Welfare (ISEW) Genuine Progress Indicator (GPI), and other related indexes. *Ecological Economics*, 44(1), 105-118.

²⁹⁹ Herbohn, K., (2005). A full cost environmental accounting experiment. *Accounting, Organizations and Society*, 30(6), 519-536.

terms of the informal economic, social and environmental costs. One of the more prominent manifestations of full cost accounting is found in the Genuine Progress Index (GPI). As mentioned before, the GPI is an attempt at creating an index which assesses progress through a number of tangible indicators rather than abstractions such as GDP or rate of economic growth. Although traditional economic indicators are attractive because of their parsimony, more inclusive indicators such as the GPI provide a more accurate view of an economic system.

Also, sustainable economics differs from more traditional approaches in that many analyses concern themselves with forecasting whether or not a given economic arrangement is viable over a period of time. Although there exists a great deal of tension between traditional economics and sustainable approaches, it is noteworthy that some of the ideas from sustainable economics have been adopted in mainstream economic and business research. For instance, one approach from business management assesses the fiscal viability of a company over a long period of time³⁰⁰. Additionally, economic forecasting for entire economies has developed methods that incorporate various principles of sustainability. Although these analyses are mostly fiscal in nature, they do allude to the widespread integration of sustainability-related thinking into contemporary economics. Considering the economic problems experienced in the American economy in 2008 and 2009, it appears likely that analyses which consider the broad implications and context of economic activity will grow in importance.

³⁰⁰ Gladwin, T. N., Kennelly, F. T., Krause, J. J., Shifting, T., (1998). *Paradigms for Sustainable Development: Implications for Management Theory and Research*. Retrieved: June, 14, 2007. Website: IB-95-5. Available at SSRN: <http://ssrn.com/abstract=6886>.

The second element of economic sustainability relates to research which utilizes sustainable principles in applied settings. In general, these efforts aim to make products, economies or businesses more sustainable through either management or design. For instance, numerous certification processes exist through which businesses can claim that some aspect of their operation is sustainable. Some notable examples of this are the green certification of forest products and statements made by manufacturers concerning their recycling practices³⁰¹. Also, various products make claims about the level of social and economic equity they maintain in their business practices. The broad-based “fair trade” movement which aims to equitably compensate pay developing world labor for their work is an example³⁰².

One of the most prominent areas examining specific practices and design paradigms has been in the area of sustainable agriculture. Sustainable agricultural practices are rooted in both a concern for the effects of intensive modern agriculture on the environment along with the possible adverse effects of using man-made chemicals to enrich the soil and treat food³⁰³. As a consequence of these concerns much applied research has been preformed to help develop sustainable and organic agriculture.

Another prominent area of interest in sustainable economics has been the development of sustainable or “green” design methods. Such methods extend to a variety

³⁰¹ Green Seal (2007). Retrieved: June, 19, 2007. Website: <http://www.greenseal.org/>

³⁰² Renard, M. C., (2003). Fair Trade: quality, market and conventions. *Journal of Rural Studies*, 19, 87-96.

³⁰³ Gliessman, S. R., (1998). *Agroecology: Ecological Processes in Sustainable Agriculture*. CRC press.

of products ranging from structures³⁰⁴ to automobiles³⁰⁵. The criterion through which each product is designed differs. For instance, energy efficiency and environmentally-friendly materials are considered important in structures,³⁰⁶ while the ability to be recycled is important for electronics³⁰⁷. Although there tends to be a general consensus as to what defines a sustainable product³⁰⁸, there are also elements of ambiguity and debate about the proper application of sustainable principles to product design. For instance, a building might adhere to certain LEED building standards while its size and function might ultimately preclude it from being sustainable. Additionally, standards for efficiency of certain products such as automobiles have been criticized since they do not consider the overall environmental impact of the car³⁰⁹.

Ultimately, there are a number of themes we can discern from contemporary discussions of sustainability. First and most important, there is recognition of the universal and interrelated nature of issues connected to sustainability. Although the prior discussion has presented research in a widely accepted typology, the reality of research relating to sustainability is that it is difficult to place many subjects in a distinct

³⁰⁴ Scheuer, C. W., Keoleian, G. A., (2007). *Evaluation of LEED – Using Life Cycle Assessment Methods*, National Institute for Standards and Technology. Retrieved: July, 22, 2007. Website: <http://www-25.nist.gov/oa/publications/gcrs/02836.pdf>

³⁰⁵ CNW Research (2007). *'Dust to Dust' Automotive Energy Report*. Retrieved: June, 10, 2007. Website: <http://cnwmr.com/nss-folder/automotiveenergy>.

³⁰⁶ U.S. Green Building Council (2007). *LEED Building Certification*. Retrieved: July, 16, 2007. Website: <http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>

³⁰⁷ Green Peace (2008). *Your Guide to Green Electronics*. Retrieved: December, 18, 2008. Website: <http://www.greenpeace.org/international/news/green-electronics-guide-ewaste250806>.

³⁰⁸ Maxwell, D., Van der Vorst, R., (2003). Developing sustainable products and services. *Journal of Cleaner Production*, 11(8), 883-895.

³⁰⁹ CNW Research (2007). *'Dust to Dust' Automotive Energy Report*. Retrieved: June, 10, 2007. Website: <http://cnwmr.com/nss-folder/automotiveenergy>.

classification. Consequently, it is often best to view sustainability issues from a rather broad and holistic perspective. Second, understanding sustainability requires incorporating a number of perspectives and methodologies not commonly associated with one another. For instance, specific and technical discussions can be viewed through normative lenses or we might assess the influence of cultural structures on empirically observed phenomena. In either case it is necessary to maintain methodological pluralism. Third, as much of the research correctly notes³¹⁰ one important aspect of understanding sustainability is using a flexible theoretical orientation that is not limited by rigid axioms. Although this orientation provides some challenges in terms of defining specific characteristics of sustainability, it ultimately provides the opportunity to develop new and useful theories as to the nature of social, economic and environmental structures.

The GPIAC Nova Scotia study: A basis for comprehensive understanding³¹¹

The Genuine Progress Index for Atlantic Canada's (GPIAC) study of the dynamic between long working hours and various indicators of social and economic well being provides us with comprehensive and systematic research³¹² that depicts the impact of long working hours on social and economic structures. Although this research is done in the context of the Maritime Provinces of Canada, the economic and social conditions

³¹⁰ Harris, G. P., (2007). *Seeking Sustainability in an Age of Complexity*. Cambridge University Press.

³¹¹ Pannoza, L., Colman, R., (2004). *GPIAC, Working Time and the Future of Work in Canada*. Retrieved: July, 21, 2007. Website: <http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>

³¹² Genuine Progress Index for Atlantic Canada (2007). Retrieved: May, 5, 2007. Website: <http://www.gpiatlantic.org/>

noted there are sufficiently similar to America that findings are applicable to the American experience. Also, many of the findings reported in this study can be generalized to other situations that deal with sustainability. GPIAC's research relies upon the notion of using genuine indicators of social progress that measure tangible aspects of the well being of individuals and communities. As this idea applies to work time, GPIAC cites the following five indicators of real progress in work-related time usage:

- 1) A decline in work hours for those who already have full-time work, who are working Overtime, and who are working excessively long hours³¹³.
- 2) A decline in hour's polarization, unemployment, and underemployment.³¹⁴
- 3) An increase in work that contributes to positive human development and quality of life³¹⁵.
- 4) An increase in the types of work that are socially and environmentally benign and a Corresponding decrease in work that is damaging to communities and the environment³¹⁶.
- 5) An increase in job security and a corresponding decline in "non-standard" work which is characterized by low pay, insecurity, lack of benefits, and lack of worker autonomy.

³¹³ Although the term "excessively long hours" is somewhat arbitrary for the purposes of GPIAC's research, it was defined as being hours in excess of 40 hours per week. Pannozzo, L., Colman, R., (2004). *GPIAC, Working Time and the Future of Work in Canada*. Retrieved: July, 21, 2007. Website:

<http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>

³¹⁴ Advisory Group on Working Time and Distribution of Work (1994). *Report for the Advisory Group on Working Time and the Distribution of Work*. Human Resources Development Canada.

³¹⁵ Quality of life in GPIAC's research generally refers to achieving the various standards outlined in its comprehensive index of progress, See Pannozzo, L., Colman, R., (2004). *GPIAC, Working Time and the Future of Work in Canada*. Retrieved: July, 21, 2007. Website: <http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>

³¹⁶ Damage to the communities and the environment generally refers actions the negatively effect social or environmental systems described in other parts of GPIAC's index of sustainability.

GPIAC's analysis of communities in the Maritime Provinces of Canada concludes that all of these indicators have not been satisfied, and in fact often have grown worse in recent years³¹⁷. Also, GPIAC's analysis focused on the impact of long working hours and other problems associated with it. This aspect of the analysis has revealed a number of empirically measurable trends affecting both the well being of individuals and of communities as a whole. Amongst such findings GPIAC's study noted the increasingly polarized nature of work time in that some workers are putting in large amounts of over time while others are working less than average hours or not at all.³¹⁸ As substantiated through a number of sources, GPIAC attributes this development in the discrepancy in working hours to the following causes:

- Growth in part-time jobs exceeded the growth in full-time jobs in the 1990s, contributing

To the growth in short hours.²⁰

- The increase in long work hours, particularly between 1976 and 1997, could be partially

Due to the fact that between 1989 and 1997, self-employment accounted for nearly 80% of

Net employment gain in Canada and the self-employed tend to work long hours.

- The growth of moonlighting contributed to long hours.

- Growth in school attendance coupled with growth in part-time jobs held by students

Contributed to the growth in short hours.

- There has been a marked shift toward service industries where hours are polarizing and

where shorter hours are more prevalent.

- Industries where hours are decreasing tend to be characterized by a relatively unskilled

³¹⁷ These assertions are based upon the discerned influence of the observed work patterns on other factors such as health outcomes or social factors such as divorce. Also, the authors compare existing trends to historical data.

³¹⁸ Pannozzo, L., Colman, R., (2004). GPIAC, Working Time and the Future of Work in Canada, GPIAC. Retrieved: July 21, 2007. Website: <http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>

work force receiving low wages.

- The adoption of "lean production" and "just-in-time" methods by employers means they need to be able to adjust quickly to changes in demand for products, and therefore may use either more overtime hours among existing employees or hire more temporary contract workers (who tend to work short hours) to meet fluctuations in demand. In either case, the new production methods militate against the standard workweek and tend to favor a polarization of hours.
- Trade globalization and increasing competition with cheap labor countries has forced many firms to shed full-time employees in an effort to reduce costs and to replace them with part-time, contingent workers characterized by low pay, insecurity, lack of benefits, and lack of worker autonomy.

GPIAC's analysis also concludes that both individuals and families are on average working more hours than in the past, and that trends in part-time employment, second jobs, overtime and unemployment all have contributed to an expansion of working hours in the Atlantic provinces of Canada.

After GPIAC's assessment of the state of work time in Atlantic Canada, the analysis then shifts to the effects of long working hours on society and the economy. GPIAC generally concludes that the actual cost of overwork has been invisible for the following strangely coinciding reasons:

- Health care costs, spending on prisons and other justice costs, and spending related to the breakdown of families (divorce, for instance) are currently counted as direct contributions To the GDP.
- Production losses due to unemployment, underemployment, or fatigue and errors resulting from excessively long work hours represent potential lost production that

depresses the GDP, but these costs are not made explicit. Because these production losses do not register anywhere in our current measures of progress, our conventional measures can provide no estimate of the degree to which these losses limit our economic potential.

Regardless of the failure of conventional indicators to assess the effects of overwork accurately, GPIAC attempts to assess the impact of overwork on both individuals and the communities of Atlantic Canada

In terms of individuals, GPIAC notes that that overwork has been associated with the following stress-related symptoms in workers³¹⁹:

- increased risk of heart disease
- sleep difficulties
- increased tiredness
- Sexual disorders
- Gastric disturbances
- Headaches/migraine
- Backaches
- Dizziness
- Weight loss or weight gain

³¹⁹ (A) London Hazards Centre (1994). *Hard Labor. Stress, Ill-health and Hazardous Employment Practices*.

(b)“Sandwich employee” is a phrase used for a woman who experiences pressure from both sides of the family dependence scale, and who takes care of both young children and elderly parents.

(C) Christopher, H. Duxbury, L. (2002). *The 2001 National Work-Life Conflict Study: Report One*.

Health Canada. Ottawa. p. 4. Retrieved: September, 3, 2002. Website: <http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/work-travail/>.

(d) Canadian Policy Research Networks (2001). New Data Show Increasing Conflict Between Work and Rest of Life. *Networknews*. 16 (1).

- Increased incidence of accidents
- Apathy
- Depression
- Irritability, intolerance, boredom, cynicism
- Burnout

Although it is difficult to assess the direct cost of these factors in finite monetary terms, GPIAC uses statistics related to absenteeism to conclude that work-related stress due to long hours cost Atlantic Canada \$70Million (Ca.) in 2001 in paid sick leave alone. GPIAC also notes that this statistic does not include losses to the GDP based upon worker output and other economic activity.

GPIAC's analysis of the effects of workplace stress also examined how individuals balance their personal lives with work. GPIAC findings conclude that long hours have effected the work-life balance in the following ways.

- Throughout the 1990s a greater percentage of Canadian workers assumed more responsibilities (i.e. the number of working women, dual-earner and single-parent families, sandwich employees), and employees with responsibilities for elder care increased over the decade).
- Labor market changes and technological changes increased job insecurity, elevated work demands, and blurred the boundary between work time and family time.³²⁰
- More stress – now twice as prevalent as it was 10 years ago.
- Increased absenteeism – employees experiencing high levels of work-life conflict are

³²⁰ Christopher, H., Duxbury, L. (2002). *The 2001 National Work-Life Conflict Study: Report One. Health Canada. Ottawa. p. 4.* Retrieved: September 3, 2002. Website: <http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/work-travail/>.

- away from work three times as often as those with low work-life conflict.
- Lower job satisfaction – job satisfaction among workers has decreased by nearly 30% since 1991.
 - Lower commitment to employers – survey results show that employee commitment has decreased by 24% since 1991.³²¹
 - Health effects on stressed individuals and their partners, including depression, burnout, and heart disease, as well as numerous other stress-related disorders;
 - Organizational costs, including higher absenteeism and lower productivity;
 - Costs of family breakdown (lawyers fees, lost productivity in the work place, human costs, societal costs, and further health costs);
 - Effects on children (short and long-term health effects, and adverse psychological and learning impacts of "parental deficit" and family breakdown, including the long-term costs associated with children being socialized by television sets instead of by their parents);
 - Costs associated with increased drug and alcohol abuse;
 - Long-term societal costs associated with the deterioration of family life due to increased parental absence from the home.

Aside from stress-related illness, GPIAC's analysis also notes that the average amount of leisure time for Atlantic Canadians is on par with Americas and decreased over the time studied³²². This decrease in leisure is inversely proportional with the average gain in working hours. GPIAC concludes that decreases in leisure will likely act as a compounding variable when combined with work-related stress. In addition to

³²¹ Canadian Policy Research Networks (2001). New Data Show Increasing Conflict Between Work and Rest of Life." *Networknews*. 16(1).

³²² Pannozzo, L., Colman, R., (2004). *GPIAC, Working Time and the Future of Work in Canada*. GPIAC. Retrieved: Jul 21, 2007, Website: <http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>

stress- and leisure-related topics, GPIAC's analysis also focuses on the cost of unemployment, social inequality and health outcomes as a function time spent working. Specifically, GPIAC's analysis of these factors concluded that social and economic inequality is a significant contributing factor to the expansion of working hours in lower income groups. Also, GPIAC's analysis makes the case that economic inequality contributes to added social costs in terms of poverty and stress-related health outcomes since poorer workers tend to hold more second jobs, work longer hours, and are exposed to conditions that promote negative health outcomes. Finally, GPIAC's analysis of the work time dynamic of the Atlantic Provinces concluded that the cost of unemployment in the Maritime Provinces, substantial at an estimated to be \$5.8 billion (including governmental, economic and social losses). As the tables set forth below illustrate the costs of unemployment are widely underestimated since they fail to consider the indirect costs of such circumstances on individuals and communities.

Table 3.1: Summary of Economic Costs of Unemployment, Nova Scotia, (\$Ca.)5.8-6.2 billion).³²³

Losses	Based on 9.7% Unemployment Rate (using hypothetical 0% unemployment base rate)	Based on 14% Comprehensive Unemployment Rate (using hypothetical 0% unemployment base rate)	Based on 9.7% Unemployment Rate (using hypothetical 3.5% unemployment base rate)	Based on 14% Unemployment Rate (using hypothetical 3.5% unemployment base rate)
1. Output loss	\$4,900	\$7,100	\$3,100	\$5,300
2. Fiscal costs				
• Employment Insurance	\$525.0	\$525.0	\$525.0	\$525.0
• Social Assistance outlays	\$251.0	\$251.0	\$251.0	\$251.0
• Lost Direct Taxes	\$153.0	\$220.0	\$108.0	\$175.0
• Lost Indirect Taxes	\$3.2	\$4.5	\$2.2	\$3.6
TOTAL	\$5.8 billion	\$8.1 billion	\$4.0 billion	\$6.2 billion
Cost per capita	\$6,153	\$8,592	\$4,243	\$6,577

³²³ Pannozzo, L., Colman, R., (2004). *GPIAC, Working Time and the Future of Work in Canada*. GPIAC. Retrieved: Jul 21, 2007, Website: <http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>

Notes:

- Some of the data used to derive these calculations were from 1999, while others were from 2000 and 2001. In all cases the most recent data were used. All dollar amounts were converted to \$2001 for consistency, using Statistics Canada Consumer Price Index.
- Some of the costs in Table ES3 are borne by the province and others, such as employment insurance and lost federal income taxes, are borne by the country as a whole.
- Data on social assistance were not included in the calculations for direct/indirect taxes lost due to the unavailability of data. Those on social assistance would pay some taxes and these have not been included in the calculations above.
- Use of hypothetical 3.5% unemployment base rate in keeping with the Canadian Centre for Policy Alternatives' paper on the *Real Cost of Unemployment in Canada*, , and assumes that even in a situation of “full employment,” there will always be some people between jobs who are on the unemployment rolls. However, the experience of some countries like the Netherlands, which have experienced rates of unemployment below 3%, indicates that the CCPA’s 3.5% base unemployment rate may be too high.
- Numbers have been rounded.
- Population figure for N.S. in 2001, used to calculate per capita costs, was 942,691 (N.S. Department of Finance, Statistical Review, 2002).

Table 3.2: Summary of Social Costs associated with Unemployment in Nova Scotia (\$2001).³²⁴

Social Cost Category	Low End Estimate (9.7% Rate)	Higher End Estimate (14% Rate)
Disease	\$182 million	\$256 million
Family breakdown	\$10 million	\$14 million
Crime	\$60 million	\$130 million
Human capital losses	Not estimated	Not estimated
TOTAL	\$252 million	\$400 million

It is noteworthy that GPIAC's analysis of work time in Atlantic Canada concludes by advocating that a reduced work week along with a number of other structural reforms would help in reducing all of the negative outcomes noted in the analysis. Aside from the

³²⁴ Pannozzo, L., Colman, R., (2004). *GPIAC, Working Time and the Future of Work in Canada*. Retrieved: July, 21, 2007. Website: <http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>

Notes:

** Low end and high end crime cost estimates were derived from the "conservative" (direct cost) and "comprehensive" cost estimates provided in Dodds and Colman (1999), op. cit., as explained in Chapter 9 of final report, rather than by including discouraged and underemployed workers in the higher end estimates. In this case, therefore, an unemployment rate of 9.7% was used to derive both the \$60 million and \$130 million estimates.

- Numbers have been rounded.
- Human capital includes the education, skills, and health of the population. A deterioration of any of these assets can adversely affect productivity and the ability of the human economy to produce goods and services in the future. The longer one is without work, for instance, the greater the chance that one's skills will deteriorate or, in conventional accounting language, depreciate. While methodological challenges have prevented the assignment of a monetary value to the costs associated with the loss of human capital due to unemployment, it should be emphasized that these costs are likely to be very significant. Therefore the total cost estimates in Table 4 above should be considered underestimates of the true or full social costs of joblessness.
- Due to the use of different sources, 2001 joblessness rates were used in conjunction with 1997 crime data, 1998 divorce data, and 1998 health data. Please see the health, family breakdown, and crime cost sections of Chapter 9 of final report for a detailed explanation of data sources used to calculate costs.

specifics of GPIAC's analysis and conclusions, it is also possible to gain from their analysis by means of the systematic and yet broad nature of their study. Considering the breadth of the issues at hand, GPIAC's analysis provides a useful example of how it is possible to address a complex issue such as work time in a broad and yet meaningful way. For the greater issue of time use and sustainability, GPIAC's research provides some basis for the analysis performed here, both in terms of theory and methodology. Also, GPIAC's time use research appears to substantiate the claim that equity in time use is tied to a number of other structures, whether they be social, environmental or economic, that involve sustainability.

The American Experience: A discussion of observed trends and likely patterns.

As discussed in the history of work time and sustainability in the United States, most research on time use dynamics has examined economic, cultural, structural and environmental factors. Generally, it is relatively broadly accepted that working hours are longer and other indices of time use are less equitable in the U.S. than in other countries³²⁵. Although it is useful to possess this knowledge, it is more useful in the present analysis to contextualize this information into a framework that explains why certain time use patterns occur. Regarding the contemporary situation, a number of relationships have either been directly observed in research or are likely based upon a theoretical understanding of the situation.

³²⁵ Typically, this assertion is made when considering the relatively high number of hours worked in the U.S. along with its lack of any legally defined vacation or sick leave. Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

Considering that this work is a first attempt at connecting time use and sustainability, there is little precedent in terms of a discussion of methodology or theory that integrates the topics at hand. The United States can serve as an example regarding how time use and various other components of sustainability are related. In general, there are two points to keep in mind relative to such a discussion. First, this discussion is intended to provide an intermediary structure between individual elements and the cumulative nation-wide indices used in the analysis. Secondly, although this discussion focuses on the United States,³²⁶ the relationships and structures discussed may be applicable to other nations as well.

The contemporary work and time use situation is the result of the confluence of a number of economic and social trends. In general, the current situation continues a relatively consistent trend that began in the early to mid 1970's and has persisted. What has typified this trend are increased working hours and levels of material consumption combined with a decrease in actual earning power and the overall stability of an average individual's economic and social position. This trend reflects much of the popular consensus about the nature of work, time use and economics in contemporary American society.

Competition Domestically and Abroad

³²⁶ There are two primary reasons for restricting such discussions to the United States. First, the U.S. possesses the most extensive data and research available relative to the topics at hand. Second, in the interests of brevity a discussion of similar factors in other nations would be lengthy, tedious and somewhat redundant. It must be noted that it is ideally useful to draw from a number of sources.

The overall increase in competition in the American economy can be attributed to two primary factors: (1) an increase in the amount of international economic competition has taken place: and (2) while the second relates to various domestic developments in the American economic system that has taken place. American business has been challenged abroad by two distinct economic trends. The first is competition from highly developed industrialized nations, while the second is increased competition from the developing world.

In terms of challenges brought on by developed economies such as those of Japan and Western Europe, we find that they have successfully competed with America by producing high quality goods often at a lower cost than their American counterparts. This success can be attributed to a number of causes, including massive state investment in the economy, universal social programs such as health and education, along with a social ethic that favors reinvesting in economic and social infrastructure rather than using profits to increase the compensation of executives or share holders³²⁷. This competition has led to a number of American businesses, manufacturing industries in particular, either failing or significantly downsizing their operations in United States³²⁸. Also, it is somewhat ironic to note that many of the industrialized countries America has been competing with maintain policies that ensure significantly shorter work weeks and longer vacations for workers.

³²⁷ Anderson, S., Cavanagh, J., Collins, C., Pizzigati, S., (2007). *Executive Excess 2007: The Staggering Cost of U.S. Business Leadership*. Institute for Policy Studies.
Bettis, A., Bradley, S. P., Hamel, G., (1992). Outsourcing and Industrial Decline. *The Executive*. 6(1). 7-22.

Although first world industrialized countries have competed with America based upon producing highly quality goods and efficient economic organization, developing economies have used a different logic. Much of what has made them competitive with the United States has been their ability to maintain poor working conditions beyond what would be tolerated by first world workers. For instance, working hours and pay in many developing countries are similar in nature to those experienced by factory workers at the beginning of the industrial revolution,³²⁹. Also, developing economies are for the most part afforded the luxury of having a cost of living that is well below those of the first world,³³⁰ and countries such as China maintain highly protectionist trade policies³³¹ which tend to exclude American goods and services. It can often be the case that a laborer in a developing country can make a decent day's wage by the standards of that country that would hardly be one hour's work at minimum wage in the first world.

In addition to this, countries such as India and China have neglected environmental and safety standards in favor of promoting economic growth³³². Thus, commodities produced in these economies do not contain the inherent cost of environmental or worker protection. Finally, some countries such as China have

³²⁹ Skarbek, D., Powell, B., (2004). *Working Paper #53, Sweatshops and Third World Living Standards: Are the Jobs Worth the Sweat?* The Independent Institute. Retrieved: August, 8, 2007, Website:

http://www.independent.org/publications/working_papers/article.asp?id=1369

³³⁰ Krugman, P., Venables, A. J., (1995). Globalization and the Inequality of Nations. *The Quarterly Journal of Economics*, 110(4), 857-880.

³³¹ Zeng, K., (2007). *China's Foreign Trade Policy: The New Constituencies*. Routledge.

³³² Waldo, D., Parks, A. C., (2000). Caught in the crossfire: Third world economic development and first world environmentalism. *Journal of Third World Studies*, Fall.

intentionally devalued their currency so that their products will be cheaper abroad³³³. The ultimate effect of this combination of factors has been to create a flood of inexpensive goods with which American manufacturers cannot realistically compete. Although these products are often of inferior quality, their price makes them so attractive that many American businesses, and for that matter other first world countries, cannot compete with them. The ultimate effect of this competition has been to export many American manufacturing and service sector jobs abroad while replacing American made goods at home with foreign ones³³⁴. Ironically, it is also noteworthy that this trend seems somewhat self-perpetuating since the demise of high paying domestic jobs will generally compel American consumers to buy inexpensive foreign goods and thus support America's economic rivals.

The failure of American business to compete with foreign counterparts has also a number of direct and indirect effects on workers and the amount of time they spent at work. Critics charge that foreign competition has resulted in a reduction in wages and benefits with a simultaneous increase in hours. The trends reflect American business's desire to compete with foreign rivals and American workers' desire to retain some type of employment regardless of how compromising it might be. Foreign competition may also have created a siege mentality among American workers that has been subsequently

³³³Bivens, J. L., Scott, R. E., (2006). *Memorandum #116, China Manipulates Its Currency—A Response is Needed*. Economic Policy Institute.

³³⁴The Bureau of Labor Statistics Estimates that 3.3 million jobs have been lost to oversee outsourcing in the past 15 years. The Bureau of Labor Statistics (2007). Retrieved: August, 16, 2007. Website: <http://www.bls.gov/mls/home.htm>. Also, see analysis for information regarding current levels of importing and industrial production both of which confirm such hypotheses.

exploited by employers standing to gain from such sentiments.³³⁵ Specifically, since most workers are aware of the threat of foreign competition, they may be hesitant to demand higher wages, better benefits or reduced working hours.

Cost of living, rent seeking and institutional capture

Developments in the economy, technology and the level of consumption may be contributing to an increase in the average number of hours a typical American works³³⁶. It is commonly argued that the average American worker today must work more hours than before in order to maintain a basic standard of living³³⁷. Such trends are substantiated by the increased cost of basic necessities such as housing, health care and transportation in recent decades^{338 339}. Although improvements in the American standard of living undoubtedly have their benefits, they do come at a price. As the tables 2.6 and 3.7 and 3.8 below demonstrate, Americans now have larger homes, own more cars (and drive them more), and eat out more than at any time in the past.

³³⁵ Lenard, C., (2009). *For many workers, fear of layoff is a big motivator*. AP business. Retrieved: June, 20, 2009. Website:

http://marketplace.publicradio.org/apheadline_detail.php?story_id=D98LR5RO0&group=ap.online.headlines.business, This piece notes Department of Labor Data that suggest productivity rises when there is a down turn in the labor market.

³³⁶ It is difficult to place an exact number on this situation. Schor J. (1993). *The Overworked American*. Basic books. and others have noted that worker productivity has steadily increased such that it now takes 23 hours of labor to produce what was produced with 40 in 1975, and 11 hours to produce what was made with 40 hours of labor in 1950.

³³⁷ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

³³⁸ U. S. Bureau of Labor Statistics (2007). *Consumer Price Index 1980-2005*. Retrieved: June 16, 2007. Website: http://www.census.gov/compendia/statab/2007/prices/consumer_price_indexes_cost_of_living_index.html

³³⁹ Steckel, R. H., (2005). *A History of the Standard of Living in the United States*.

Retrieved: June, 18, 2007. Website: <http://eh.net/encyclopedia/article/steckel.standard.living.us>

Table 3.3: Average size of new single family home³⁴⁰

Year	1950	1970	1990	2004
Home Size	983 sq ft	1500 sq ft	2080 sq ft	2300 sq. ft

Table3.4: Automobile ownership and use³⁴¹

Vehicles and Vehicle-Miles per Capita, 1950–2005^a

Year	Vehicles per capita	Vehicle-miles per capita	Vehicles per civilian employed persons
1950	0.286	3,017	0.74
1960	0.377	3,994	1.03
1970	0.481	5,440	1.25
1980	0.615	6,722	1.41
1990	0.718	8,590	1.51
2000	0.756	9,734	1.56
2005	0.802	10,087	1.68

Table 3.5: Average Commercially Prepared Meals Per Week³⁴²

Year	1981	2000
Meals Per Week	3.7	4.2

Although some of these advances, such as consumer goods such as computers, enhance the quality of our lives both relative to comfort and economic potential, other indicators of progress have done little to tangibly improve most people’s quality of life. Many have questioned whether the additional income required to own a second car, a

³⁴⁰ American Association of Home Builders (2006). *House Facts Figures and Trends*. Retrieved: August, 15, 2007. Website: www.NAHB.org/publication-details.aspx.publication?2028.

³⁴¹ United States Bureau of the Census (2007). *Resident Population and Civilian Employed Persons – U.S. Department Of Commerce, Statistical Abstract of the United States 2007*. Retrieved: July, 18, 2007. Website: Census.gov.

³⁴² American Restaurant Association (2002). *Meal Consumption Behavior*. Retrieved: September, 16, 2007. Website: <http://www.restaurant.org/rusa/magArticle.cfm?ArticleID=138>

larger house or even a vacation home are worth the additional effort when the owner has little time to enjoy the fruits of their labor³⁴³.

Institutional Factors

In addition to the standard of living, structural aspects of the economy may have contributed to an increase in the cost of living and hence working hours. A number of industries have developed organizational mechanisms that artificially raise prices by either applying non-essential elements to the cost of products or by creating rent seeking quazi-monopolies that artificially raise the price of goods for the average American consumer. To understand how these economic institutions have developed it is possible to use the examples of the energy, real estate, and healthcare industries to demonstrate how consumer costs are elevated and consumers are effectively forced to allocate larger amounts of their income to pay for goods and services whose price is inflated beyond what they actually cost to produce or provide.

In general, there are a few traits of the economic organizations in question that can be found in all instances discussed. First, many of these markets are tightly controlled by either professional organizations or a close alliance of businesses that effectively set prices and lobbies for various government protections or subsidies to solidify their position in terms of market dominance. Second, these industries possess such a level of dominance over a market that alternatives are few and seldom sought out. Thus, consumers are forced to rely upon these service providers and to pay the premium that they charge.

³⁴³ Baudrillard, J., (1998). *The Consumer Society: Myths and Structures*. Sage.

Energy

The energy producers in America provide an excellent example of an industry that has, in many respects, expanded its markets to the highest possible level of consumption as opposed to seeking efficiency and alternatives. Most Americans are dependent upon devices that require large direct or indirect inputs of energy, much of it from fossil fuels³⁴⁴. The dependence emerges in a number of ways ranging from American's reliance on the personal automobile for transportation to our use of large, energy-intensive houses and constant consumption of goods that require extensive energy inputs. Although it can be argued that Americans have paid relatively small portions of their income to cover their energy expenses, we have developed a system that requires individuals to make constant energy inputs along with a trend towards greater consumption and dependence upon commercial energy sources.

An excellent historical example of how this energy dependence has been fostered is the early attempts of automobile and oil interests to buy out and then cut or eliminate public transportation systems so as to foster both the consumption of automobiles and gasoline to fuel them³⁴⁵. Although this example represents a direct attempt at promoting consumption of energy-intensive products there have also been a number of other less apparent examples. For instance, the marketing of large sport utility vehicles along with cultivating an appetite for large status oriented houses have also contributed to high

³⁴⁴ United States Department of Energy (2007). *Energy in the United States: 1635-2000*. Retrieved: June, 15, 2007. Website: <http://www.eia.doe.gov/emeu/aer/eh/frame.html>

³⁴⁵ Black, E., (2006). *Internal Combustion: How Corporations and Governments Addicted the World to Oil and Derailed the Alternatives*. St. Martins Press.

levels of energy consumption³⁴⁶. Ultimately, the message of advertising of this nature is that people should not worry about conserving energy and that they should consume as much as they want. This along with any other number of instances found throughout contemporary culture provides substantial proof as to how the energy industry has promoted the excessive use and lack of conservation of energy resources.

What is disturbing about this, especially considering the rising price of energy along with our long-term comprehension that we are using non-renewable resources, is that it promotes a system that adversely affects both individuals and society at large. In terms of individuals, if we lived in an economic system that promoted true cost reduction along with conservation (as opposed to our current consumerist mentality) most people would have other, less costly and less energy-intensive options available to them. However, the present state of energy consumption mostly ignores the need for such options and thus effectively compels most people to consume more energy than they might if given other options.

Also, on a societal level we find that that energy interests have helped to create a system of both immediate dependence and long term peril through a physical and social infrastructure that is inefficient and extremely difficult to modify. In terms of dependence, the energy infrastructure of contemporary American society is such that there is little room for alternatives in the short run. Thus, most people are dependant upon automobiles, air travel, and various other energy-intensive systems such as home heating oil and air conditioning. Since infrastructure, both in terms of transportation and

³⁴⁶ Brown, M. J., (2006). *Debunking the Green Building Myth*, *E Magazine*. Retrieved: June, 15, 2007. Website: <http://www.alternet.org/story/42827>

how communities are structured, is relatively static, even if policies changed today modifying the present situation a number of decades and tremendous effort would be required for progress toward sustainability be made. Although many people are not fully aware of the connection between industries such as energy and the amount of time the average worker needs to make a living, the relationship becomes extremely relevant for a society-wide analysis.

Real estate

The contemporary real estate market represents another instance of a sector of the economy in which the value, relative to affordability and supply, of goods being sold is often significantly less than the price being paid for them. It is possible to attribute a number of causes to these phenomena. First, the majority of the real estate market is controlled by the National Association of Realtors (NAR). Much like any number of industry associations, the NAR is essentially a cartel that exerts a significant amount of control over its members and the market at large. Specifically, a number of studies³⁴⁷ have noted the NAR's influence in setting prices either via regulating access to multiple listing services, charging commissions and sanctioning members who attempt to be competitive in their pricing. Aside from the influence of the NAR on real estate prices,

347 Makinac Center for Public Policy (2005). *Commentary on 2005 House Bill 4849 (Prohibit certain limited real estate marketing services)*. Retrieved: August, 12, 2007. Website: <http://www.michiganvotes.org/2005-HB-4849>.; Zumpano, L. V., (1988). The Real Estate Brokerage Market: A Critical Reevaluation. *Real Estate Economics*, 16(1), 1-16. Zumpano, L. V., Elder., H. W., (1994). Economies of Scope and Density in the Market for Real Estate Brokerage Services. *Real Estate Economics* 22(3), 497-513.

some price inflation results from sellers who take advantage of low interest rates and raising the asking price of their property well beyond what they paid for it³⁴⁸.

Also, banks and other financial institutions have a stake in keeping prices as high as possible since they will profit from higher mortgage payments and other forms of financing related to the value of the property being sold. This tendency is exacerbated because one of the few forces driving down prices is the residential property consumer, who often is uninformed and inexperienced in terms of negotiating transactions. It becomes evident that there is a significant force driving the real estate market to raise prices to the highest level of affordability until the underlying structure of the market collapses and the price bubble pops³⁴⁹.

This becomes particularly evident when one takes into consideration actual cost of construction and land in most areas, the number of properties on the market and the average income in many communities where real estate prices have far outstripped affordability³⁵⁰. One method of measuring this is to consider the relative price inflation as described in the Case-Schiller house price index for some data for selected years covering the 2000-2007 housing bubble. The Case-Schiller index measures changes in sale prices for real estate over a given period of time. Also, more systematic research

³⁴⁸ Baker, D., (2006). The Menace of an Unchecked Housing Bubble. *The Economists' Voice*, 3(4), Article 1.

³⁴⁹ Case, K. E., Schiller, R. J., (2003). *Is There a Bubble in the Housing Market?* Brookings Institution.

³⁵⁰ Baker, D., (2006). The Menace of an Unchecked Housing Bubble. *The Economists' Voice*, 3(4), Article 1.

suggests that real estate prices have historically, despite temporary bubble and declines, been stable until the last 10 years when significant market disruptions have occurred³⁵¹.

Table 3.6 Case Schiller Index for Selected Years³⁵²

Year	Case Schiller Value³⁵³
1987	62.03
1989	72.03
1991	73.43
1993	74.46
1995	77.74
1997	81.82
2000	100.00
2002	118.00
2004	146.26
2006	189.93
2007 Q1	184.77
2007 Q4	170.21
2008	139.18
2009	128.18

Additionally, there is evidence to suggest that part of the overall decline in affordability is the consequence of developers emphasizing profitable high-end properties while largely ignoring more affordable housing. These artificially high prices ultimately raise the cost of living for most people to a point where they are continually struggling to afford overpriced goods that, if influenced solely by basic market forces, would be well

³⁵¹ Schiller, R. J., (2006). *Irrational Exuberance*. Random House.

³⁵² Standard and Poors (2008). *Case Schiller Index*. Retrieved: June, 23, 2009. Website: http://www2.standardandpoors.com/portal/site/sp/en/us/page.topic/indices_csmahp/0,0,0,0,0,0,0,0,3,1,0,0,0,0,0.html

³⁵³ This number notes the inflation adjusted relative value of a house relative to a base year (2000).

within the range of affordability. The real estate market in America, especially since the housing boom of 2004, represents a classic example of institutional market capture and rent seeking which, when viewed in terms of a rational and efficiently operating society, can only be perceived as having a negative impact on things.

Health care

America's health care industry represents another sector of the American economy that operates at a cost far in excess of the value of the goods delivered³⁵⁴. Institutional structures dominate the health care market in a similar fashion to real estate; however, the healthcare industry cannot be seen as being controlled by a monopoly-like cartel such as in real estate. Instead, we can view the healthcare system in America as being driven by economic and institutional oligarchies that either inflate or add a significant operating cost to the delivery of services. The most telling example of this is the effect of the insurance industry on the cost of healthcare in the United States. By most estimates³⁵⁵ insurance company and health management organization oversight in America adds an additional 30-50% to the cost of healthcare through administrative costs and profits. What this, along with a number of others factors such as the increase of for profit medicine in America, has done is to increase the cost of health care delivery far

³⁵⁴ One method of noting the value of healthcare is to consider the cost per capita and health outcomes from other industrialized countries

³⁵⁵ Woolhandler, S., Campbell, T., Himmelstein, D. U., (2003). Costs of Health Care Administration in the United States and Canada. *The New England Journal of Medicine*, 349(8), 768-775.

above what any other industrialized countries spends³⁵⁶. The rate of increase in healthcare costs has consistently outpaced the rate of inflation in the past decade³⁵⁷.

The healthcare system consequently contributes to longer working hours in two ways. The first way relates to the basic increase in the cost of health care. Obviously, if the price increases well beyond the rate of inflation the average wage workers will either need to devote additional hours to work or suffer a decrease in their standard of living. Second, there is a less direct relationship between healthcare and longer working hours. Since America does not universally mandate health care coverage, but instead expects employers and individuals to cover their health care costs, workers are often dependant upon their employers for health care coverage. Considering the competitive nature of the work place along with the substantial increase in healthcare costs, many workers have a strong incentive to tolerate longer working hours along with a number of other compromises to their quality of life so as to ensure that they and their dependants do not go without healthcare. Also, along these lines it is also conceivable that insurance with pre-existing condition exclusions makes a worker with a serious health issue reluctant to change jobs since they might lose their coverage.

In all of the above-mentioned instances of the healthcare, real estate and the energy industries we find examples of how the American economy has developed in such

³⁵⁶ Davis, K., Schoen, C., Stephen, C., Schoenbaum, S. C., Doty, M., M., Holmgren, A. L., Kriss, J. E., Shea, K. K., (2007). *Mirror, Mirror on the Wall: An International Update on the Comparative Performance of American Health Care*. The Commonwealth Fund.

³⁵⁷ Borger, C., Smith, H., Truffer, C., Keehan, S., Sisko, A., Poisal, J., Clemens, M. K., (2006). Health Spending Projections Through 2015: Changes on the Horizon. *Health Affairs Online*, 25(2), 61-73. Retrieved: August, 17, 2007. Website: <http://content.healthaffairs.org/cgi/content/abstract/25/2/w61>.

as way as to foster a number of rent seeking relationships. These relationships increase the overall cost of goods while ultimately compromising the welfare of society and individuals in any number of ways, including pressuring people to work longer hours so as to be able to afford the inflated price of these goods or consume more than is necessary³⁵⁸. An important question regarding sustainability and policy, broadly speaking is: If we were to design an economic system and the policies that govern it based upon the requirements of sustainability and equitability, how would such a system differ from the present one? It is likely that such a system would differ significantly from the present one. Also, it would be useful to ask: what is inhibiting such change? It is relatively apparent many institutions in America have developed a certain level of inefficiency relative to serving the needs of population and contributing to sustainability.

Technology and the cost of living

Certain technological developments have had an effect that is similar to that of the economic institutions discussed above. Specifically, the increasing level of technological sophistication along with a dependence on product cycling and planned obsolescence has contributed to an economic system of dependence that often encourages individuals to allocate large amounts of their incomes to keep pace with technological progress and replace those items which have prematurely become obsolete.

As society becomes more technologically sophisticated people are pressured to use and consume increasingly complex and sophisticated technology. For instance things

³⁵⁸ Two good examples of this are found in housing and automobiles as mentioned before both have increased in cost and size.

such personal computers, cell phones and other electronics fit into this category since they have become indispensable to our lives. Although there are certain advantages in terms of productivity, efficiency and quality of life, the use of such technology also comes at a substantial price. It possible to connect this increased need for technology with an increase in hours spent working by noting the additional cost that such technology adds to the average worker's budget. Considering the ever-increasing variety and complexity of technology, ranging from personal GPS devices to cellular phones, one can easily conclude that technology is playing a greater role in our lives compared to times in the past. In terms of its greater impact on society, this expansion in technology helped raise the cost of living for the average individual through creating a system that is dependant upon the creation and integration of new technology into everyday life.

Planned obsolescence

Planned obsolescence represents another aspect of modern technology that contributes to long working hours. The basic concept of planned obsolescence is that products are designed to have a fixed lifespan, and at the end of that life span the product is effectively useless, thus requiring the consumer to buy a newer version of the obsolete product³⁵⁹. It is also possible to expand this basic theory to three distinct forms of planned obsolescence. The first is functional obsolescence, which implies that a device can predictably fail at a certain age and is not cost effective to repair. An excellent example of this would be most consumer electronics or production models of most

³⁵⁹Beder, S., (1988). Is planned obsolescence socially responsible? *Engineers Australia*, November, 5.

automobiles. In both instances these items often reach a point where it is cheaper to replace the old item with a new one rather than repair it.

The second type of planned obsolescence is known as technological obsolescence. Technological obsolescence refers to intentionally producing goods that, although functional, will prove to be technologically incompatible with new items. An excellent example of this is personal computers that are designed to run on a certain operating system and become largely obsolete when a new operating system is introduced. Objective based engineering can be seen as the third distinct form of obsolescence.

Objective-based engineering refers to designing products to adhere to a narrow set of criteria that often disregards the durability and long term usefulness of a product. Hybrid automobiles are a very prominent example of this type in that they are designed for maximum fuel economy while their design pays little attention to their durability and complexity³⁶⁰. Specifically, if we compare a conventional compact car to a hybrid the conventional automobile has several clear advantages. First the hybrid's life is effectively limited by the life of its batteries whereas the conventional automobile can be made to run indefinitely with basic maintenance. Second, many systems that hybrids use such as the braking and steering system are significantly more complex and hence almost impossible to repair given the skills of the average mechanic. Thus, a consumer that buys a hybrid vehicle or another product that is designed in such a manner effectively commits himself to replacing the product after a fixed period of time.

³⁶⁰CNW Research (2007). *'Dust to Dust' Automotive Energy Report*". Retrieved: June, 10, 2007. Website: <http://cnwmr.com/nss-folder/automotiveenergy>.

When we consider all of the products that incorporate some form of planned obsolescence we see that most Americans spend a substantial part of their work time supporting the replacement of goods that are intentionally made to become obsolete. In light of this it we should question: How much less would the average worker need to work if products were made to be as maintainable and as durable as possible?

Also we might relate the issue of planned obsolescence, and for that matter rent seeking in economic institutions, back to Durkheim's theory of the division of labor. In an idealized system, specialized design and specialized expertise would be used to make society more efficient; however, both professionals and the specialized products that they produced have developed in such a manner as to challenge the overall efficiency of society and to place a large burden on individuals. Although a number of technological and economic arguments may help explain why the modern American economy has developed in a way that mandates long working hours, the ultimate explanation for such a system is found largely in the normative economic concept of consumerism coupled with a very unequal distribution of resources.

Consumerism

Consumerism as an economic theory forms the basis for much of the modern American economy. The basic premise of consumerism is that the economic vitality of a society is driven through the repetitive consumption of goods or services.³⁶¹ It is assumed that through this process of consumption the overall status of the economy is

³⁶¹ Veblen, T., (1899). *The Theory of the Leisure Class: an economic study of institutions*. Dover Publications.

improved through a mutual transfer of monetary resources. For instance, the consumption of a certain good provides the economic livelihood of its producer who then uses his income to procure goods and services from other providers who in turn do likewise. By using this logic of exchange a consumerist model then assumes that the more products and transactions that occur, the more productive and vibrant an economy can be said to be.

Although this model of economic operation can be seen as doing much good, it does possess some negative aspects. Specifically, the consumerist model ties economic performance to an ever-increasing level of consumption. Thus, workers are left in a situation of earning more money per hour, expanding working hours, or a combination of both so as to maintain an increasing level of consumption. Also, the consumerist model assumes that quality of life is dependent upon a perpetually expanding level of consumption³⁶². Thus, what may have been considered an adequate standard of living 50 years ago is no longer considered appropriate regardless of whether such a system provided for an adequate and meaningful existence.³⁶³ Also, consumerism promotes consumption of goods or services that have little or nothing to do with actually maintaining a certain standard of living or level technological development. In essence,

³⁶² Schor, J. B., (2001). *A New Economic Theory of Consumerism*. In: Miller D., *Consumption: Critical Concepts in the Social Sciences*. Routledge.

³⁶³ One method of assessing this is to consider the increase in real incomes during the period of time in question. United States Census Bureau. (2007). *Table F-1. Income Limits for Each Fifth and Top 5 Percent of Families (All Races): 1947 to 2007. Current Population Survey, Annual Social and Economic Supplement*. Retrieved: September, 17, 2008. Website:

<http://www.webcitation.org/query?url=http%3A%2F%2Fwww.census.gov%2Fhhes%2Fwww%2Fincome%2Fhistinc%2Ff01AR.html&date=2009-04-12> Shows real incomes have steadily grown for all income groups. We can also consider the increased levels of various consumer goods such as personal electronics.

people are encouraged to consume things for the mere sake of consumption. The consumerist model of economics provides us with a view of economic activity that judges the success of individuals and societies solely based upon their ability to consume goods or services regardless of the externalities of such practices. Also, consumerist theory does not consider the long term sustainability of an economy, but merely assumes the ability to expand indefinitely.

Debt

The concept of the debt-driven economy represents one of the more prominent variants of basic consumerism. As initially postulated by Keynes, the basic premise of a debt-driven economy is that people are compelled to work, hence be economically active, so as to repay debts they accrued consuming goods produced by others³⁶⁴. The primary effect of such a system is to add an additional level of compulsion to consumerism that mandates that individuals need to work so as to maintain themselves and repay their financial obligations. It is relatively easy to see that such a system contributes to the expansion of work time through adding an additional expense to the budgets of individuals namely, interest paid on loans and the accumulation of debt for items that have not been fully paid off. As the statistics on the additional level of debt in America suggest, the perpetual obligation for most people represents a substantial portion of their income. As the figures displayed in table below suggest, Americans' debt on consumer-related items has slowly increased over time. All this amounts to \$1.7 trillion in debt for

³⁶⁴ Keynes, J. M., (1997). *The General Theory of Employment, Interest, and Money*. Prometheus Books.

the entire country³⁶⁵. In addition to this, the average mortgage debt is \$69,227, and the average student loan debt is \$16,100³⁶⁶

Table 3.7 : Consumer Debt Dollar per Capita

Year	Debt
2001	\$1,523
2000	\$1,409
1999	\$1,315
1998	\$1,235
1997	\$1,191
1996	\$1,103
1995	\$973
1994	\$845
1993	\$785
1992	\$778

Not only do these obligations create an immediate motivation for people to expand their time at work, but debt of this nature can also place a long term pressure on workers to expand their careers since they are not able to accumulate the capital to retire or take extended absences from work. Although moderately innocuous at first glance, the notion of supporting an economy through debt-related activities can prove to be dangerous when real economic progress through greater efficiency in production and the creation of wealth is replaced with investment that is leveraged against debt and the expenditure of existing assets.

³⁶⁵ National Public Radio (2003). *A Nation in Debt All Things Considered Series Explores America's Borrowing Culture*, National Public Radio. Retrieved: June 16, 2007. Website: www.npr.org/.../2003/jan/debt/index.html

³⁶⁶ Statistical Abstract of the United States (2007). *Mortgage Debt*. Retrieved: June, 14, 2007. Website: http://www.census.gov/compendia/statab/cats/banking_finance_insurance/real_estate_rental_and_leasing.html

One prominent example of this is the present economic situation in the United States. Since the late 1990's primary economic indicators in the United States have generally been improving. However, specific indicators- especially those related to individual assets- have depicted a situation in which the average individual is in an increasingly vulnerable position. Much of this vulnerability stems from the fact that a significant proportion of consumer activity has been supported through debt from credit cards and home equity loans³⁶⁷. This situation, combined with the greater issue of consumerism, can lead us to question the validity of such a way of thinking if some measures of progress indicate the success of a system while other, substantially more tangible measures depict a significantly different system

Population growth in the context of the cost of living

Factors such as immigration and population growth can contribute to an economic climate that fosters longer working hours. Immigration can have a relatively direct effect on certain sectors in the labor market while overall population growth represents a more general trend that has a number of indirect effects on people.

The debate over both legal and illegal immigration in America has been a contentious subject for the majority of the nation's history. Such debates have often focused on the cultural and economic influence that immigrants will have on American society. In recent decades the debate over immigration has focused primarily on the influence of third world migrants, mostly from South and Central America, to the United

³⁶⁷ Paul, N. C., (June, 12, 2003). Culture of Consumption. *The Christian Science Monitor*.

States. Although many of these migrants come here legally, many also enter America illegally. One of the economic concerns about these immigrants, in particular the undocumented ones, is that they will drive down the average worker's income through accepting wages lower than most American workers would accept and through increasing the number of workers involved in the economy³⁶⁸. Also, a number of observers suggest that illegal immigrants are willing to accept hours and working conditions that American workers would not tolerate³⁶⁹.

Although these claims regarding the influence of immigrants make theoretical sense, there is controversy over the amount of influence that immigrants have on the average American worker. Specifically, illegal immigrants may tend to take the positions that Americans consider undesirable (i.g., fruit harvester, meat plant worker, day laborer) and thus have little effect in terms of competition for jobs or wages in most career markets. However, considering the estimate that 11-12 million illegal immigrants³⁷⁰ and 37.1 million legal immigrants³⁷¹ presently reside in America and that roughly 1.2 million more enter each year³⁷², immigrants may affect other workers in a number of direct and indirect ways. First, immigrant labor helps set the base wage in many American

³⁶⁸ Schulman, B., (2005). *The Betrayal of Work: How Low-Wage Jobs Fail 30 Million Americans*. The New Press.

³⁶⁹ Schulman, B., (2005). *The Betrayal of Work: How Low-Wage Jobs Fail 30 Million Americans*. The New Press.

³⁷⁰ The Pew Hispanic Center (2005). Retrieved: July, 17, 2007. Website: www.pewhispanic.org

³⁷¹ United States Citizen and Immigration Service (2007). *Illegal immigration statistics*. Retrieved: July, 27, 2007. website:<http://www.uscis.gov/graphics/shared/aboutus/statistics/Illegals.htm>

³⁷² United States Citizen and Immigration Service (2007). *Illegal immigration statistics*. Retrieved: July 27, 2007. Website: <http://www.uscis.gov/graphics/shared/aboutus/statistics/Illegals.htm>

industries well below what is required to maintain an adequate lifestyle by the standards of most Americans³⁷³. Thus, low-skilled and low-paid American workers must work longer hours to be able to make ends meet. Also, immigrants create indirect pressures on American society by consuming more resources, hence driving up the cost of living and helping to comparatively lower labor wages. In terms of the impact of immigration on working hours it is possible to draw two primary connections. First, immigrant labor depresses wages and consequently contributes to longer hours. Second, immigration places an additional upward pressure on the price of various goods such as housing and other limited resources.

Population growth has several economic consequences. Although most areas in America are expanding in population, the effects felt by various regions differ significantly. In general population growth contributes to several primary and secondary trends. Primary population expansion, that is population expansion that occurs as the result of forces within an area rather than by immigration, we find that such occurs mostly in existing urban areas that have developed to such an extent as to create shortages in housing and the availability of other resources specific to the region such as water, waste removal and access to transportation. Metropolitan areas such as New York, Los Angeles and San Francisco fall under the category of regions producing primary population expansion. These areas have experienced a number of trends rooted in population expansion that can affect working hours directly or indirectly through the cost of living. The most prominent example of this is the cost of living in such areas: housing

³⁷³ Schulman, B., (2005). *The Betrayal of Work: How Low-Wage Jobs Fail 30 Million Americans*. The New Press.

and other costs are well above the rest of the nation³⁷⁴. Even when the cost of living is factored relative to the average income, the cost of living in these areas still outpaces most ordinary people's ability to pay.³⁷⁵

We must also consider the impact that population expansion has on other aspects of life. One topic that has received significant attention is the impact of sprawl on these areas³⁷⁶. Many primary urban areas have expanded in such a manner as to distribute much of their population to the surrounding suburban and exurban areas. Much of this growth has been due to overcrowding in the urban centers, and a desire to escape various urban problems, and hence a reducing the affordability of housing near these areas and many other factors. As a result commute times and traffic congestion have increased substantially in such areas. As a number of studies have noted, many of the inhabitants of these areas spend significantly more time commuting than do either their rural or urban counterparts.³⁷⁷

Ultimately, population growth in primary urban areas can be viewed in a traditional Malthusian way in that when more people demand the use of a set amount of resources the competition for those resources increases to the point where either some

³⁷⁴Emrath, P., Liu, H., (2007). *New Home Prices By State and Metro Areas*, National Association of Home Builders. Retrieved: July, 10, 2007. Website: www.nahb.org/generic.aspx?genericContentID=78655

³⁷⁵ U. S. Bureau of Labor Statistics (2007). *Consumer Price Index*. Retrieved: June, 18, 2007. Website: <http://www.bls.gov/cpi/#tables>.

³⁷⁶ Duany, A., Plater-Zyberk E., Speck, J., (2000). *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*. North Point Press.

³⁷⁷ Burchell, R. W., Downs, A., McCann, B., Mukherji, S., (2005). *The Cost of Sprawl*, Executive Department Maine State Planning Office. Island Press. Retrieved: July, 25, 2007> Websites: <http://www.maine.gov/spo/landuse/docs/CostofSprawl.pdf>, <http://www.islandpress.org/media/PDF/Burchell%20PR.pdf>

members of society figuratively die off or move away. Although the pressures of population growth in America can be seen as being relatively mild since few people are starving or are being forcibly displaced from their living spaces, population growth still has a substantial impact on many people's lives. This is particularly the case when we consider the American standard of living and what is required to sustain it. Granted the population expansion of America is significantly less than that of a country like China or India, but when such expansion is considered relative to what an average American considers a desirable standard of living the effect of growth becomes obvious. For instance, if we consider that the average population density of Beijing is 22,210 per square kilometer while the average density of the Los Angeles area, 3,100 people per square kilometer, space appears ample in comparison³⁷⁸. However, most Chinese are willing to accept living in conditions that are sufficiently lower than what Americans would accept.

From this situation is derived the American dilemma of population expansion. The dilemma is not one of basic survival, but rather one of quality of life. Most Americans when confronted with such a situation would prefer to spend more money and hence work longer hours so as to afford what is considered the traditional American life style of high consumption rather than to work and earn less and compromise their standard of living. With this in mind, we find that population expansion in America's primary urban areas is creating a situation that had not existed to such a degree in the past. For instance, 50 years ago it was the case that the average American family could buy an average residence and pay off the mortgage within 10 years. However, today it is

³⁷⁸ Beijing Municipal Bureau of Statistics (2007). *Land Use Data*. Retrieved: June, 18, 2007. Website: www.bjstats.gov.cn/esite.

the case that it would take the average family 50 years to accomplish the same task³⁷⁹. Although population growth in these areas is not the sole factor driving up the cost of living, it can be seen as playing a substantial role in such an expansion.

Indirect or secondary forms of population growth can be seen as having a similar yet different effect on the cost of living, and hence the amount of time that people must work to make ends meet. What differentiates secondary population growth from primary population growth is that secondary growth is primarily a function of the migration of people from primary regions. Thus, those who are displaced or voluntarily leave primary areas and move to areas that are stable or whose population is in decline make up the body of secondary growth. These migrants, in particular those who leave primary areas voluntarily (often to improve their standard of living), represent a group whose economic resources are often well above those of the inhabitants of the areas to which they are moving.

For instance, consider the case of North Idaho and Southern California. Northern Idaho in recent years has attracted a substantial number of migrants from California. Most of these migrants have moved to the region to take advantage of the low cost of living and the amenities that the area has to offer. However, those migrants have placed substantial pressure on local inhabitants in terms of cost of housing and overall cost of living. That pressure can be related to two basic forces. The first is the simple economics of affordability. If, for instance, an average Californian family can afford and possess a \$500,000 residence in California and an average northern Idaho family can

³⁷⁹ Cleveland Federal Reserve (2007). *Commentary of real estate*. Retrieved: July, 19, 2007. Website: <http://www.clevelandfed.org/Research/Commentary/2007/0707.cfm>

afford a \$100,000 residence, then the California family has five times the buying power in north Idaho. However, if enough Californians move to the area their net effect on the housing market will be to increase prices to the point where indigenous people cannot afford to live there. Such a hypothesis is confirmed when we look at the changes in affordability for the region over the past decade³⁸⁰.

The second pressure that secondary population growth has on these areas is less direct, however it can be equally profound. Since many of the secondary migrants are seeking some type of amenity such as a natural environment, services, or cheap real estate or recreational opportunities and some of those migrants are retirees, professionals or those desiring second homes, it often is the case that such migration will result in a process of gentrification that effectively limits traditional economic activity in an area. A prime example of such a process of gentrification is the decline in the timber and agriculture industry in certain parts of the United States. For example it is estimated that 200,000 acres of timbered land have been sold off for residential and commercial development in the western Washington area in the last ten years and that it is likely that another 300,000 acres will be developed in the next decade³⁸¹. In this instance we find that pressure to accommodate secondary population growth (primarily from California) combined with the timber industry's desire for short term profits and other forces has contributed significantly to the decline of the timber industry in western Washington.

³⁸⁰ U.S Census Bureau (2005). *Cost of living index for selected areas, 4th Quarter 2005*. Retrieved: August, 12, 2007. Website: http://www.census.gov/compendia/statab/2007/prices/consumer_price_indexes_cost_of_living_index.html.

³⁸¹ Gordon, S., (April, 1, 2007). *State Might Need New Nickname*. The News Tribune.

Gentrification from secondary population growth make it increasingly difficult for longer term residents to subsist, either in terms of being able to make a living or in many instances just being able to find a job. This pressure can also be seen as having a strong positive effect on the amount of time that an indigenous group in a secondary area must work so as to be able to afford a decent standard of living. It is ironic to note that those seeking relief from the pressures of population growth, crowding and sprawl in one region ultimately may contribute to the toil and decline in the standard of living for those in the regions to which they seek to escape.

All of these situations, including the real estate market, technological advancements and population growth tend to have a similar effect on work time and the economic situation that surrounds it. In all these instances the underlying thread is that such situations contribute to an increase in the cost of living which then is translated into an increase in time spent at work. Although there are alternative hypotheses that state that increases in the cost of living translate to either increases in pay or a reduction in the standard of living, in judging the data available³⁸² it appears more than likely that most Americans are opting for longer hours as a solution to such a dilemma.

In addition to trends that influence the cost of living and consequently contribute to an expansion of working hours, there are a number of other economic trends that can be related to the issue of work and vacation time. Per se, the highly competitive and constantly engaged nature of the economy, and neglect for informal economic activity on

³⁸² Hayden, A., (2003). International work- time trends, the emerging Gap in hours. *Just Labour*, 2, Spring.

a societal or institutional level, can all be considered to play a role in the expansion of work time.

The “Perpetual” Economy

The colloquialism “24-7” is arguably the best way to summarize the operation of the global economy. At a national or even local level modern economies have developed in such a manner as to demand an incessant level of activity. The conventional constraints that traditional societies had placed on economic activity have been mostly removed. This trend is particularly apparent in America where many businesses are open seven days a week, including during non-standard hours. Also, traditional prohibitions against working on Sundays, weekends and holidays have been by-and-large removed. For instance, as recently as 1989 Maine maintained “Blue laws” that prohibited much commercial activity on Sunday³⁸³. Much of this trend has occurred within the last thirty years and can be directly related to the expansion of certain groups’ working hours along with an almost across the board reduction in vacation time. The method through which this trend has occurred is relatively direct and can be categorized as occurring through three primary means. First, there has been an expansion of business hours, and their action to include non-standard hours effectively mandates that employees must be available to provide services during these times. If additional employees are not available to fulfill this need it is then required for existing employees’ to meet this need. An excellent example of this has been studies done in the retail sector that have

³⁸³ All things Maine (2007). *Maine’s Blue Laws*. Retrieved: July, 6, 2007. Website: <http://allthingsmaine.blogspot.com/2007/02/maines-blue-laws.html>.

concluded employers will often expand the hours of existing employees to meet time demands rather than hire more employees³⁸⁴.

The second trend that the 24/7 economy has witnessed involves people's usage of vacation time. The expansion of economic activity into weekends and holidays and America's lack of legally sanctioned vacation time all may create significant incentives for workers not to take time off even when entitled to do so. With regard to the magnitude of this effect, we find that it is most prominent amongst the self-employed and those who work in high skilled service jobs³⁸⁵. In both instances these types of workers are given a strong incentive to participate in the economy, either by virtue of their expendability or by virtue of the need to remain competitive.

The third trend is broader in its implications, however it tends to have an impact similar to the other two mentioned above. The basic argument of the third trend is similar to arguments that relate to competition within the global economy. When an economy expands to the point where it is constantly active, actors within that economy are compelled to be active in a similar fashion if they are to remain competitive. Thus is born the "rat race mentality" which assumes that a person will fail to compete relative to another if they opt to work less or are subjected to standards or family responsibilities that preclude their full-time involvement in the system.

Growthism

³⁸⁴ Higgins, C., Duxbury, L., (2002). *The 2001 National Work-Life Conflict Study: Report One. Health Canada*. Retrieved: June, 11, 2007. Website: <http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/work-travail/>.

³⁸⁵ Gerson, K., Jacobs, J. A., (1998). Who Are the Overworked Americans? *Review of Social Economy*, 56(4), 442-459.

The growthist ideology in economics mimics the “24-7” and consumerist mentality of contemporary economic theory in that it holds that economic success is dependant upon ever-expanding levels of consumption or economic activity. However, the notion of growthism in economics represents a more abstract set of principles than consumerism or other approaches similar to it. In general, the growthist mentally assumes that economic progress occurs when people consume more goods, there is more money being made in an economy, or the number of transactions has increased³⁸⁶. In light of this view growthism assumes that all forms of expansion are beneficial regardless of the greater context within which they operate.

The flaw of growthism, especially when considered relative to finite resources or the quality life experienced by a given individual, is that it neglects numerous indicators that often indicate forms of progress not contingent upon expansion. For instance, a statistic of a growthist orientation might be the increase in per capita incomes in a region. However, such a statistic does not consider the cost of living or the quality of most people’s lives. Along similar lines, it is considered to be a universally accepted token of success for businesses to have high profit margins regardless of the fact that such margins might interfere with the long-term viability of the industry or the market within which it occurs.

A relationship between the growthist ideology and the expansion of work time in America is relatively easy to develop. Although certain norms are often indirect in their influence upon specific aspects of society, it is quite reasonable to conclude that the

³⁸⁶Welton, K. B., (2001). *Cap-Com the Economics of Balance*. Pandit Press.

consumption-oriented and expansionist world view of the American economy has motivated many people to seek success through sacrificing inordinate amounts of time working when the net effect of their added labor does not appreciably improve their quality of life. Such assertion leads us to ask the question: What is the ultimate utility of earning more money, working longer hours, and consuming more resources when it is likely we could be more or equally productive partaking less of these activities? Relative to sustainability, growthism represents an anathema in that it seeks perpetual expansion of certain things without regard to their proper place within a social or environmental system. In many senses the growthist ideology highlights the normative nature of our perceptions. Granted, many of these perceptions as they relate to growthism occur outside of economics. However, within the bounds of economic thought the growthist philosophy demonstrates the dubious nature of our economic models of what it means to be successful. Also, by pointing out the shortcomings of perpetual growth as a model of economic success we are led to explore the potential for alternative theories of productivity which are more sensitive to sustainability promotion.

Neglect of informal labor and the question of economic models.

One final consideration that can be included in a discussion of what macro economic factors have led to expansion of time spent working is our economic system's disregard for informal labor and other non-monetary forms of production. As Juliet Schor aptly noted in her discussion of the evolution of work in America, Americans have not always had such a disregard for informal labor. As Schor notes, pre-industrial America considered domestic along with other non paid forms of labor to be essential

parts of the economy³⁸⁷. Such was even noted in the first census which considered such things as being a house wife or subsistence farmer to be a form of bona fide economic activity. However, with the development of a money-based industrialized economy Americans became less likely to appreciate informal work.

Up until the 1970's, however, American society still maintained a degree of recognition of the role that informal labor played in the nations economy. However, this appreciation of the role of informal labor has slowly eroded to the point where such activities receive little recognition in terms of their contribution to the economy. Although this observation is most commonly applied to the role of housewives, it can be extended to a number of other activities in which a variety of people are involved. For instance, if we consider commute times, work preparations and the like, the average working day for most full time workers expands to 11.5 hours³⁸⁸. Regardless of its value to society, informal labor is mostly left out of calculations of a nation's gross domestic product and the economic activity of individuals and families. This neglect, along with a number of other instances similar to it, raises significant questions about the validity of the economic models commonly used. Specifically, we must question our conceptualization of what is meant by terms such as economic activity and growth and work.

³⁸⁷ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

³⁸⁸ American Time Use Survey (2007). *Time spent working plus time spent involved in house hold activities etc, for men*. Retrieved: June, 3, 2007. Website: <http://www.bls.gov/news.release/atus.t01.htm>.

For instance, is the volume of trading on the New York Stock Exchange or the level of consumer expenditures truly a good indicator of people's economic status and the quality of their lives? Also, such thinking raises the question whether prosperity should be measured by the amount of economic growth a society experiences, when it is often the case that such growth is more the product of population expansion, rent seeking and other inefficiencies³⁸⁹. Finally, one might ask what would happen if alternative models were developed that accounted for things such as informal work. Would, for instance, some people be better off economically doing less paid work and working more for themselves? Needless to say the preceding commentaries raise significant questions about our conceptualization of society-wide economic trends and how they relate to sustainability.

Micro Economic Factors

The economic impact of problems related to overwork and other time use issues affects many workers, but employers and the entire economy are affected as well as workers. Research has consistently demonstrated that employers gain little in terms of added productivity when long hours are demanded of employees.³⁹⁰ In fact, such work patterns may cost employers through increased absenteeism, losses in productivity, burn out, high turnover and higher health insurance premiums³⁹¹. In addition to this, one can also add to an employer's costs the work time lost through employees' informal labor-

³⁸⁹ Talberth, J., (2008). A new bottom line for progress. In State of the World,2008. World Watch.

³⁹⁰ Peiperl, M., Jones, B., (2001). Workaholics and Overworkers, Productivity or Pathology? *London Business S Group & Organization Management*, 26(3), 369-393.

³⁹¹ Bunting, M., (2004). *Willing Slaves: How the Overwork Culture is Ruling Our Lives*, HarperCollins.

related activities such as commuting. Although the costs associated with such outcomes are significant, the logic that promotes a system of excessive work has developed in such a manner as to negate these factors through the economic logic of overtime. Simply put, it is less expensive for employers to over work one employee than to have to pay for two. However, such logic is ultimately short-sighted if the costs of overwork are translated to the entire economy in the form of lost productivity, buying power, and the costs associated with mitigating the negative consequences of such activities.

Although this situation has created an economic logic that can superficially justify its existence, it ultimately proves to highly suboptimal in nature. For instance, it is commonly accepted in human resources management that in an average 8-hour work day, an office worker will spend at least two hours involved in non-productive activities³⁹². Considering that this time could be put to more productive ends for an employer or employee and that those non-productive activities often bring about a decline in overall productivity, it would appear reasonable to propose a different system that favors a more efficient use of time. Additionally, although it is possible to view such situations as casting some doubt, on whether office workers are overworked, since time spent at work might be unproductive, such observation lends credence to the broader hypothesis that people are rushed and possess little free time.

In addition to the issue of efficiency in work there is also the issue of the equitable distribution of labor throughout the economy. In an economic system that prefers fewer employees with longer hours, there is often a substantial number of unemployed of

³⁹² Selin, S., Chevez, D., (1995). Developing a collaborative model for environmental planning and management. *Environmental Management*, 19(2) 189-195.

underemployed people. In addition to the economic logic of possessing fewer heavily worked employees, it is also commonly understood that a higher unemployment rate will often depress wages along with prices³⁹³. Although there is a great deal of validity to such theories, the economic flaws in them are often ignored. First, although the unemployed help to depress wages they also represent a liability to the economy since they must somehow be supported by the system. Second, the unemployed cannot contribute much to the economy, either in the form of consumption or production without expending saved money or using the resources of others in the form of social programs. With these factors in mind, and considering the productive costs associated with overwork, it appears likely that the true economic costs associated with the present system are quite high. Also, it is likely that a system of employment could be developed that would both limit unemployment and create more equitable time use patterns that are profitable for both employers and the economy at large.

Individuals

Although the issues of time spent working and vacation time can be analyzed at a macro economic level, an equally significant analysis can occur at the micro economic level. The micro trend is similar to the macro one in that the number of incentives most individuals experience tend to encourage them to work longer hours and take less vacation time. Although the individual situations are obviously more diverse than national trends, there are certain trends that appear to be relatively consistent for most

³⁹³ Tobin, J. (1975), Keynesian Models of Recession and Depression
The American Economic Review, 65(2). 195-202.

people. With this in mind it would be useful to explore some of these trends in the greater context of our sustainability discussion.

Work-Home Balance

In contemporary American society the balance between work and home is for the most part dominated by the requirements of work. The dominance of work in this dynamic has led to the development of effects on an individual's personal and family life. America's time use patterns, combined with the stresses of day-to-day existence, has a negative impact on the well being of the average American family, marriage and friendship. In the instance of the family, many parents are so consumed with work and other informal forms of labor that they have little opportunity to spend meaningful time with their children³⁹⁴. The traditional family vacation of the average American family has been gradually eroded to at best a long weekend³⁹⁵. Also, the advent of the dual income family has meant that children are often left unsupervised or are left in the care of day care providers who may have little attachment to the children they supervise. The net effect of such behaviors on children has been to create a generation of youth who are detached from their parents and often possess psychological or behavioral problems as a consequence of this systematic inattention.³⁹⁶

³⁹⁴ Jack, J., Gerson, K., (2001). Overworked Individuals or Overworked Families? Explaining Trends in Work, Leisure, and Family Time. *Work and Occupations*, 28(1), 40-63.

³⁹⁵ Degraff, J., (2003). *Take Back Your Time: Fighting Overwork and Time Poverty in America*, Berrett Keolher Publishers.

³⁹⁶ Ferri, E., Smith, K., (1997). *Parenting in the 1990s*. Joseph Rowntree Foundation by the Family Policy Studies Centre.

Overwork can also affect marital relationships. Half of all marriages in the United States end in divorce³⁹⁷. Also, various other relationship dynamics have developed in recent decades. One particularly telling study of couples noted that many professional couples do not spend a significant amount time communicating with each other or participating in relationship-related activities.³⁹⁸ Stress due to job-related tasks has also caused many working Americans to lose any inclination for sexual activity³⁹⁹. This phenomenon, which is known as burnout, has been mostly observed in the last 30 years⁴⁰⁰. Research has also shown that married couples who both work full-time are 45 percent more likely to get divorced⁴⁰¹ than if one spouse works; also, marriages in which one spouse works more than forty hours a week are more likely to fail than those that do not⁴⁰². Also, the rate of spousal and child abuse increases with increased time spent at paid work or in informal labor activities.⁴⁰³

³⁹⁷ U. S. Center for Disease Control (2002). *Cohabitation, Marriage, Divorce, and Remarriage in the United States*. Series Report 23, Number 22. 103pp. (PHS) 98-1998.

³⁹⁸ Johnson, J. H. IV, (2004). *Do Long Work Hours Contribute to Divorce?* Topics in Economic Analysis & Policy, 4(1), Retrieved: June, 13, 2007. Website: <http://www.bepress.com/bejeap/topics/vol4/iss1/art24>.

³⁹⁹ Laumann, E.O., Paik, A, Rosen, R. C., (1999). Sexual Dysfunction in the United States Prevalence and Predictors. *JAMA*, 281, 537-544.

⁴⁰⁰ Stiles, P., (2005). *Is the American Dream Killing You?, How "The Market" Rules Our Lives*. Collins.

⁴⁰¹ Johnson, J. H. IV, (2004). "Do Long Work Hours Contribute to Divorce? Topics in Economic Analysis & Policy, 4(1). Retrieved: June, 13, 2007. Website: <http://www.bepress.com/bejeap/topics/vol4/iss1/art24>.

⁴⁰² Crouter, A. C., Bumpus, M. F., Head, M. R., McHale, S. M., (2001). Implications of Overwork and Overload for the Quality of Men's Family Relationships. *Journal of Marriage and the Family*, 63(2), 404-416.

⁴⁰³ Ferri, E., Smith, K., (1997). *Parenting in the 1990s*. Joseph Rowntree Foundation by the Family Policy Studies Centre.

The effects of overwork have also extended to people's friendships since time spent working limits people's ability to socialize. One study found that Americans tend to have fewer close friends and acquaintances than they did 20 years ago.⁴⁰⁴ Also, people tend to attend fewer social events such as parties or other gatherings.⁴⁰⁵ Considering these trends it is relatively easy to infer that people's social lives are adversely affected by the present dominant pattern of work and time use. Although much of this dynamic can be directly attributed to overwork and a lack of leisure⁴⁰⁶, it is also important to consider the role that the structure and values of society play in this dynamic. Arguably, much of the problem with the imbalance between work and home life is a result of society's lack of regard for such issues⁴⁰⁷. In many senses American society has given people permission and even encouraged them to work long hours and to experience the negative consequences that result.

The economic cost of long working hours and a lack of leisure time are significant for individuals, employers and society as a whole. We find that in individuals the cost of overwork yields a loss in productivity, health problems and high rates of material consumption. Research relating to worker productivity has conclusively shown that

⁴⁰⁴ McPherson, M., Smith-Lovin, L., Brashears, M. E., (2006). Social Isolation in America: Changes in Core Discussion Networks over Two Decades. *American Sociological Review*, 71(3), 353-375.

⁴⁰⁵ McPherson, M., Smith-Lovin, L., Brashears, M. E., (2006). Social Isolation in America: Changes in Core Discussion Networks over Two Decades. *American Sociological Review*, 71(3), 353-375.

⁴⁰⁶ For instance Putnam R. D. (2000). *Bowling Alone*. Simon & Schuster. makes the case the people's social networks have been limited to the work place since that is the only area where people have much of an opportunity to socialize.

⁴⁰⁷ White, M., Hill, S., McGovern, P., Mills, C., Sheaton, D., (2003). "High performance" management practices, work hour and work life balance. *British Journal of Industrial Relations*, 41(2), 175-195.

workers that put in long hours and experience other forms of stress are consistently less productive than workers with more reasonable schedules⁴⁰⁸. The same holds true for workers that take advantage of vacation time. One study in particular notes that employees who take their annual leave are much less likely to have unscheduled absences from work⁴⁰⁹. Also, one might make the case that workers whose job does not overwhelm their schedule are more likely to advance in their careers since they will have time for additional training and other career-related experiences.

There is also an issue of consumption related to work-intensive situations. Individuals who have time-intensive and adequately compensated occupations tend to consume significantly more than those who do not. It may be (or seem) more efficient for an individual to earn money through work and then to spend that money on goods and services than it is to produce them yourself, depending upon the task. For instance, Americans now consume more prepared foods and eat out more than ever before⁴¹⁰. The same reliance on others holds for house cleaning and maintenance, childcare and auto maintenance.

Moreover, there appears to be a normative mentality in American society that if a job pays enough to support a certain type of lifestyle that is required to maintain that career, then the position is economically viable. However, the logic behind both these

⁴⁰⁸ Kodz, J., Kersley, B., Strebler, M. T., O'Regan, S., (1998). *Breaking the Long Hours Culture*. Grantham Book Services.

⁴⁰⁹ Braun Consulting News (2004). *Unscheduled Absences. News on Personnel, Labor Relations and Benefits*. Retrieved: June, 10, 2007.

Website:<http://www.braunconsulting.com/bcg/newsletters/winter2004/winter20044.html>

⁴¹⁰ Guthrie, J. F., Biing-Hwan, L., Frazao, K., (2002). Role of Food Prepared Away from Home in the American Diet. *Journal of Nutrition Education and Behavior*, 34(3), 140-150.

lines of reasoning can be brought into serious question. The belief that outsourcing basic household activities such as cooking and cleaning is efficient is questionable, both in terms of its economic viability and arguably its positive impact on quality of life. Similar questions also apply to the basic calculus of employment in the United States.

Widespread evidence suggests that people are willing to make significant sacrifices to maintain a certain occupation⁴¹¹. For instance, in many urban areas commutes now exceed two hours a day⁴¹². Also, there is a significant investment in goods and services, such as clothing and make of automobile, meant to support this form of careerism. The monetary and time-related investment in these activities is quite substantial⁴¹³. For instance, urban professionals such as lawyers or investment bankers will often work in excess of 60 hours a week and in the process must rely upon services to support their work-related activities⁴¹⁴. Although the economic logic of such a system appears to be superficially reasonable, one must question its ultimate validity. First, it is questionable whether these procured services are in fact more efficient, either economically or materially, than performing these tasks oneself. Specifically, the infrastructure and manpower required to eat out or clean a house is greater than doing such things alone. Second, does this provision of these services improve an individual's life in terms of making more time available for work or reducing an individual's burden

⁴¹¹ Golden, L., Figart, D. M., eds., (2000). *Working Time: International Trends, Theory, and Policy Perspectives*. Routledge.

⁴¹² U. S. Office of Highway Policy, Health and Human Services (2007). National Household Travel Survey. Retrieved: July 26, 2007. Website: <http://aspe.hhs.gov/hsp/06/Catalog-AI-AN-NA/NHTS.htm>>

⁴¹³ Hewlett, S. A., Buck-Luce, C., (2006). Extreme Jobs: The Dangerous Allure of the 70-Hour Workweek. *Harvard Business Review*, December.

⁴¹⁴ Hewlett, S. A., Buck-Luce, C., (2006). Extreme Jobs: The Dangerous Allure of the 70-Hour Workweek. *Harvard Business Review*, December.

in terms of stress? Although some advantages might be gained through such arrangements, it appears likely that little time is gained since it is relatively inherent that people must stop work to eat, clean themselves and sleep. Also, the question of whether or not these activities enhance an individual's quality of life is questionable since any time gained is then expended in work rather than leisure or some other desirable activity.

Ultimately, this situation presents us with evidence that suggests that Durkheim's notion of achieving social efficiency through a division labor may not be as universally desirable as once thought. Although there is obvious variation in the value of formal worker versus informal work, these trends suggest a suboptimal arrangement⁴¹⁵. Considering the long term consequences of overwork that such behaviors facilitate, arguably such arrangements may not be positive.

We can also question the effects of hyper-specialization on both individuals and ultimately on society. As theories of natural selection teach, species that are over-specialized place themselves in danger of extinction when the conditions that permit their specialization cease to exist. Although it is difficult to argue that humanity will come to an end because some professionals do not clean their own houses or change the oil in their cars, having individuals "outsource" their daily lives may contribute to a myopic and unrealistic world view that one's existence solely revolves around one's job. These behaviors may have a serious effect on the material efficiency of society. The American consumerist lifestyle is resource-intensive to begin with: to add to the situation by

⁴¹⁵ For instance, the economic utility of a brain surgeon painting his house rather than being in the operating room is somewhat different than that of a custodian doing the same.

participating in such resource-intensive activities⁴¹⁶ only can serve to make society less efficient, stable and sustainable in the long run. With all of these concerns related to the consumption patterns involved in work-intensive situations, it is relatively discernable that these situations are not simply as the conventional economic logic may suggest.

Vacation Time

One area of leisure-related studies that is quite relevant to a discussion of time use is that of vacation time. The lack of leisure time in America is particularly salient when compared both to the standards set by other industrialized nations and in the actual amount of free time available to the average citizen of these countries. As the figures in table 2.13 and table 2.14 demonstrate, Americans take less vacation time and have the least legally mandated vacation time of any industrialized nation.

Table 3.8: Average Number of Vacation Days Taken around the World Per Year⁴¹⁷

Italy	42 days
France	37 days
Germany	35 days
Brazil	34 days
United Kingdom	28 days
Canada	26 days
Korea	25 days
Japan	25 days
U.S.	13 days

⁴¹⁶ It is presumed that such “outsourcing” activities use more resources than if similar activities were merely done by those who needed them. For instance, consider the resources used in retaining someone to clean a house compared to merely attending to it yourself.

⁴¹⁷ World Tourism Organization (2007). *Yearbook of Tourism Statistics*. United Nations.

Table 3.9: Legal Minimum Vacation Times and Other Time Off From Work⁴¹⁸

Australia As of 27 March 2006, 20 work days (4 weeks). 2 weeks can be "sold" to employer. Additional Long service leave is also payable. 10 public holidays as well are payable to employees.

Austria 5 weeks

Belgium 20 days, premium pay

Canada Determined by provincial law. 10-15 working days depending on province. In addition, 10-12 public holidays depending on province.

Denmark 6 weeks, of which 5 days can be "sold" back to the employer - *omsorgsdage* (*carer's leave*).

European Union 4 weeks, more in some countries

Finland 35 days

France 5 weeks^l (+ 2 weeks of RTT (Reduction du Temps de Travail, in English : Reduction of Working Time) according to the contract)

Germany 4 weeks, i.e. 24 "workable" days based on a six day week (Mon - Sat). Normal work-week is Mo-Fr; plus 9 to 13 bank holidays; plus sick, pregnancy, mother ship and personal leave

Ireland 20 days, plus 9 public holidays

Italy 20-32 working days (exact amount depends on contract details) plus 12 public holidays

Japan including sick leave: 18 days paid time off; 10 vacation days

Netherlands 4 weeks

New Zealand 4 weeks as of April 1, 2007

Norway 25 working days

Portugal 22 working days, up to 25 without work absences in previous year.

Spain 30 calendar days

Sweden 25-32 working days, depending on age

Switzerland 28 calendar days (= 20 work days)

United Kingdom 4 working weeks, with no additional entitlement for bank holidays. Increases to 4.8 weeks from 1st October 2007, and to 5.6 weeks from 1st April 2009.

United States none

Much of the pressure placed upon people to work ever-increasing hours stems from a loss of economic stability. Much like the society-wide trends, competition from abroad and a number of other domestic factors have contributed to a general lack of stability in the American labor market. Although it was once the case that many workers

⁴¹⁸ World Tourism Organization (2007). *Yearbook of Tourism Statistics*. United Nations.

in America could expect to stay at one position for the duration of their careers, it is now the case that the average worker can expect to retain his or her position for an average of 3.8 years⁴¹⁹. Also past assurances of healthcare, pensions and other benefits have become items that are rarer in the American work place than in times past⁴²⁰. As a consequence of this lack of stability, many workers feel compelled to make significant sacrifices in terms of benefits, pay or time spent working. Many workers have felt pressured into expanding their time spend at work in an effort to maintain job security⁴²¹.

Also, employers may take advantage of this insecurity by expanding the hours of existing employees rather than by paying the benefits of additional employees. The end result of this pressure is that the percentage of workers working more than 49 hours a week has increased from roughly 14 percent to 20 between 1976 and 1993⁴²². Also, this trend applies to vacation time as well as to working hours. A number of commentators have noted that workers often feel compelled to not take vacation time even when they are granted it by their employers since they fear it will reflect poorly upon their work

⁴¹⁹ Federal Reserve Bank of San Francisco (2007). *Economic Research and Data, FRBSF Economic Letter, 2007, 13, June, 1, 2007, "Anxious workers"*. Retrieved: August, 1, 2007. Website: <http://www.frbsf.org/publications/economics/letter/2007/el2007-13.html>, Federal Reserve Bank of San Francisco.

⁴²⁰ Government Accountability Office (2007). *Employer-Sponsored Health and Retirement Benefits: Efforts to Control Employer Costs and the Implications for Workers*. GAO Report-07-355.

⁴²¹ Lenard, C., (2009). *For many workers, fear of layoff is a big motivator, AP business*. Retrieved: June, 20, 2009. Website: http://marketplace.publicradio.org/apheadline_detail.php?story_id=D98LR5RO0&group=ap.online.headlines.business

⁴²² Ronds, P., Iig, R., Gardiner, J., (1997). Trends in Hours of Working Since the Mid-1970's. *Monthly Labor Review*, April.

ethic⁴²³. The data available on time spent on vacation clearly reflect this sentiment. Compared to 1982, the average American worker today takes five fewer days off a year. Ironically, the amount of absenteeism has increased substantially during that period of time and in the last 5 years this rate has increased roughly 10% a year . To counteract the alleged “abuse” of sick leave many employers now combine vacation time and sick time into the same annual time off of work allotment⁴²⁴. Under these circumstances employees who take a sick day are effectively using their vacation time.

Ironically, management and human resources professionals commonly find that additional hours spent at work do not result in a linear increase in productivity. One telling example of this is the “loafing” factor calculated into workers pay scales⁴²⁵. A commonly accepted statistic is that workers who work 8 hours will spend as much as 1.5 of those hours doing non-work-related activities such as surfing the Internet or talking to co-workers about personal matters. In addition to these general trends certain types of employees experience special circumstances that have compelled them to spend more time at work than they would have preferred. Two notable examples of this are the dilemmas faced by low income workers and by salaried workers.

After considering the difference between the living wage and the minimum wage it is quite easy to discern the root of the hardships that many low income workers

⁴²³ Ronds, P., Iig, R., Gardiner, J., (1997). Trends in Hours of Working Since the Mid-1970's. *Monthly Labor Review*, April.

⁴²⁴ Braun Consulting News (2004). Unscheduled Absences. *News on Personnel, Labor Relations and Benefits*. Retrieved: June, 10, 2007.

⁴²⁵ Shadi, J. (2005). *Power Slacking on the Job; Survey: Workers waste more time than employer expect, costing companies \$759 billion a year*. Retrieved: August, 7, 2007. http://money.cnn.com/2005/07/08/pf/wastedtime_job/

experience. Often these workers must make difficult decisions about covering housing, food or other expenses. One method to address those economic problems is for workers to put in inordinate numbers of hours at multiple jobs. Although the long term effect of such work in terms of physical and mental stress is significant, the practice provides a method of making ends meet. Some observers suggest⁴²⁶ that low wage labor in America is something that most people can escape via education and hard work; it is more the reality that many people are constrained by social and economic factors that make such an existence a permanent reality. Some of those factors at play for many people are familial obligations and geographic location, both of which require substantial effort or cost to change.

Also, if we consider low wage labor in relation to greater social inequality the permanence of the issue becomes even more troublesome. Specifically, when the economic system exhibits large amounts of inequality in terms of individual compensation, many on the lower end of the spectrum are likely to be priced out of even basic goods. An excellent example of this is seen in indexes of affordability in areas where inequality is high. Two notable examples of this are the hyper-stratified urban areas such as San Francisco and New York City, along with rural areas such as Montana, coastal Maine, and Northern Idaho that have experienced significant in migration of wealthy residents. In any of these examples low income (and even middle income) people have experienced a significant increase in their cost of living that can only be

⁴²⁶ Schulman, B., (2005). *The Betrayal of Work*. New Press.

compensated for by either migration or an expansion of hours spent at work is possible⁴²⁷.

Salaried employees face a unique set of expectations of their jobs and how those expectations relate to the number of hours worked. Since the basic premise of a salaried position is that the worker is compensated based upon completing a certain job rather than the number of hours they spend at work, it is often in the employer's interest to expand the definition of a given position to encompass as many tasks (and hence hours) as possible. Also, salaried workers face competitive pressure from other employees to work as much as possible so as to appear useful (or even indispensable) to their employers. The effect of these factors is often upward pressure on the numbers of hours worked by employees and enhancing the exploitation tendencies of employers.

Environmental Considerations

Aside from the individual economic and social costs of excessive work and poorly developed time use patterns, individual behavior also has a negative impact on the environment. Since a work-intensive system is grounded in the systematic pursuit of economic efficiency and goal attainment it is predictable that resource consumption and environmental well being will have at best a secondary status to traditional economic and organizational objectives. Although material consumption and environmental degradation do have an economic impact, their effect on the individual is less immediately obvious than the economics associated with earning a living. Thus, a

⁴²⁷ Smith, N., (1996). *The New Urban Frontier: Gentrification and the Revanchist City*. Routledge.

worker who commutes two hours a day and uses services to support his work-related activities does not fully experience the long-term economic and social consequences of these relatively finite and short-term behaviors.

It is also useful to consider the impact of a system that does not allow for the efficient use and maintenance of an individual's property and society's infrastructure. One prominent example of this is the nature of American trash. America is by far the most wasteful society to have ever existed. Not only does our waste contain refuse, but it often contains items that, if given the proper attention could be repaired and continue to be used for some time. One example of this is automobiles. America retires 10.3 million mostly serviceable automobiles each year⁴²⁸. Although there are a number of reasons for this behavior, including planned obsolescence, consumerism, and skill relative to repairing cars, a feasible conjecture is that much of this waste is due to a lack of time required to repair such items and a perverse economic logic⁴²⁹ that makes such consumption patterns feasible. Thus, the throw-away society is as much a product of consumerism as it is of an inequitable system of time use and work.

To understand the long-term impact of these behaviors one need only consider what would occur in contemporary America if any of the resources we rely on were to suddenly become scarce through exhaustion, mismanagement or purposeful hoarding.

⁴²⁸ U. S. Department of Environmental Protection (2008). *Product stewardship*. Retrieved: September, 18, 2008. Website: <http://www.epa.gov/epaoswer/non-hw/reduce/epr/products/vehicles.htm>

⁴²⁹ What is meant by the term "perverse economic logic" is that it is often the case that the demands of the formal economy often make it such that it is more economically efficient to participate in activities that are materially wasteful than to act in a materially efficient manner.

Considering that the United States consumes 23% of the world's resources and represents 5% of the world's population,⁴³⁰ it is reasonable to conclude we have built our society based upon very unsustainable premises. Also, the cost of environmental degradation is long-term and the effects on the individual are mostly only dimly visible at best. A work-intensive system that uses resources inefficiently will eventually degrade the environment to a level where resources will grow scarce, and hence more expensive, and the other environmental factors will grow increasingly problematic and volatile.

It is useful to conclude this analysis with a discussion of the normative influence on time use in contemporary America. The influence of American cultural values on work and leisure is a well documented phenomenon⁴³¹. American culture generally promotes work while reserving little if any place for leisure. Moreover, many have made the case⁴³² that a materialist and consumerist view society places little value on things that are not related to social status or material consumption. Much of what motivates American consumer habits is the perceived relationship between personal fulfillment and material consumption⁴³³. Specifically, many have argued that people are made to feel inadequate or unfulfilled by marketers so as to motivate them to consume products⁴³⁴. Considering these dynamics a consumerist society places a strong incentive on material

⁴³⁰United Nations (2005). *Statistical Review of World Energy 2005*. and United Nations (2004). *World Population Prospects: 2004 Revision*.

⁴³¹ Applebaum, H., (1998). *The American Work Ethic and the Changing Work Force: An Historical Perspective*. Greenwood Press.

⁴³² Stiles, P., (2005). *Is the American Dream Killing You? How "The Market" Rules Our Lives*. Collins. Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

⁴³³ Featherstone, M., (1994). *Consumer Culture and Postmodernism*. Sage.

⁴³⁴ Miles, S., (1998). *Consumerism: As a Way of Life*. Sage.

consumption while effectively ignoring the additional work, lack of free time and money required for such behaviors.

Ironically, some have made the case that leisure and vacation time have been co-opted by this consumerist mentality. The small amount of free time Americans do have is mostly spent watching commercial television or taking planned and costly vacations such as cruises or skiing trips⁴³⁵. In either instance the consumerist mentality probably contributes to a world view that places a monetary value on everything. Also, consumerism and materialism are somewhat self-perpetuating in that they limit a person's ability to seek out novel and interesting experiences that may lead them to question the materialist values of American consumerist society.

Aside from consumerism American culture seems to condone a mentality about work that is best typified by Max Weber's classic *Capitalism and the Protestant Ethic*⁴³⁶. Weber claimed that much of what defines modern capitalist society is rooted in the material and social values of Northern European Protestant culture. Specifically, Weber contends that people are motivated by the desire for material wealth and believe that it is good to work hard and that idleness represents a form of vice. Combine these values with a materialistic and highly competitive market system and one arrives at a position in which society often denigrates free time and leisure as being wastes of time or opportunities to indulge in vice.

⁴³⁵ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books.

⁴³⁶ Weber, M., (2002). *The Protestant Ethic and the "Spirit" of Capitalism and Other Writings*. Penguin Group.

There are a number of consequences for American society that result from the observed time use patterns and the structures that dictate them. American society's lack of regard for leisure seems to be related to and translates to a number of other cultural issues in American society. One area where lack of free time appears to be having a negative impact on society is on people's political and civic engagement. Although both politics and community involvement have deep historical importance in American society,⁴³⁷ in recent times the amount of time people have actually spent involved in these activities has declined significantly.⁴³⁸ For instance, political participation to many people amounts to voting every four years in presidential elections⁴³⁹. The case is similar for both civic and community-oriented activities such as volunteering and other social activities. As Robert Putnam notes in *Bowling Alone*,⁴⁴⁰ Americans' participation in community related activities has been in decline in recent decades. Although Putnam attributes this change primarily to people's increased consumption of television, it appears likely that there are deeper structural roots to this problem that are directly related to the issues of time use in American society.

As noted before, American culture has developed in such a way that much of contemporary American society does not place high value on activities outside of work and material consumption. This lack of value is then translated into a lack of formal social structures, and cultural norms that facilitate people's involvement in the political

⁴³⁷ Tocqueville, A., (2004). *Democracy in America*. Vintage Books.

⁴³⁸ Putnam, R. D., (2004). The Strange Disappearance of Civic America. *The American Prospect*, 24, Winter. Retrieved: June, 13, 2007. Website: (<http://epn.org/prospect/24/24putn.html>).

⁴³⁹ Patterson, T.E., (2003). *The Vanishing Voter: Public Involvement in an Age of Uncertainty*. Alfred A. Knopf Publishers.

⁴⁴⁰ Putnam, R. D., (2000). *Bowling Alone*. Simon & Schuster.

and social institutions of the country. Although philosophers dating back to Plato⁴⁴¹ have commented on the need for leisure as a prerequisite for civic engagement, such thinking appears to be lacking in the American instance. In its place the contemporary American system of values appears to give to economically quantifiable activities very high priority. Also, the dynamics discussed here suggest that American society is fundamentally unsustainable in its use of material resources, in its prevailing culture and in how most individuals live and work within American society.

⁴⁴¹ Plato, Lee D., (2003). *The Republic*. Penguin Classics.

Chapter 4

Methodology

The methodology used to assess both time use and sustainability makes use of an approach that applies a quantitative measure to a conceptual framework that is reflective of the major concepts being analyzed. Specifically, the index of sustainability uses data to compile both an index of overall sustainability along with separate aspects of sustainability such as economic, social, and environmental sustainability. The index of time use is primarily concerned with the concept of overall work time. To achieve this indicator the time use index looks at various relevant aspects of time use such as work time, vacation and informal labor. Both the sustainability and time use indices incorporate individual, group and policy-related variables. Through combining these sub-factors in a manner that allows for individual analysis along with a comprehensive index of time equity and sustainability, it is possible to gain an understanding of the relationship between time use and sustainability, a country's overall performance relative to these variables, and how various sub-factors relate to the situation.

To gain some understanding of the context from which the methodology used here is derived a discussion of the assessment of sustainability and time use is presented. Although some of this discussion does not directly apply to the methods being used for this work, it does highlight many of the concepts and dilemmas associated with assessing time use and sustainability. Additionally, this discussion is intended to raise many implicit questions about the issues discussed in prior chapters. Although this discussion is by no means exhaustive, it does serve to connect the broad context from which this work is derived with the methodology that assesses it. Finally, a detailed description of

the methodology is presented, both relative to its development and to the process of variable selection.

The measurement of sustainability and time use

As prior research has shown, gauging sustainability is a complex task that requires both skill and rigor⁴⁴². Since sustainability cannot be measured through the use of data relating to any one variable, it is necessary to compile statistics relating to a number of variables that allude to a society's level of sustainability. Granted there are overall indices of sustainability such as the Environmental Progress Index and Genuine Progress Index; however, generally speaking these indices are used to assess some subset of sustainability, such as environmental or social outcomes, rather than considering the systematic nature of sustainability on a societal level. Although these indicators are somewhat arbitrary relative to the selection of data and their subsequent aggregation, most indicators of sustainability are based upon the assumption that a society must possess a stable environment, economy and social structure to be sustainable⁴⁴³. Thus, to assess sustainability it is necessary to construct aggregated indicators to gauge each sub-construct. In turn, the indicators selected for these aggregated constructs must reflect some substantive aspect of a society's overall level of sustainability.

Considering the structure of sustainability, we are faced with a number of questions as to what indicators to use, what weight they should receive, and how they

⁴⁴² Pearce, D., Hamilton, K., Atkinson, G., (1999). Measuring sustainable development: progress on indicators. *Environment and Development Economics*, 1, 85-101.

⁴⁴³ Maine, T., (2003). *Towards a Metric of Sustainability*. CISRO Publishing.

should be structured relative to overall sustainability and its sub constructs. Through addressing these issues we can refine an indicator that assesses sustainability in various domains. However, regardless of the level of methodological stringency applied to the model being used here, methods for assessing sustainability are diverse and each can contribute some element to the greater discussion of sustainability and time use. With this in mind, this section first addresses the development of sustainability assessment from both a theoretical and methodological perspective.

The development of sustainability assessment originates from a number of disciplinary backgrounds ranging from ecology to economics and engineering. For instance, studies of sustainable economics either focus on creating financially solvent economic systems or focus on developing economic activities that do not compromise environmental or social systems⁴⁴⁴. Additionally, sustainability can be applied to many aspects of product design that address issues of product efficiency and environmental impact⁴⁴⁵. Each of these subfields attempts to assess the social, economic or environmental aspects of a system. Initially, most of the explicit work in sustainability aims to address the environmental aspects of sustainability⁴⁴⁶. However, one could also argue that implicit thinking about sustainability has existed in a wide variety of research and theory dating far back. For instance, early social theorists ranging from Marx to

⁴⁴⁴ Constanza, R., (1991). *Ecological Economics: The science and management of sustainability*. Columbia University Press.

⁴⁴⁵ One example of this is found in architecture. Saunders W. S., (2008). *Nature, Landscape, and Building for Sustainability*. Harvard University Press.

⁴⁴⁶ Maine, T., (2003). *Towards a Metric of Sustainability*. CISRO Publishing.

Malthus questioned the ability of various aspects of society or the environment to tolerate certain activities such as labor exploitation or large-scale resource consumption.

More conventional discussions of sustainability usually stem from work that deals with issues of environmental sustainability. Much of the early work on assessing sustainability originated from analyses that attempted to assess the functioning of ecosystems⁴⁴⁷ or the impact of various factors such as pollution or development on an environment⁴⁴⁸. As theories and research relating to sustainability developed it became increasingly apparent that the environmental aspects of sustainability only represent one dimension of a greater system that also involves social and economic issues. With these developments it also became evident that sustainability can only be explained as a complex system of interdependent factors. For instance, it is difficult to understand a society's level of sustainability without understanding the relationship between social and environmental factors. Thus, the assessment of sustainability has traditionally relied upon quantifying individual factors and then placing them into a greater theoretical context that considers this system. For instance, to gain an understanding of the impact of pollution on society it is first necessary to quantify what type and how much pollution there is, and then ascertain how it directly or indirectly affects social and environmental systems.

⁴⁴⁷ Chapman, J. L., Reiss, M. J., (1999). *Ecology Principles and Applications*. Cambridge.

⁴⁴⁸ Glasson, J., Therivel, R., Chadwick, A., (2005). *Introduction of Environmental Impact Assessment*. Routledge.

Assessing an entire society's level of sustainability first requires a conceptual basis for subsequent analysis. Although there is some debate as to the exact meaning of sustainability⁴⁴⁹, one commonly accepted definition is: "Meets the needs of the present without compromising the ability of future generations to meet their own needs."⁴⁵⁰ This definition, along with others similar to it, represents a theoretical basis for empirical analysis. Mostly notable in this regard is the notion of a system not using its environment, people or economic resources beyond the point where it can be supported indefinitely. Also, in a more general capacity most theories of sustainability make the case that a sustainable system does not produce side effects which excessively infringe on the operation of some other aspect of the system⁴⁵¹. For instance, it would be difficult to consider an economic system sustainable if it resulted in widespread social problems and environmental degradation.

Environmental Sustainability

Relative to assessing environmental impact, most analyses of environmental sustainability focus on assessing resource usage and production⁴⁵², infrastructure,

⁴⁴⁹ For instance some have argued that social justice is an aspect of a sustainable systems, see: Agyeman, J., Bullard, R., Evans R., (2003). *Just Sustainabilities: Development in an Unequal World*. MIT Press. While others place priority on economic and resource related efficiency Constanza, R., (1991). *Ecological Economics: The science and management of sustainability*. Columbia University Press.

⁴⁵⁰ United Nations (1987). Report of the World Commission on Environment and Development, General Assembly Resolution 42/187, 11 December 1987.

⁴⁵¹ Constanza, R., (1991). *Ecological Economics: The science and management of sustainability*. Columbia University Press.

⁴⁵² Sampson, N., Hair, D., (1989). *Natural Resources for the 21st Century*. Island Press.

environmental degradation⁴⁵³ and biodiversity⁴⁵⁴. Most assessments of these variables aim to compare observed patterns of behavior with either best practices as judged through other research or to assess existing consumption patterns relative to what has been determined that an environment can sustain⁴⁵⁵. For instance, on a global level there have been many studies that attempt to calculate how many people the earth can support at a certain standard of living⁴⁵⁶. Such methods also apply well to both case studies of large regions and individual countries. Also, such methods are applicable for the purposes of cross-national comparison. One notable recent example of cross national environmental sustainability assessment is the Environmental Sustainability Index study compiled by the Yale Center for Environmental Law and Policy⁴⁵⁷. The Yale study used cross-national data on resource production and consumption, along with other variables, to assess environmental sustainability in the developed world. Generally, speaking the methodology used for the Environmental Sustainability Index assumes that multiple criteria must be satisfied for an environmentally sustainable outcome. However, the ESI does not consider the broader impact of various environmental situations on social or economic structures.

⁴⁵³ United Nations Development Program/Office of Development Studies (2006). *A survey of composite indices measuring country indices: 2006 Update*. Retrieved: March, 15, 2008, Website: http://www.thenewpublicfinance.org/background/Measuring%20country%20performance_nov2006%20update.pdf

⁴⁵⁴ Sankar, S., (2002). Defining “Biodiversity”; Assessing Biodiversity. *The Monist*, 85, 131-155.

⁴⁵⁵ This concept is known as maximum sustainable yield.

⁴⁵⁶ Wackermangle, M., Ress, W., (1996). *Our Ecological Footprint: Reducing the Human Impact On Earth*. New Society Publishers.

⁴⁵⁷ Yale Center for Environmental Law and Policy (2005). *Environmental Sustainability Index: Benchmarking National Environmental Stewardship*. Retrieved: June, 16, 2007. Website: <http://www.yale.edu/esi/>

One theme that can be derived from a number of the contemporary measures of environmental sustainability is the aversion to what some have deemed “narrow scientism”⁴⁵⁸. Specifically, most accepted measures of sustainability focus on the systematic nature of assessment rather than on the specific relationships found between certain variables. Also, it is quite reasonable to argue that it is difficult to understand the meaning of a specific relationship without considering the greater context in which it occurs. Ultimately, environmental sustainability represents a theoretical basis from which to judge other aspects of how societies operate. Also, one can argue that environmental considerations occupy a primary position in terms of determining a society’s wellbeing since the environment represents basis for all subsequent economic and social activity; however, as the subsequent discussion will show, both social and economic sustainability have an equally prominent place in determining the success of a society.

Environmental sustainability is arguably at the core of theories of sustainability primarily because it was the first topic explored at any length. Also, ecosystems can be used as a convenient analogy for how social and economic systems operate. There are a number of methods for calculating a community’s level of sustainability in addition to assessing how sustainability relates to a given resource or other item. Also, there a number of theoretical premises that can help guide an analysis of environmental sustainability. As mentioned before, analyses of sustainability are contingent upon

⁴⁵⁸ Bannister, R. C., (1991). *Sociology and Scientism: The American Quest for Objectivity, 1880-1940*. Viking Penguin.

measuring the productive ability of an environment along with its ability to maintain a population, certain amount of the consumption of various resources and pollution. From this idea we can view environmental sustainability as the characteristics of a system relative to these factors. From a methodological perspective, maintaining the proper scope of analysis and selecting the proper variables is essential to assessing the sustainability of a given subject. If one fails to place a subject in the proper scope the resulting analysis may provide inaccurate results.

For instance, a product might claim a high level of energy efficiency relative to its operation. However, if the product requires large amounts of energy to produce and also causes significant amounts of pollution then the product most likely is not as sustainable as if it were judged by its total energy consumption. To take another example, if we are assessing the impact of recycling on a community, a poorly conducted analysis might note a positive impact to be found in a high level of recycling. However, one could further analyze the situation and note that a high level of recycling in some instances is due to a high level of consumption and subsequent waste. Although one could argue that recycling is a positive thing relative to achieving sustainability, reducing consumption and limiting waste prove to be more positive steps. Such methodological dilemmas emerge both in the assessment of individual behavior and on a national scale. Also, they allude to the ambiguity of many situations relating to sustainability and its proper assessment.

In terms of general approaches, the concept of environmental impact or ecological foot print has a prominent place in assessing sustainability. Both these concepts are geared towards assessing the level of impact a community or another entity has on the environment. One of the most prominent examples of environmental impact assessment is the NEPA (National Environmental Policy Act) requirement of the EPA. The NEPA statute which was enacted in 1969 mandated that certain projects be assessed in terms of their environmental impact.⁴⁵⁹ In addition to this, environmental impact analysis has also become common for communities and other discrete social units.⁴⁶⁰ For instance, a good amount of work has been done to assess the level of sustainability of various large metropolitan areas such as San Francisco, California and Seattle, Washington⁴⁶¹. These assessments often incorporate measures of both environmental impact, resource usage, and also various aspects of a community's social and economic operation such as social capital. Additionally, similar research has been conducted with specific aspects of a community or a region such as how sustainable agriculture is⁴⁶² or how successful a community is in terms of maintaining a functioning economy⁴⁶³

⁴⁵⁹ National Environmental Policy Act.(1975). (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982), Accessed July, 11, 2007, Website: <http://ceq.eh.doe.gov/Nepa/regs/nepa/nepaeqia.htm>

⁴⁶⁰ Flora, C. B., Kinsley, M., Luther, V., Wall, M., Odell, S., Ratner, S., Topolsky, J., (1999). *Measuring Community Success and Sustainability*. (RRD 180). Ames, IA: North Central Regional Center for Rural Development.

⁴⁶¹ Chamberlain, B., (2005). *Sustainability Initiative and Outcome in U. S. Cities: Roots in the Creative Class, Social Capital or Political Culture*, Prepared as a paper for ESRP 592: City Sustainability Initiative Seminar with Stowell Data Sets, Washington State University.

⁴⁶² Altieri, M., (1995). *Agroecology: The Science of Sustainable Agriculture*. West View.

⁴⁶³ Carr, P., Kefelas, M., (2009). *Hollowing Out the Heartland: The Rural Brain Drain and What it Means for America*. Beacon Press.

In addition to impact assessment, research in environmental sustainability also addresses issues of resource production and consumption along with a variety of research that addresses the interrelationships among behavior, policy and environmental outcomes. Such research might address issues of how fuel taxation might lead to more efficient automobiles⁴⁶⁴ or how land use regulation may positively or negatively affect housing affordability. Environmental outcomes are of particular interest since they enable us to access the connection between environmental outcomes and other structures such as economic practices or social mores.

Relative to specific areas of analysis, it is useful to consider energy consumption since much energy is used of what dictates consumption patterns in industrialized societies is contingent upon how much and how efficiently energy resources are managed. Additionally, topics relating to land use and natural resources production are another prominent factor to consider since they allude to how a society has integrated with its environment. Also, along these lines a proper understanding of the role that infrastructure has to play in resource consumption and various other social and economic factors is useful. Specifically, an analysis of land use habits relative to levels of urbanization and population density are useful to gaining an understanding of sustainability since both land use patterns and infrastructure influence resources consumption, along with social and economic activity. Finally, it is useful to consider the

⁴⁶⁴ Thomas, A., (2009). *The State of Transportation Policy in the Pacific Northwest: A Long Term Analysis*. Presented At The Pacific Northwest Political Science Association, Victoria B.C.

nature of pollution both in terms of its impact and how it relates to other structures such as resource consumption and infrastructure.

Social and Economic Sustainability

As discussed in prior chapters, social sustainability generally is comprised of issues that either relate to the well being of a community or the welfare of individuals. On one level or another, thinkers dating back to the classical and enlightenment philosophers such as Plato⁴⁶⁵ and Locke⁴⁶⁶ have questioned what is both the natural and ideal arrangement of society and what is the proper role of the individual within society. For instance, Plato's *Republic* theorizes about the ideal arrangement of society. Also, if you consider concepts such as Locke's theory of natural rights or the social contract such ideas ultimately allude to the idea that social standards must provide for the ability to live a certain way.

Assessing social sustainability is a slightly more complicated task than assessing environmental sustainability. Although it is possible to argue that society, or economies, mimic ecosystems in that they are complex interdependent systems, the difficulty in assessing social and economic indicators stems from their often ambiguous and controversial nature relative to assessing what is equitable and or desirable for society. For instance, much of classical economics focuses on the use of abstractions that pay

⁴⁶⁵ Plato, Lee, D., (2003). *The Republic*, Penguin Classics.

⁴⁶⁶ Locke, J., (1821). *Two Treatises of Government*. Whitmore and Fenn.

little attention to the actual well being of the average citizen⁴⁶⁷. Also, concepts such as the level of inequality, individualism or collectivism in a society are often rather subjective in terms of what is appropriate. For instance, a common question is what amount of individualism should be promoted in society versus the interests of the collective⁴⁶⁸. However, regardless of the debates surrounding these topics there does appear to be some level of consensus regarding many aspects of the social structure and economic composition of a modern society.

Additionally, research in social and economic sustainability must also address issues relating to the proper balance between the interests of the individual and that of the rest of society. One of the more prominent questions is: How many resources are certain individuals entitled to if there is some type of need elsewhere in society? Such questions can be framed in either economic terminology, most likely that which relates to issues of individual welfare over the productivity of an entire economic system or, relative to ideological and cultural variables. With respect to the latter, one very prominent question that contemporary research often addresses is the amount of social and economic liberty an individual should possess versus the amount of power the state should have for managing that freedom⁴⁶⁹.

⁴⁶⁷ Pannozzo, L., Colman, R., (2004). *GPIAC, Working Time and the Future of Work in Canada*, GPIAC. Retrieved: Jul 21, 2007. Website: <http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>

⁴⁶⁸ A good discussion of the various trade offs found in policy can be found in Stone, D., (2001). *Policy Paradox*. W. W. Norton.

⁴⁶⁹ Stone, D., (2001). *Policy Paradox*. W. W. Norton.

Aside from these general aspects of social sustainability assessment there are also a number of specific topics relating to different social structures and subjects that are of interest. In general, research in social sustainability can be divided into the assessment of either individual or collective variables.

The assessment of social sustainability on an individual level typically involves assessing the quality of life and welfare of individuals⁴⁷⁰. Quality of life can be generally defined as any trait that contributes to an individual's welfare or his/her position in society⁴⁷¹. Thus, variables such as education and health status are of interest since they typically have an important influence on an individual's existence. Although there is some debate as to what an optimal standard of living should resemble, generally speaking a high standard of living usually refers to possessing adequate material and or financial resources while maintaining meaningful social relationships and a productive position in society. With this in mind, it is useful to consider the variables mentioned relative to the qualities of an individual since they no doubt contribute to his or her standard of living in addition to other variables such as material consumption, attitudes relating to happiness and personal safety, marital status and other social relationships, along with employment status. It is worth noting here that time use can also be seen as contributing directly to an individual's quality of life in a fashion similar to the other variables mentioned.

⁴⁷⁰ PannoZZo, L., Colman, R., (2004). *GPIAC, Working Time and the Future of Work in Canada, GPIAC*. Retrieved: Jul 21, 2007. Website:

<http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>

⁴⁷¹ Sen, A., Hawthorn, G., Muellbauer, T., (1988). *The Standard Of Living*. Cambridge University Press.

The assessment of social sustainability on a group level is similar to individual assessment in that it is primarily concerned with equity and welfare⁴⁷². Research of this nature can assess things such as how various social groups are either systematically advantaged or disadvantaged relative to various outcomes⁴⁷³. However, sustainability on a group level must address these issues while considering cultural and ideological variables, individuals, and social structures such as religion and government. This is evidenced through a number of the works that form the basis for this analysis. If we consider Epsing Anderson's typology of welfare states and Goodin et al's application of this typology to time use it becomes evident how cultural and governmental variables can influence sustainable outcomes.

Regarding more specific topics, one of the better conceptual representations of social sustainability is the concept of social capital⁴⁷⁴. Social capital can be represented either at an individual or at an institutional level.⁴⁷⁵ Social capital at the individual level can be represented by both the nature and quantity of individual activities that contribute to the well being of a community and its members. Individual considerations such as education, professional and other skills can be seen as being relevant. In terms of activities, social capital relies upon how individuals relate to their communities. For

⁴⁷² Dillard, D. V., Kind, M., (2008). *Understanding the Social Dimension of Sustainability*. Taylor Frances.

⁴⁷³ One example of this can be found in the relationship between socioeconomic status and health outcomes. See: Adler, N., E., Stewart, J., Marmot, M., (1999). *Socioeconomic Status and Health in Industrial Nations: Social, Psychological, and Biological Pathways*. New York Academy of Sciences.

⁴⁷⁴ Putnam R. D. (2000). *Bowling Alone*. Simon & Schuster.

⁴⁷⁵ Stone, W., (2001). *Measuring Social Capital: Towards a theoretically informed measurement*. Australian Institute of Family Studies.

instance, a person who possesses many skills and is involved in the community can be seen as contributing to a high level of social capital both through their involvement and the application of their skills to the community. In a similar vein, social capital can represent group social activities that are not dependent upon individual skills. For instance, social groups such as bowling leagues or church groups provide an opportunity for socialization and networking independent of the demographics of the individuals involved⁴⁷⁶.

In terms of assessing social capital, there are two methods that can contribute to our understanding of a country's overall level of social capital based upon the data available. The first method is to look at the percentage of individuals involved in social capital related activities such voting or being involved in civic activities. It is presumed that the more involved people are in their community in terms of participation the higher the level of social capital such communities will exhibit. The second method is less direct, but it can serve a similar purpose. By looking at people's attitudes relating to their confidence in social institutions one can reasonably infer that if people possess a high opinion of an institution they will likely be supportive of it and involved with it⁴⁷⁷.

At the institutional level, the most commonly used method for assessing social capital is assessing the strength of social institutions including religious, educational and

⁴⁷⁶ Putnam R. D. (2000). *Bowling Alone*. Simon & Schuster.

⁴⁷⁷ Stone, W., (2001). *Measuring Social Capital: Towards a theoretically informed measurement*. Australian Institute of Family Studies.

civic groups⁴⁷⁸. Although there are a number of methods for assessing the strength of institutions, public opinion and indices of performance provide relatively useful and readily available information as to the strength of a public institution. Also, we can gauge social capital through the strength of informal social relationships such as social networks found in communities and other organizations. High levels of social capital contribute to sustainability through a number of mechanisms. Past research has shown that in communities in which civic involvement is high there are lower levels of adverse social phenomena such as crime and corruption⁴⁷⁹. Thus, civic engagement is useful in and of itself, along with indirectly hindering the development of social phenomena that could harm society. Also, social capital contributes to the economic efficiency of a community through fostering informal networks of assistance⁴⁸⁰. For instance, neighbors may be able to watch each other's children or assist in other matters and in doing such actions save community member's money for other purposes. Also at this level, it useful to consider indicators of group social welfare such a rates of child poverty, imprisonment, crime, divorce and child abuse.

Aside from social capital, other aspects of individual's social lives such as social structures can be seen as playing a role in social sustainability. For instance, a society's level of social and economic equality has been shown to play a prominent role in the long

⁴⁷⁸ Partha, D., (2001). *Social Capital: A Multifaceted Perspective*. World Bank Publications.

⁴⁷⁹ Partha, D., (2001). *Social Capital: A Multifaceted Perspective*. World Bank Publications.

⁴⁸⁰ Solow, R., (2001). "Notes on social capital and Economic Performance" In: Partha, D. *Social Capital: A Multifaceted Perspective*. World Bank Publications.

term sustainability of most social groups.⁴⁸¹ One good example of this is research that has been done to suggest the more equal a society is the better the overall health of its inhabitants will be⁴⁸². Additionally, there is also the issue of merit and achievement; it is arguably easier to maintain a meritocracy in an egalitarian society than one that is not since it is reasonable to presume that high levels of inequality will hinder social mobility. Also, inequality can be related to individual outcomes such as level of education and health status⁴⁸³. The most commonly accepted indicator of economic inequality is the Gini Coefficient which measures the distribution of wealth in a society. While all societies exhibit some level of inequality, societies that are so unequal that they fail to meet individual needs and fail to reward efforts in an equitable manner often face tremendous problems, both in terms of economic inefficiency and in some extreme cases political turmoil. Also, in a manner similar to social capital, an individual's personal relationships can play a part in social sustainability since it is arguably the case that stable, well structured families make the lives of both adults and children more productive and enriched. Finally, we should consider the role of culture, both in terms of creating social institutions that promote the welfare of the individual and the group along with cultural norms that facilitate identity and perceptions about various relevant topics such work and time use within a society. For example, one could argue that through

⁴⁸¹ Anand, S., (2000). Human Development and Economic Sustainability. *World Development*. 28(2), 2029-2049.

⁴⁸² Adler, N., E., Stewart, J., Marmot, M., (1999). *Socioeconomic Status and Health in Industrial Nations: Social, Psychological, and Biological Pathways*. New York Academy of Sciences.

⁴⁸³ Lareau, A., (2003). *Unequal Childhoods: Race, Class, and Family Life*. University of California Press. see also: MacArthur Research Network (2008). *SES and Health*.

Retrieved: July, 7, 2008. Website:

<http://www.macses.ucsf.edu/Research/Social%20Environment/chapters.html>

assessing different policies related to work and time use, liberal capitalist societies such as the United States possess a significantly different view of work and leisure than does a country such as France.

In addition to issues that relate to individuals and groups, matters of governance and infrastructure are also of importance to social sustainability. Arguably, at the core of most theories of modern democratic government is the idea that a government must serve the needs of its citizens while balancing the interests of various specific constituents. In developed countries this is quite prominent since all modern states possess some type of social welfare system in addition to investing in public infrastructure and the economy. There are a number of methods for assessing how government contributes to social and other forms of sustainability. One method is to analyze policy geared directly towards sustainability-related topics. One might question how does government policy contribute towards social equity or how does policy help improve resource efficiency and limit pollution? However, if that is not possible it is also feasible to look at general statistics relating to social welfare, as well as document environmental and infrastructure expenditures. Additionally, we can also consider the public's perception of government along with how taxes are used both to fund public ventures and maintain social equity.

Economic sustainability

Theories of sustainable economics address many of the same issues as social sustainability, such as equity and balance amongst competing social, economic and environmental interests. Some analyses have focused on the economic and social impact

of the distribution of wealth through an economy⁴⁸⁴. Others have presented models of the impact of living wages on an economy⁴⁸⁵. However, economic sustainability must also address issues specific to economic transactions and the structure of economic systems⁴⁸⁶. Much like social sustainability, theories of sustainable economics often rely upon the idea of creating an economic system which is productive, efficient and maintains social equity while not overburdening the natural environment⁴⁸⁷. For example, many who argue for greater levels of economic equality or living wages implicitly make this argument. Also, sustainable economics concerns itself with the development of indicators which reflect tangible progress in economies. This is evidenced through much of the work done by groups such as GPI Atlantic Canada⁴⁸⁸.

As the prior discussion of the Genuine Progress Index notes, some measures of economic progress represent abstractions which do not reflect actual improvement in people's lives or well being. Indicators such as the gross domestic product and incomes that are not adjusted for the cost of living can often be deceptive in terms of reflecting the actual state of people's lives. With this in mind it is necessary to create indicators which assess both traditional measures of productivity and wealth, such as GDP and per capita

⁴⁸⁴ Wilkinson, R., (2005). *The Impact of Inequality - how to make sick societies healthier*. The New Press.

⁴⁸⁵ Sklar, H., Mykyta, L., Wefald, S., (2002). *Raise The Floor: Wages and Policies That Work For All Of Us*. South End Press.

⁴⁸⁶ Pannozzo, L., Colman, R., (2004). *GPIAC, Working Time and the Future of Work in Canada, GPIAC*. Retrieved: Jul 21, 2007. Website: <http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>

⁴⁸⁷ Heal, G., (1999). *Valuing the Future: Economic Theory and Sustainability*. Columbia University Press.

⁴⁸⁸ Pannozzo, L., Colman, R., (2004). *GPIAC, Working Time and the Future of Work in Canada, GPIAC*. Retrieved: Jul 21, 2007. Website: <http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>

income, along with measures that ascertain less traditional aspects of community and individual welfare such as resource consumption and public health outcomes.

Much like social sustainability, the area of sustainable economics entails a number of basic dilemmas and subjects. The most prominent of these different issues is the relationship between economic efficiency, or productivity, and equity. For the sake of further discussion it is first useful to develop some working definitions of efficiency, productivity and equity. What defines efficiency can typically be divided into two approaches. The first approach is somewhat limited in scope in that it only considers the immediate costs of a transaction for one party, while second is broader and considers indirect costs as well social and environmental considerations. For instance, the first definition might consider the production of consumer goods via low wage labor to be highly efficient from the perspective of the manufacturer. However, when considered in the broader context of the second definition featuring the social and economic costs of low wage labor to society, such labor becomes significantly less efficient since the cost saving of cheap labor to an employer is effectively transferred to the employee and the rest of society through poverty and other social and economic problems associated with lower than living wages. Additionally, this conceptualization of efficiency can be applied to the cost of goods directly. Thus, an inexpensive good efficiently produced via the first conceptualization of efficiency may in fact be quite inefficient when judged relative to the second conceptualization. Thus, we find our selves in a dualistic situation in which one definition of efficiency is frequently at odds with the other. In terms of analyzing various situations it is necessary to be able to properly assess the impact of a certain

activity relative to specific actors and the overall situation. One could make the case the narrow definition of efficiency is frequently relevant to specific actors while the second definition of efficiency is more useful for society-wide analyses and policy making.

Defining productivity follows a similar line of thinking in that frequently the limited conceptualization of productivity disregards other factors that may contribute to the situation and may be less than productive. For instance, an often quoted statistic notes that per capita America's GDP is higher than the French⁴⁸⁹. However, when considered relative to per hour productivity and the number of people in the work force, the French are more productive than the Americans. When this situation is considered broadly, including the high rates of stress-related illnesses, obesity, and other potentially overwork-related problems, one could argue that American society is not as productive as it may superficially appear.

Using this basic example as a starting place one could conclude that to properly measure productivity it is necessary to gauge the context and long term impact of the productive activity. Ultimately, such assessment may conclude that more narrowly defined productivity is not necessarily better in terms of maintaining productivity over the long run. A good analogy for this is measuring the amount of energy released through the explosion of a pound of TNT verses a pound of gasoline. Although TNT will release more energy in a short period of time, the gasoline possesses more energy per

⁴⁸⁹ Using OECD data for 2005 we find that France has a per hour GDP of \$56.6 per hour and the US has a rate of \$49.6 per hour when adjusted for the employment rate. Whereas, the France has a GDP \$28,000 per capita and in the United States it is \$40,100 per capita.

pound and can be used for potentially more productive ends such as running an internal combustion engine.

Finally, equity can be defined in a variety of ways. In a general sense, equity implies something that is fair; in terms of a discussion of sustainability, equity can be seen as alluding to a situation that is fair, or sustainable. Although the subsequent discussions note that equity in things such employment can be conceptualized in a number of ways, fundamentally a situation that is equitable can be seen as one in which individual or group needs are met without interfering with others or the greater environment.

In general there are two ways to view the situation relating to productivity namely efficiency and equity. The conventional manner regards productivity and efficiency as being at odds with equity⁴⁹⁰. For instance, under this assumption a manufacturer would be inclined to pay his or her employees as little as possible so as to maximize profit while minimizing production cost. In this instance the welfare and prosperity of the worker is seen as being at odds with efficiency and productivity. However, an alternative view of this situation is one in which productivity and efficiency are positively related to equity, both relative to individual workers and society as a whole. Using the prior example in a somewhat different manner, we could argue that low wages are in fact quite expensive for both workers and employers since workers have no incentive to work harder than the minimum required to maintain their jobs. Additionally, low wages may also lead the best

⁴⁹⁰ Neumayer, E., (2003). *Weak Versus Strong Sustainability: Exploring The Limits of Two Opposing Paradigms*. Edward Elgar Publishing.

workers to leave for better paying jobs when they get the chance. Also, wages that are not sufficient may also contribute to stress associated with poverty along with a suboptimal standard of living for both workers and those who depend upon them, an outcome which in turn can mean children of those families receive only a limited education, which limits their future productivity.

Although one could argue that productivity could be motivated through managerial aggression, deliberate structural unemployment and constant fear of being fired⁴⁹¹ such methods ultimately prove to be in conflict with meeting the parameters of a sustainable and just society. Thus, it is possible that productivity and efficiency might be best served through maintaining equity in terms of compensation and other factors such as workplace climate and worker involvement in decision making. In this instance the crucial difference between these models is how productivity and efficiency are defined. In the traditional model, what defines productivity and efficiency is relatively limited while a model that considers sustainability is far broader in terms of factors it considers. Ultimately, this breadth in assessment alludes to one of the fundamental strengths of sustainability-related assessment in that models of sustainability have an inclination to consider all relevant factors that may be disregarded in traditional models.

Questions relating to the distribution of resources represent another fundamental dilemma of sustainable economics. Issues of distribution have both a strong practical and normative element. Relative to the practical side of distribution as the example of

⁴⁹¹ Ehrenreich, B., (2001). *Nickel and Dimed, On (not) Getting by in America*. Macmillian.

efficiency and equity highlights, people must have their needs met to be productive members of society. For example, if people are not fed, clothed and adequately sheltered they most likely will not be able to work as well as those who are. When this does not occur suboptimal situations can arise in both individual welfare and society at large. A good example of this is found in developing countries in which levels of economic and social inequality are high. Save for the privileged elite, most people do not possess the resources to better themselves through education or enterprise. In extreme instances they are not nourished enough to function in an adequate fashion. Although there is a discernable logic that can be attached to questions of distribution there is also a normative element that is reflective of differing renditions of society and individuals. As prior discussion have noted various, philosophers and social theorists ranging from Marx⁴⁹² to Rawls⁴⁹³ have postulated as to the proper distribution of wealth and what defines an adequate standard of living for an individual.

Generally speaking, we find that questions of distribution of resources beyond what can be earned through labor fall into two general camps. The individualist perspective would maintain that people are entitled to their property and whatever they can earn beyond that. In contrast, the egalitarian perspective would maintain that for society to be productive or fair individuals should be more or less equal and resources should be distributed based, at least in part, upon who needs them the most. Thus, assessing issues of distribution can vary greatly based upon one's perspective. For instance, if we consider the example of the workers again, we could imagine or present a

⁴⁹² Tucker, R. C., Marx, K., (1978). *The Marx-Engels Reader*. Norton.

⁴⁹³ Rawls, J., (1995). *A Theory of Justice*. Harvard University Press.

number of distribution analyses that vary based upon one's perspective. One analysis might note the need for workers to have a full share in profits of their work and hence a limiting of the employer's profits. A second analysis might have no issues with profit provided the workers are adequately compensated, while a third might have no issues with profit regardless of the level of compensation of the workers. In any of these instances the analysis of distribution is contingent upon the value system of the analyst. However, regardless of the value system of the analyst it is still possible to apply an empirical analysis to most of these situations that considers the costs and benefits of each separate scenario.

In addition to some of the basic debates of sustainable economics there is also the matter of subjects and level of analysis. Generally speaking, analysis in sustainable economics is divided into macro or micro level studies that deal with either the viability of an entire economy or the economic status of individuals. On the macro level it is useful to consider the overall productivity of an economy along with the impact such productivity has on the environment and the welfare of individuals. Relative to micro-economic analysis, issues relating to the nature of employment and also individual economic welfare are of particular interest. Analyses on both these levels can integrate topics and theories discussed above. For instance, an analysis of a country's economy might consider the nature of its productivity measured by traditional indicators such as GDP in addition to analysis that considers the social and environmental cost of economic

activity⁴⁹⁴. It is also useful to consider the relationship between government policy and the functioning of the economy, both regarding individual economics and how economic policy relates to business. For example, it would be useful to see how government regulation influences productivity or how government policy can be used to create an atmosphere conducive to business. There are a number of methods for assessing these factors which include the analysis of taxation and redistribution along with the impact of regulation on business.

Also, analyses of macroeconomic structures can be related to our understanding of the micro economic conditions of individuals. One example of this would be an analysis of structural unemployment that might help explain poverty, economic inequality and a variety of other social and economic behaviors. Relative to micro level analysis, one can gain much insight into individuals' lives through studying how they work, or don't, and how they use their economic resources. Thus, factors such as employment, unemployment and informal labor are of interest. Specifically, it is useful to the greater analysis of sustainability to note levels of equity in individuals' compensation, the stability of their employment, their level of consumption and overall financial status. Additionally, it is possible to view informal, or unpaid economic activity from an economic perspective so as to gain further understanding of how such activities contribute to individuals' economic existence.

⁴⁹⁴ Pannozzo, L., Colman, R., (2004). *GPIAC, Working Time and the Future of Work in Canada, GPIAC*. Retrieved: Jul 21, 2007. Website: <http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>

In addition to these aspects of economic sustainability, measures of sustainable economics also gauge the efficiency of an economy relative to its resource consumption and its impact on the environment⁴⁹⁵. In classical market economics things such as pollution, resource depletion and social exploitation are often ignored or are deemed “externalities” since they do not have a direct economic value assessed to them or the costs of such things are not borne by various parties to the transaction.⁴⁹⁶ However, most approaches to sustainable economics tend to rely on a method which is known as “full cost accounting” which takes into consideration the total economic cost of certain activities even though these may be indirect costs not associated with the immediate participants of a certain transaction⁴⁹⁷. Ultimately, theories of economic sustainability attempt to create equilibrium between the need for economic productivity and the need to maintain an equitable social and environmental system.

Methodological and conceptual issues related to assessing sustainability

Measures of sustainability possess some limitations, both in their theoretical development and in the development of specific indicators. One prominent example of the theoretical limitations of measures of sustainability is in the concept of full cost

⁴⁹⁵ Sustainable Development Commission (2009). *Redefining Prosperity and Resource Productivity*. Retrieved: June, 15, 2009. Website: http://www.sd-commission.org.uk/file_download.php?target=/publications/downloads/030627%20Redefining%20prosperity,%20resource%20productivity.pdf

⁴⁹⁶ Although, there are some notable exceptions to this, analysis of externalities are often considered of secondary importance when compared with primary indicators.

⁴⁹⁷ EcoRecycle Victoria’s Waste Wise Industry Advisor Tool Kit (2009). Retrieved: June, 30, 2009. Website: sustainability.vic.gov.au/.../Waste_Wise_Industry_Advisor_Toolkit_-_Full_Cost_Accounting1.doc 2009.

accounting. Although there are definite methodologies for assessing the impact of various behaviors on individuals or other aspects of society, there remains a certain degree of ambiguity in terms of assessing the “true” impact of an activity. Most of this uncertainty stems some from the complex and somewhat arbitrary nature of theories of sustainability. Since sustainability not only measures discreet items but also pertains to entire systems, it is often difficult to assess the true impact of one activity on the entirety of the system. For instance, a product such as a hybrid car might claim to be more environmentally responsible than a conventional automobile; however, such claims become more ambiguous when one considers the additional cost and hence social exclusion that may occur from such products. Another example might consider the relative value of policy placing emphasis on social welfare and maintaining a high standard of living over resource conservation.

Also, theories of sustainability are often developed with a certain set of values in mind. For instance, quality of life has been a primary consideration of research related to sustainability.⁴⁹⁸ However, the definition of what exactly represents a quality existence is somewhat arbitrary and controversial. For instance, one can ask questions such as whether free time is more valuable than a high material standard of living, or what type of living arrangements (e.g., urban versus suburban living) result in a desirable lifestyle. Thus, the conclusions derived from research that is grounded in one system of values are often in conflict with those based on other ideologies. Also, this problem is compounded

⁴⁹⁸ Pannozzo, L., Colman, R., (2004). *GPIAC, Working Time and the Future of Work in Canada, GPIAC*. Retrieved: Jul 21, 2007. Website: <http://gpiatlantic.org/publications/summaries/workhourssumm.pdf>

by the complex systems that measures of sustainability must assess. It is often the case that conclusions are ambiguous in terms of their ultimate impact on society. For instance, research might conclude that a certain economic activity has a positive impact on social equity while simultaneously interfering with resource consumption, which to some extent can be seen in the availability of inexpensive fossil fuels. In this instance we are confronted with a situation in which there is no definitive resolution to all of the problems associated with the situation. However, such issues ultimately lead to one of the more challenging and fundamental questions of sustainability, which is: What is an equitable balance among different and often competing values within a society?

Aside from the theoretical issues associated with measuring sustainability, many measures of sustainability-related topics have been questioned both in terms of their methodology and objectives. Two rather prominent instances of this are assessing green building approaches and measuring the total effects of products over their lifespan. Relative to green building practices, the standard LEED⁴⁹⁹ criteria for green building along with various measures of energy efficiency⁵⁰⁰ have been widely criticized for only considering certain aspects of construction such as the use of environmentally sensitive materials and basing measurements of energy efficiency on comparative rather than absolute indicators.⁵⁰¹ One example cited by critics of green building is the application

⁴⁹⁹ Gowri, K., (2004). Green Building Rating Systems: An Overview. *ASHRAE Journal*, 46(11), 56-60.

⁵⁰⁰ Atkinson, G., Doubourg, R., Hamilton, K., Musanginah, M., Pearce, D., Yong, C., (1998). *Measuring Sustainable Development, Macro Economics and the Environment*. Edward Elgar Publishing.

⁵⁰¹ Lipsher, S., (August, 30, 2007). Aspen vacation homes: Energy hogs

of green building certification to extremely large houses and vacation homes. In either instance critics note that the certification's disregard for the excessive size or indulgent nature of the structure effectively negates any real environmental gain achieved through other practices such as thick insulation or water-saving fixtures. Ultimately, such criticisms make the case that such indicators disregard broader social, environmental and economic processes and effects. Thus, we must pay attention to the basis of comparison when considering how sustainability is assessed.

Another area where research in sustainability has demonstrated its methodological limitations is in the analysis of product life cycles. Much of the research relating to life cycle analysis of products considers indicators such as the energy required to produce the product, its expected life span, and the ease with which it can be recycled⁵⁰². Although such life cycle analysis possesses a certain degree of utility it highlights one of the drawbacks in many contemporary measures of sustainability. More extensive measures of the impact of a product on the environment as well as economic and social activities might produce differing results. For instance, if the narrower measure were applied to automobiles it would fail to note that the used car market provides an economically viable alternative to new automobiles, and that this market enables lower income people to be able to afford inexpensive transportation. Also, such models often neglect the informal utility of recycled products. Notable examples of this would be recycling of

Sprawling, little-used second homes sock it to Aspen by generating most of its residential greenhouse gases. *Denver Post*.

⁵⁰² Rey, F.J., Martín-Gil, J., Velasco, E., (2004). Life Cycle Assessment and external environmental cost analysis of heat pumps. *Environmental Engineering Science*, 21, September, 591-605.

building materials from demolished buildings or the reuse of parts from wrecked cars. Such practices represent the most efficient form of recycling since materials do not need to be reduced to a basic form through processing. However, recent analyses of product life cycles by-and-large fail to consider such behaviors. If the conclusions of such analyses were implemented, however, the shortcomings of such approaches would become apparent.

In the instances mentioned, narrower measures of product life cycles would effectively rate a car that will last only as long as one owner or a structure in which the building materials cannot readily be reused in the same way as products that can be reused. Perceivably, the net effect on society is to understate the usefulness of certain products and constrain individual behavior to a very myopic range of potential. Ultimately, such practices could prove problematic in terms of their social and environmental consequences since they fail to consider all forms of efficiency.

Many of the limitations of the indicators used in assessing sustainability stem from the relatively new nature of sustainability research combined with the often limited means of researchers studying the topic. However, regardless of the limitations of these indicators they do represent a starting place for future research. Also, they depict the necessity for research related to sustainability to both assess individual variables and contextualize such analysis into a greater framework which addresses issues not directly related to the topic being assessed. Additionally, there is also the issue of the limitations

of forecasting future conditions since it is often difficult to project how complex systems might change over a given period of time, especially over longer periods of time.

Measuring Sustainability

To measure sustainability this study relies primarily upon sub-indicators developed to gauge various aspects of sustainability that are then combined into an aggregate measure of sustainability. Also, for the sake of instrumental comparison and further analysis, this study incorporates other indicators used in prior assessments of sustainability.

The assessment of sustainability requires that both specific indicators and general concepts be measured. Thus, it is necessary for us to be able to measure indicators that deal with specific topics, and combine such indicators to form aggregates that allude to a society's performance on a more conceptual and broader level. Since it is difficult to compare indicators that are significantly different from one another in what they measure, a system must be developed that gives this diversity consideration and yet combines information in a meaningful way. One method of accomplishing this task is to divide indicators into logical categories such as social attitudes or resource usage, standardize the results of such information, and then combine them into an aggregated indicator of a subcategory such as social sustainability. However, two critical issues of this method involve the amount of influence assigned to each indicator along with the scale properties of the measurement used.

The scale used to measure sustainability is based upon an aggregated index that measures various aspects of sustainability which then can be compared on a cross national scale. The primary reason for using a measure of this nature is that it can be derived from existing information and provides both an in-depth and thorough analysis. Also, the use of existing data provides a relatively tangible measure of sustainability when compared with absolute or hypothetical forecasts. Generally speaking, we can divide sustainability assessment and methods forecasting into those methods that use existing measures to compare relative performance, and those methods that comply absolute measures, that is, measures which posit a hypothetical maximum performance through forecasting or abstraction. Although absolute measures of sustainability are not feasible for this analysis, it must be noted that they are ultimately desirable since they reflect what is theoretically necessary to achieve a sustainable society. Relative to the application of this principle to this work, individual variables are assessed on a scale of zero to one, with zero representing an activity that is the least sustainable while one represents the most sustainable behavior or potential behavior.

To calculate such a score from information relating to a variable, the variable is first assessed in terms of its absolute range. For instance, infant mortality might range from 3 to 30 deaths per 1,000 births. Thus, the observed variability for such an indicator would be 27. Once the range for a variable is assessed, data relating to individual scores is compared to the range from zero and scaled to the standard measure. For instance, a country with an infant mortality rate of 15 would have a standardized score of approximately .5, and a country with an infant mortality rate of 3 would have a score of

approximately .1. This methodology allows us to create a standardized system of scaling variables that considers both their relative position and the performance in terms of absolute measures. Using the example of infant mortality we can conclude that a country with an infant mortality rate of 3 outperforms one with a rate of 15; however, it is still not optimal when compared with the hypothetical ideal of a rate of 0.

These measures take into consideration the directionality of the variable being assessed. In the instance of infant mortality, it is the case that the higher rate the less sustainable the society. To account for this negative effect, the initial standardized value is subtracted from one. The utility in using a measure of this nature is that it allows for a standard measure that depicts both the absolute value of an indicator while depicting the comparative range of subjects sampled through noting both the position of a variable on an absolute scale and noting its position relative to other variables. Thus, a highly variable indicator will reflect such variation in its standardized score while a less variant index will do likewise. Once individual scores are calculated the values can then be added and subsequently ranked to create an index of a subcategory of sustainability. Finally, it also is possible to use this methodology on the subcategory scales to ultimately create an all encompassing index of sustainability. This is accomplished through standardizing the values of each sub-category, and then adding the result.

The utility of using this methodology is that it provides a simple approach to gauging the relative standing of a country on a number of indicators that vary in topic and scope. To help highlight the utility of this methodology consider the following example:

We are presented with an instance of having to compare apples, oranges and cars and bicycles. Obviously, these items share little in common. However, if we create an index for an individual variable such as apples and then combine the variables into nested categories such as “fruit” or “mechanical objects” it is then possible to create an index that assigns a reasonable value to the quality of a set of things when judged by a given set of criteria.

Time use

Time use represents the second major aspect of this analysis. Time use faces methodological challenges similar to sustainability in that it must be judged relative to a complex system that considers social, economic and environmental factors. However, unlike measures of sustainability, analyses of time use are ultimately contingent upon one scale of measurement (time). Regardless of its apparent simplicity, the measurement of time use consists of differing methodologies, varying scope, and varying contexts, all of which possess certain strengths and limitations.

The scope of time use research is also similar to assessments of sustainability in that it can occur at an individual level using variables such as work and leisure time. Alternatively, analysis can occur in groups such as families or communities using data relating to how families use their time or through analyzing how community structure affects such things as commuting or civic engagement. Additionally, at the national level aggregated data on any of the aforementioned variables such as work time can allude to their overall status at a national level. At each of these respective levels of analysis it is

possible to analyze the data relative to a variety of factors that are relevant both to time use and also issues of sustainability.

Aside from issues relating to the scope of time use assessment, meaningful analyses of time use must be contextualized in social, economic and environmental terms. Through placing time use research into these contexts it is possible to gain a greater understanding of the factors governing time use. With this in mind it is also useful to gain some understanding of the basic theoretical and methodological issues surrounding these relationships.

Generally speaking, analyses of time use attempt to establish the impact of certain patterns of behavior both on time use itself and other variables such as money, social relationships or the environment. Although time use in and of itself represents somewhat of an abstraction, analyses can gain much from understanding the context within which time is used and what value it has relative to other factors such social relationships or economic activity. Thus, it is possible to describe time use patterns in terms of economic variables, such as work and also in compensation.

Additionally, time use provides economic analyses with a pervasive variable through which to judge situations not typically assessed in an economic fashion. For instance, time use can be one component of analyzing the economic value of informal labor along with any number of other variables. Additionally, because such analyses can help us understand the relative balance between time use and money it is also possible to

analyze money/time dynamics. One good example of this is Goodin et al.'s⁵⁰³ analysis of “discretionary time” in which they postulate that neither money or free time are particularly meaningful for most people without some amount of the other.

One can also incorporate other social and environmental variables into an economic analysis of time use. For instance, we might assess the impact of overwork in terms of health outcomes, social relationships and monetary costs. Along similar lines an analysis of time use can focus primarily on social or environmental variables. Socially oriented time use studies can help further our understanding of intra-family dynamics such as child rearing, marriage- and divorce-related issues. Additionally, we can use analyses of time use to understand factors governing group or community social activity such as social capital. Aside from social activity we can consider other social factors such as the influence of infrastructure on time use behavior along with exploring the relationship between various policies and time use patterns. Finally, we can consider time use relative to environmental factors such as pollution and resource consumption. Environmental features such as geography and climate affect how people use their time. Regardless of the specific nature of a time use study it is fundamentally necessary to accurately define and contextualize the methodology and subsequent findings into a greater framework.

Most studies of time use consist of a measurement of activity on a daily basis or over some other duration of time. Studies such as the American Time Use Study⁵⁰⁴ or the

⁵⁰³ Goodin, R., Rice, J. M., Parpo, A., Ericksson, L., (2008). *Discretionary Time*. Cambridge University Press.

data compiled for the Multinational Time Use Study⁵⁰⁵ consist of data on daily time use that is collected through diaries kept by randomly selected respondents. Although these data possess a great deal of utility for certain applications, they are limited both in terms of not noting long term trends in behavior and not being of a cross national and longitudinal nature. For a study that attempts to gauge cross national time use and, primarily emphasizes working behavior, the use of annual and weekly data are more applicable to a study of this nature. One can attribute this reasoning to the fact that daily time use studies do not take into account weekly or seasonal variations in work along with periodic events such as vacations.

One prominent example of what occurs when one does not take this into consideration can be found in a study by Mark Aguiar and Erik Hurst⁵⁰⁶. In the Aguiar and Hurst study they concluded that American workers have more free time than their predecessors in the 1960's. However, this analysis failed to note the effects of rising unemployment on workers with less education along with the fact that Americans take less annual vacation time than in the 1960's. Granted there is utility in using daily time use activities to assess behaviors such as daily leisure and commuting time, a study that gauges the effects of work and time use on society is best represented through measuring weekly hours, total annual hours worked, annual vacation time and time, use patterns exhibited over a life time.

⁵⁰⁴ American Time Use Survey (2007). Retrieved: July, 16, 2007. Website: <http://www.bls.gov/tus/>.

Multinational Time Use Study (2007). Retrieved: June, 15, 2007. Website: www.timeuse.org/mtus/documentation/docs/OnLineDocumentation.pdf

⁵⁰⁶ Aguiar, M., (2007). Measuring Trends in Leisure: The Allocation of Time Over Five Decades, *Quarterly Journal of Economics*, 122(3), 969-100.

Sample Selection

Countries studied in this analysis consist of developed or high income nations as defined by criteria developed by the World Bank⁵⁰⁷. The rationale for using only developed nations in this analysis stems from two primary reasons. First, the developed countries tend to be more consistent and stable than developing countries. Thus, there exist circumstances that provide enough stability for research to discern the underlying structures being explored in this work. In contrast, in less developed nations it often is the case that conditions can be so unbalanced and volatile that observed trends reveal little about the overall sustainability in a country. For instance, the level of material efficiency tends to be quite high in many developing economies. It often is the case that many people exist through picking through trash for recyclables that then can be sold. Although this and other behaviors represents a manifestation of a sustainable behavior, when the actions are considered in the context of the society in which they occur it becomes apparent that they represent little more than a manifestation of unsustainable social trends such as inequitable economic systems and repressive social structures.

The second reason for excluding the developing world from an analysis of time use and sustainability is for the simple reason that reliable, complete information across a wide range of measures on these countries does not exist and the political, social and economic structures of these nations are so diverse that analysis that includes developing nations would need to include so many background variables that it would be

⁵⁰⁷ Sachs, J., (2005). *The End of Poverty*. The Penguin Press.

unmanageable. There is also the problem of government manipulation of some of the reported statistics in non-democratic regimes.

The analysis of the developed nations being studied here consists of both an analysis of all countries in the sample and various sub-analyses based upon specific selection criteria such as economic or cultural structure. As discussed in chapter two, the nations and regions being studied here possess traits which set them apart from others. In general this research adheres to the models of liberal, traditionalist and egalitarian welfare states. As explained in Epsing-Anderson's work, *The Three Worlds of Welfare Capitalism*,⁵⁰⁸ much of what explains the structure of a country's welfare state and for that matter its government, and economy and a number of other social structures is its social ideology. As mentioned before, the liberal, traditionalist or egalitarian model of a welfare state is rooted in either a social ideology that endorses capitalism (liberal), traditionalist⁵⁰⁹ social values, or egalitarian social values. Epsing-Anderson then uses this basic assumption to describe how the welfare state has developed differently in nations of different cultural backgrounds. For instance, liberal countries tend to take the perspective that welfare and entitlements should be minimal and actions of last resort, whereas traditionalist countries tend to take the position that social programs should be geared towards preserving the family and the traditional social structure of the country. As described in Epsing-Anderson's book, the liberal, traditionalist, and egalitarian

⁵⁰⁸ Epsing-Anderson, G., (1990). *The Three Worlds of Welfare Capitalism*. Princeton University Press.

⁵⁰⁹ Epsing-Anderson defines traditionalist cultures as those that are centered on traditional social institutions such as the family and attempt to maintain the traditional structure of a country both through investing in people and social institutions.

typology is more of a descriptive heuristic than an absolute categorization. For instance, a country such as Ireland possesses certain cultural traits that allow it to be described as being traditionalist. However, Ireland also possesses an economic system and various other cultural traits that make it more liberal in nature. When judged as a whole, however, one can say with confidence that Ireland is more of a liberal country with some traditionalist values.

Although some have been critical of the relatively arbitrary nature of Epsing-Anderson's typology⁵¹⁰ along with the issue of constantly evolving nature of social policy and social structures, it has been widely accepted as a useful conceptual tool through which various analyses of welfare states and governmental systems can be done. Generally speaking, countries fall into one category based primarily upon how their cultural values and economic systems influence their welfare policy. In addition to influencing how cultural and economic values have influenced the development of welfare policy, it is possible to view Epsing-Anderson's typology as alluding to the overall cultural and economic structure of a country. Relative to the greater analysis of time use and sustainability it is reasonable to presume that Anderson's typology can be used as a proxy for various determinant factors of a country such as its culture, policies, and economy. Although Anderson's typology is a useful conceptual tool for understanding the net effect of specific policy, social or economic variables, it represents only an intermediary to the greater analysis of time use and sustainability. Thus,

⁵¹⁰ Menahem, G., (2007). The de commodified security ratio: A tool for assessing European social protection systems. *International Social Security Review*, 60(4), 69-103.

comparisons are intended to ascertain the influence of these distinguishing factors on time use and a country's overall performance relative to issues of sustainability.

Since this work deals with the issue of American exceptionalism, a comparison of the United States with Canada can provide much insight in to the distinguishing features of the United States. Canada provides an excellent comparison to the United States since it is similar in geographic structure, culture and historical development. However, Canada possesses many features that make it more resemble other developed countries such as those in Europe. Specifically, Canada possesses a more extensive welfare state, greater levels of social equity, and more limited consumption patterns. Considering these circumstances, a comparison of the United States and Canada can help explain the nature of American exceptionalism along with helping us understand how the United States compares to other nations.

Another prominent analysis in this work focuses on the difference between countries that can be described as possessing a liberal economy and limited welfare state and those with a more controlled economy and extensive welfare state. The United States, Great Britain, Canada, Australia, Ireland and New Zealand represent states that possess a liberal orientation. Traditionalist countries such as France, Germany, Japan and Italy can be considered somewhere in between, while other countries such as those in Scandinavia can be considered examples of less liberal countries with comprehensive welfare states.

Along these lines it is useful to explore the influence of Anglo Saxon culture, through a comparison of Great Britain with Europe and a comparison of all Anglo-Saxon nations with the other countries being analyzed. These comparisons are done in an effort to test the validity of the hypothesis that there are cultural aspects of protestant culture that make such cultures' version of capitalism unique when compared with other cultures. Also it is possible to contextualize this proposition to Anderson's typology since the Anglo Saxon countries all can be described as being liberal welfare states.

Additional analysis

It is also possible to use the data from this measure to perform a number of statistical analyses which then can be used to further substantiate the hypotheses of this work. Although these tests are not performed in this research due to the interest of maintaining some semblance of brevity, it is still useful to discuss them in the context of future research. The most prominent of these analyses consists of testing the data used for consistency of rank. Using a Multivariate Analysis of Variance to test the scores of countries sampled it is possible to test the hypothesis that countries generally perform consistently at a certain level of sustainability. Using this approach it is also possible to test the hypothesis that there is likely a strong relationship between performing well in one area of sustainability and performance throughout the other measures. Although correlations are presented for this analysis, a factor analysis would be helpful in revealing more systematic trends in the variables studied. Finally, it is possible to do a factor

analysis of the countries studied to determine if certain groups of countries tend to cluster around a certain level of sustainability or demonstrate some other pattern.

Variable Categorization

The selection categories for aggregate analysis are based upon both how individual variables relate to one another on a conceptual level, and how they fit into the greater context of the analysis at hand. Also, by grouping variables based upon certain theoretical or methodological approaches it allows us to compare both traditional and non-traditional measures of performance. For instance, we can compare how traditional measures of economic performance, such as GDP growth, relate to non-traditional measures such as resource consumption per GDP dollar or the total cost to society of a certain type of economic activity. Also, aggregations are categorized in such a manner as to permit the hierarchical organization of categories. For instance, the average cost of housing can be seen as describing an aspect of an individual's economic existence while simultaneously contributing to an understanding of the greater economic situation in the country being studied.

Indicator Categorization

The following sections outline the variable selection, general categories of analysis along with the subcategories contained therein. The indicators are divided into both scale items which are factored into the general indices of time use and sustainability along with individual items which are assessed separately. This discussion of categorization not only outlines the aggregation of the variables being analyzed, but it

also can be seen as providing a conceptual framework that can help us contextualize the questions being asked in this work.⁵¹¹

Social Indicators Involving Sustainability

Indicators that relate to various aspects of individual and group social behavior represent one of the three major categories of analysis. Within the scope of social indicators, the analysis is divided into *individual social indicators*, *general social statistics*, *social attitudes* and measures of *social capital*.

Social attitudes represent an aspect of sustainability that, although not as tangible as other indicators, plays an important role in both how people appraise their own existence and how they function as individuals and communities. Social attitudes are of particular importance to our understanding of sustainability since some of them allude to the strength of a country's social networks and cultural identity. As various studies have noted,⁵¹² social attitudes are highly correlated to both the quality of individual's lives and how people contribute to society as a whole through things such as social capital, civic involvement and political engagement. Some social attitudes may cast light on people's satisfaction with both social institutions and society's ability to provide them with a

⁵¹¹ For a more detailed description of the analysis and variable selection refer to the appendix on variable coding and analysis.

⁵¹² Dasjupta, P., Serageldin, I., (2000). *Social Capital a Multifaceted Perspective*. International Bank for Reconstruction and Development/World Bank.
Brehm, J., Rahnm W., (1997). Individual-Level Evidence for the Causes and Consequences of Social Capital. *American Journal of Political Science*. 41(3), 999-1023.

meaningful and quality existence. Also, social attitudes may influence other aspects of sustainability such as energy use and conspicuous consumption.

A number of variables are used to gauge how various countries fare relative to their population's attitudes about various subjects. For this analysis social attitudes are divided into two categories. The first deals with people's perception of their own safety and welfare⁵¹³. Thus, things such as perception of safety while walking in the dark are considered. The second group is broader in that it considers general indices that relate to perceived quality of life. It is reasonable to argue that a content and happy populace represents a fundamental aspect of a sustainable society. Although, there are obviously other indicators of social attitudes, due to limitations in either in the availability of data or a desire to maintain some degree of parsimony they were omitted.

⁵¹³ In addition to indicators of social attitudes of personal safety, the section on individual economic indicators considers social attitudes relating to issues of satisfaction with one's personal financial position.

Social Attitudes

Scale items:

Perception of safety burglary⁵¹⁴

Perception of safety when walking in the dark

Freedom in decision making⁵¹⁵

Happiness net⁵¹⁶

Life satisfaction⁵¹⁷

Life satisfaction inequality⁵¹⁸

Social capital is a concept that relates to the level of people's involvement in the community and other groups and is yet another area that can be viewed as relating to social sustainability since much research suggests that social capital and other pro-social

⁵¹⁴ How likely people feel they are safe from being robbed at home.

⁵¹⁵ Mean ratings on a ten-point scale ranging from have no freedom in individual decisions to complete freedom.

⁵¹⁶ This statistic is compiled from responses to the survey question: "Taking all things together, would you say you are: very happy, quite happy, not very happy, or not at all happy?". The "Happiness (net)" statistic was obtained via the following formula: the percentage of people who rated themselves as either "quite happy" or "very happy" minus the percentage of people who rated themselves as either "not very happy" or "not at all happy".

⁵¹⁷ Most scores are based on responses to the following question: "All things considered, how satisfied or dissatisfied are you with your life-as-a-whole now? 1 dissatisfied to 10 satisfied" (item code O-SLW/c/sq/n/10/a). Scores of ten nations are based on responses to a somewhat different question: "Suppose the top of the ladder represents the best possible life for you and the bottom of the ladder the worst possible life. Where on this ladder do you feel you personally stand at the present time?" The response was rated on a ladder scale ranging from 0 to 10 (item code O-BW/c/sq/l/11/c). The scores were transformed using the information of nations in which both this item and the above question on life-satisfaction had been used in about the same years

⁵¹⁸ This data are indicative of how much citizens differ in enjoyment of their life-as-a-whole. Life-satisfaction is assessed by means of surveys in samples of the general populations. Scores may be too low in some countries, due to under sampling of rural and illiterate population. In this ranking the focus is not on the level of happiness in the country, but on inequality in happiness among citizens. Inequality in happiness can be measured by the dispersion of responses to survey-questions. The degree of dispersion can be expressed statistically in the standard deviations and survey items rated on a 10-step numerical scale are particularly useful for that purpose. Most scores are based on responses to the following question: "All things considered, how satisfied or dissatisfied are you with your life-as-a-whole now? 1 dissatisfied to 10 satisfied".

individual behaviors contribute to the well being of social groups and individuals⁵¹⁹.

Along lines that are similar to social attitudes, social capital may be representative of the strength of a country's social institutions and culture⁵²⁰. Although there are many definitions of and methods for assessing social capital, one method is to measure social capital through both direct individual involvement in social institutions along with measures of the strength of certain institutions that can be seen as contributing to an individual's ability to participate in the community⁵²¹.

Social capital/ Political efficacy

Scale items:

Civil and political liberties⁵²²

Parliamentary elections voter turnout⁵²³

Electoral turnout presidential⁵²⁴

Confidence in social institutions: Armed forces⁵²⁵

Confidence in social institutions: Church⁵²⁵

Confidence in social institutions: Civil Service

Confidence in social institutions: Companies

Confidence in social institutions: Legal system

Confidence in social institutions: Parliament

⁵¹⁹ Newton, K., (1997). Social Capital and Democracy. *American Behavioral Scientist*, 40(5), 575-585.

Coleman, J., (1988). Social Capital in the Creation of Human Capital. *American Journal of Sociology*, Supplement 94, S95-S120.

Brehm, J., Rahnm, W., (1997). Individual-Level Evidence for the Causes and Consequences of Social Capital. *American Journal of Political Science*, 41(3), 999-1023.

⁵²⁰ Bolin, B., Hackett, E. J., Harlan, S. L., Kirby, A., Larsen, L., Nelson, A., Rex, T. R., Wolf., S., (2004). Bonding and Bridging: Understanding the Relationship between Social Capital and Civic Action. *Journal of Planning Education and Research*, 24, 64-77.

⁵²¹ Dasjupta, P., Serageldin, I., (2000). *Social Capital a Multifaceted Perspective*.

International Bank for Reconstruction and Development/World Bank.

⁵²² Units: Index Ranging from 7 (High Levels of Liberties) to 1 (Low Freedom House, Freedom in the World 2000-2001, New York: Freedom

⁵²³ Percent turn out parliamentary elections, case excluded if data exists for presidential turnout

⁵²⁴ Percent turnout presidential election, The United States was the only valid example

⁵²⁵ Proportion of people in 1990s survey expressing confidence in this social institution, World Values Survey (2007). Retrieved: July, 25, 2007. Website: www.worldvaluessurvey.org/.

Confidence in social institutions: Police
Confidence in social institution: Press
Confidence in social institutions: Trade unions
Members of Voluntary organizations: Charity⁵²⁶
Members of Voluntary organizations: Education
Members of Voluntary organizations: Environmental
Members of Voluntary organizations: Political Parties
Members of Voluntary organizations: Professional Organizations
Members of Voluntary organizations: Sports
Members of Voluntary organizations: Unions
Attended a political demonstration⁵²⁷
Joined a boycott⁵²⁸
Signed a petition⁵²⁹
Somewhat interested in politics⁵³⁰
Trust in other people⁵³¹
Very proud of nationality⁵³²
Will fight for country⁵³³

⁵²⁶ Proportion saying they are active members of voluntary organizations in this category, 1990s. World Values Survey (2007). Retrieved: July, 25, 2007. Website: www.worldvaluessurvey.org/

⁵²⁷ Proportion of respondents in 1990s World Values Survey who have ever attended a demonstration. World Values Survey (2007). Retrieved: July, 25, 2007. Website: www.worldvaluessurvey.org/

⁵²⁸ Proportion of respondents in 1990s survey who have ever joined a boycott World Values Survey (2007). Retrieved: July, 25, 2007. Website: www.worldvaluessurvey.org/

⁵²⁹ Proportions in 1990s World Values Survey (2007). Retrieved: July, 25, 2007.

Website: www.worldvaluessurvey.org/
responding that they signed a petition.

⁵³⁰ Proportions in 1990s survey responding that they are somewhat interested in politics. World Values Survey (2007). Retrieved: July, 25, 2007. Website: www.worldvaluessurvey.org/

⁵³¹ Percentage in 1990s surveys agreeing that people can be trusted. World Values Survey (2007). Retrieved: July, 25, 2007. Website: www.worldvaluessurvey.org/

⁵³² Percentage responding in 1990s survey that they were very proud of their nationality. World Values Survey (2007). Retrieved: July, 25, 2007. Website: www.worldvaluessurvey.org/

⁵³³ Percentage in 1990s survey responding that they are willing to fight for their country. World Values Survey (2007). Retrieved: July, 25, 2007. Website: www.worldvaluessurvey.org/

Indicators of individual social welfare

Individual social indicators, such as education and health, represent a category of variables that can help us in our understanding of how various types of individuals live both in terms of the features inherent to themselves and how they fit into the greater workings of society. As the extensive body of research on topics such as education⁵³⁴ or individual health⁵³⁵ shows, the welfare of individuals in terms of their social welfare and physical health is extremely relevant to issues of sustainability since these variables dictate much about how economically and socially productive an individual is. Thus, we can infer that a sustainable system is one in which individuals' needs are met relative to health, and their potential to be educated is exploited to a satisfactory degree. As the list below notes, we are primarily interested in an individual's level of education, academic aptitude, general health status and health outcomes for selected groups. Additionally, we can infer the level of priority a country places on things such as health by noting the amount of funding both from private and public sources. By incorporating these variables into a greater analysis of sustainability, it is possible to compare the lives of people from different countries with one another along with creating a relatively comprehensive image of how well people within a certain nation live.

⁵³⁴ Foster, J., (2001). Education as sustainability. *Environmental Education Research*, 7(2), 153-165.

⁵³⁵ Hemingway, H., Nicholson, A., Stafford, M., Roberts R., Marmot, M., (1997). The impact of socioeconomic status on health functioning as assessed by the SF-36 questionnaire: the Whitehall II Study. *American Journal of Public Health*, 87(9), 1484-1490.

Education

Scale items:

Average years of schooling
Percent population with a high rate of literacy
Mathematical literacy⁵³⁶
Proportion of 20 year olds in tertiary education
Scientific literacy⁵³⁷
Spending per secondary school student
Total tertiary enrollment⁵³⁸

Health

Scale items:

Private health care funding per capita
Life expectancy total
Infant mortality rate, total
Obesity rate
Percentage of life lived in ill health women
Percentage of life living in ill health men
Percentage of not reaching 65 females
Percentage of not reaching 65 males
Standard Non-Disability Active Life Years rate⁵³⁹
Standard Death Rates

Individually considered items:

Obesity rate
Psychological problems rate per 100,000
Infant mortality
Private healthcare funding per capita⁵⁴⁰

⁵³⁶ Generally, defined as basic conceptual competency at mathematics related topics. For further explanation see: OECD. Assessing Scientific, Reading and Mathematical Literacy A Framework for PISA 2006.

⁵³⁷ Generally, defined as basic conceptual competency at scientific related topics. For further explanation see: OECD. Assessing Scientific, Reading and Mathematical Literacy A Framework for PISA 2006

⁵³⁸ Gross enrolment ratio, tertiary level is the sum of all tertiary level students enrolled at the start of the school year, expressed as a percentage of the mid-year population in the 5 year age group after the official secondary school leaving age.

⁵³⁹ Years of non-disability life, World Health Organization (2007). Retrieved: August, 12, 2007. Website: www.who.org

⁵⁴⁰ This item is considered relative to a greater discussion of inequality and access to essential social services.

Group social indicators

Group social indicators elevate the level of analysis from the individual to the group. In a fashion similar to individual indicators of social welfare, indicators of group social welfare can be related to sustainability via a number of ways⁵⁴¹. Although some indicators such as divorce can be considered an individual issue, for the sake of this analysis they are considered on the group level since they involve a number of individuals and have broader social consequences according to some observers⁵⁴².

Additionally, other individual variables such as the child poverty, age of first child birth and the rate of abortions can be seen as being indicative of the welfare of various social groups. For instance, a high rate of child poverty alludes to both the low standard of living of poor children in a society, along with potentially a high level of inequality and lack of adequate social services. Along these lines other variables such as the amount of crime, the rate of imprisonment and the number of deaths due to the maltreatment of children allude to both the status of certain groups in society and the overall functioning of various social systems. Understanding social indicators at a group level enables us to comprehend both the structure and the impact of various group-level social phenomena both on society and individuals. Many group-level social indicators such as crime or poverty are directly applicable to individuals. However, to understand their true impact of these forces it is necessary to understand how they influence society on a national

⁵⁴¹ Hamilton, K., Ruta, G., (2006). *Measuring Social Welfare and Sustainability*, OECD. Retrieved: December, 12, 2008. Website: http://crell.jrc.ec.europa.eu/Well-being/papers/Ruta%20&%20Hamilton_Measuring%20Social%20Welfare%20and%20Sustainability%20v2.pdf

⁵⁴² Additionally, one could argue that things such as infant mortality and life expectancy are social phenomena. Regardless of such facts place with in the sub analysis they have the same impact on the greater analysis.

level. As the list below notes, social indicators apply to a variety of segments in society such as children, working adults, and family members.

Group social indicators

Scale items:

Prisoners per capita

Total crimes per capita

Child poverty

Age of first child birth⁵⁴³

Abortions per capita

Child maltreatment deaths⁵⁴⁴

Teen birth rate

Divorce rate

Infrastructure/Transportation

Infrastructure as mentioned in prior discussions influences both individual time use patterns and the overall level of sustainability in society. As the literature on transportation and infrastructure notes, there is an extensive relationship among various aspects of transportation infrastructure and sustainability. For instance, issues related to transportation and energy efficiency are of great importance since they are indicative both of a society's level of resource consumption along with how such consumption relates to infrastructure and transportation technology⁵⁴⁵. Additionally, there are many secondary considerations such as the relationship between sprawl, time spent driving, and health outcomes⁵⁴⁶. Also, along these lines the efficiency of transportation and transportation

⁵⁴³ This negative scale item was selected since it is presumably an indicator of how established parents are prior to the birth of their first child. The lower the age the presumably the less established.

⁵⁴⁴ Child maltreatment deaths per 100,000 population under 15.

⁵⁴⁵ The Transportation Research Board, Of the National Academies Of Science (2009). Retrieved: September, 20, 2009. Website: <http://www.trbsustainability.org/>

⁵⁴⁶ Ewing ,R., Schmid, T., Killingsworth, R., Zlot, A., Raudenbush, S., (2003). Relationship Between Urban Sprawl and Physical Activity, Obesity, and Morbidity. *The Science of Health Promotion*, 18 (1), 47-57.

related infrastructure also has a tremendous impact on the economy of a nation⁵⁴⁷ along with its ability to respond to adverse conditions⁵⁴⁸.

With this in mind it is possible to use infrastructure related statistics to infer various aspects of time use and sustainability that cannot be measured directly or for which data do not exist. For instance, although it is possible to measure commuting time directly, if such data is unavailable, we might infer commuting time through comparing average amounts of passenger travel. Relative to the selection of specific variables, variables that relate to transportation such as fuel consumption, mode of transport and distance traveled can help us understand the structure of a country and how efficiently it operates. For instance, rail transport is usually considered more efficient than automobile transport⁵⁴⁹. Additionally, the more distance freight travels on average alludes to a less sustainable society dependant upon transporting goods long distances. Also, it is useful to look at the level of urbanization and population density as indicators of the efficiency of a nation's infrastructure since it is reasonable to assume denser population centers will be more efficient by reducing the number of vehicle miles traveled per person, reducing the amount of pavement needed to connect the population and in achieving a density necessary for public transit.⁵⁵⁰

⁵⁴⁷ Winston, C., (1991). Efficient Transportation Infrastructure Policy. *Journal of Economic Perspectives*, 5(1), 113-127.

⁵⁴⁸ Litman, T. (2006). Lesson from Katrina and Rita: What major disasters can teach transportation planners. *Journal of Transportation Engineering*, 132(1), 11-18.

⁵⁴⁹ Fuel efficiency in transportation (2009) Retrieved: September 20, 2009. Website: http://en.wikipedia.org/wiki/Fuel_efficiency_in_transportation.

⁵⁵⁰ Although some would argue that higher densities result in more automobile congestion, it is equally plausible to argue that this is offset by the potential for the availability of public transit.

Infrastructure/Transportation

Scale items:

Total energy consumption by mode of transport, per capita

Freight by mode of transport, per capita

Road traffic, km per capita

Road fuel consumption, per capita

Individually considered items:

Urban density

Energy consumption

Government

Government plays an important role both in individual's lives and in the operation of society at large. Additionally, government can act as a regulatory mechanism that can implement policies geared towards achieving sustainability or equity in time use⁵⁵¹. Of particular interest is the role that government policy plays in the social and economic existences of individuals. Also of interest is the role of government in regulating the economy and the overall impact of government institutions on society. Specifically, data relating to taxation and social expenditures are of particular use to this research.

Countries with progressive taxation systems and managing nonrenewable resources through taxation may exhibit more sustainable behaviors than those which do not since both economic inequality and high levels of non-renewable resource consumption can be considered antithetical to the goals of sustainability⁵⁵².

⁵⁵¹ For instance Goodin, R, Rice, J. M., Parpo A., Ericksson L., (2008). *Discretionary Time*. Cambridge University Press.

explains in extensive detail how government policy effects time use. See also: Constanza, R. Wainger, L, (1992). *Ecological Economics: The Science and Management of Sustainability*. Columbia University Press. For a discussion of how policy can facilitate sustainability.

⁵⁵² Common, M., (1992). Taxation and Sustainability. *The Economic Record*, 68(2), 31-42.

To assess the performance of a government, we first consider both the amount governments expend per capita on non-military related things such as social spending and infrastructure. Additionally, it is also useful to consider the perceived strength of a nation's public institutions and the amount of debt a government holds as a percentage of GDP. Relative to the latter it is assumed that governments that run up a large debt relative to GDP are acting in a way that may lead to eventual insolvency⁵⁵³. Although by no means perfect or refined indicators of how a government can facilitate sustainability, these measures do give some indication of a government's performance relative to these variables.

The analysis of taxation consists of two general types of variables. First, there are variables that allude to the management of various resources such as fuel and consumer goods. Second there are variables that relate to who within society holds how much of the tax burden. This section includes both simple variables that note things such as tax bracket and more complex variables that adjust tax burden relative to GDP and purchasing power parities. Through using these approaches it is possible to gain a relatively good idea of how much the average individual or other entity such as a business pays in taxes. Also, it is possible to consider these interpretations relative to government expenditures such as social expenditures. Finally, social expenditures are considered relative to a number of entities such as individuals, municipalities and families. From this information it is possible to gain some understanding of how many resources a nation is investing in various groups.

⁵⁵³ However, one can argue that some amount of debt can be useful if it is invested properly and is relatively small compared to the nation's resources.

Government

Scale items:

Government expenditures per capita

Public institutions index⁵⁵⁴

Government Debt as percent of GDP

Taxes

Scale items:

Taxation Diesel⁵⁵⁵

Taxation Gasoline⁵⁵⁶

Marginal Taxation Rate⁵⁵⁷

Tax brackets⁵⁵⁸

VAT taxes⁵⁵⁹

Corporate Tax Rate

Individually considered items:

Percent tax burden by income group⁵⁶⁰

Tax rate for income bracket and tax wedge⁵⁶¹ for individuals and families

Likely personal tax burden as percent of whole, and Rank

Tax as percent of GDP and individual taxes as percent GDP

Real GDP adjusted average tax USD, PPP/GDP adjusted average tax⁵⁶²

⁵⁵⁴ Public institution index indicates the state of the country's public institutions as judged through the World Economic Forum's Executive Opinion Survey along with other data relating to the functioning of nations public institutions. The rankings are calculated from both publicly available data and the Executive Opinion Survey, a comprehensive annual survey conducted by the World Economic Forum together with its network of Partner Institutes. The survey looks at a number of variables ranging from people's overall impressions of a country public institutions to various specific measures such as levels of corruption, effectiveness at delivering services, and other measures of efficiency. World Economic Forum (2005). *Global Competitiveness Report 2004-2005*.

⁵⁵⁵ Expressed as a percentage of total cost.

⁵⁵⁶ Expressed as a percentage of total cost.

⁵⁵⁷ National average marginal taxation rate.

⁵⁵⁸ Marginal taxation rates based upon bottom, middle and top third of income brackets expressed percentages for the average income tax for that group.

⁵⁵⁹ Value Added Tax, i.e. sales tax.

⁵⁶⁰ For this analysis the distribution of income groups is divided into bottom, middle and top of distribution.

⁵⁶¹ 1. The difference between before-tax and after-tax wages. The tax wedge measures how much the government receives as a result of taxing the labor force. This variable is considered both relative to individuals and families.

2. A measure of the market inefficiency that is created when a tax is imposed on a product or service. The tax causes the supply and demand equilibrium to shift, creating a wedge of dead weight losses.

Social Expenditures

Scale items:

Net social expenditures⁵⁶³

Education as % of total government expenditures

Municipal waste expenditures

Public health care funding per capita

Health care funding⁵⁶⁴

Total healthcare expenditure as percentage of GDP

Education Expenditure as percent of GDP

Childcare Expenditures

Social Expenditures Per Child⁵⁶⁵

State Expenditure on Childcare Support

Childcare Expenditure As percent of GDP

Family Benefits⁵⁶⁶

Individually considered items:

Social expenditures as percent government expenditures, total GDP and PPP adjusted in USD⁵⁶⁷

Labor

Labor-related statistics are of obvious importance to an analysis of work and time usage. Although labor is related to other categories such as time use and economic activity, because of its importance to this analysis it is treated as a separate subject. Specifically, labor variables that are indicative of some aspect of time use such as level of employment and unemployment are considered. Other labor variables are also selected since they can give some insight into various aspects of a nation's level of social and

⁵⁶²These calculations are based upon either an extrapolation of actual amount paid in taxes based upon GDP and average tax burden, or, GDP, average tax and Purchasing power parity.

⁵⁶³ Social expenditures per capita USD.

⁵⁶⁴ Per capita USD.

⁵⁶⁵ PPP adjust USD.

⁵⁶⁶ Total percent of income or value of child care, family social services, cash benefits.

⁵⁶⁷ OECD (2000). *Graph of part time labor rates industrialized countries*. Retrieved: January, 12, 2008. Website: http://www.oecd.org/document/9/0,3343,en_2649_34637_38141385_1_1_1_1,00.html

economic sustainability. For example, noting that a country has a high rate of unemployment may help explain various aspects of social and economic inequality.

A number of statistics relating to occupations and work-related demographics are considered. These statistics help us gain an understanding of the nature of work in a certain nation. There are a number of issues related to labor that are highly relevant to our understanding of the relationship between time use and work. Also of interest are the dynamics created by various rates of employment, unemployment and part-time labor.

Employment

Individually considered items:

Percent of Unionization in the Work force

Percent population in employment

Percent employment women

Percent employment men

Economic activity by age group⁵⁶⁸

Gendered division of labor⁵⁶⁹

Part-time labor, percent workforce

Unemployment

Individually considered items:

Percent long term unemployment

Structural unemployment rate and cost⁵⁷⁰

Unemployment, general

Unemployment by age group

Total unemployment by occupation

Inactivity⁵⁷¹

Inactivity by gender ages 15-64⁵⁷²

⁵⁶⁸ Percent of a given age that can be classified as somehow employed.

⁵⁶⁹ The ratio of the percent of women/men that can be classified as some how employed.

⁵⁷⁰ Unemployment caused by a structural change in the economic structure of an area. This unemployment tends to be long-term in nature as it results from the general problem of skill and location mismatches between jobs and workers. The rate can be inferred from the ratio of job seekers to jobs of various sectors of the economy, plus the long term unemployment rate. The cost can be inferred from lost potential wages or productivity.

⁵⁷¹ Economic inactivity measures those people that are excluded from the labor market - i.e., not in employment and not classified as ILO unemployed.

Traditional and Non-Traditional Economic Indicators

Economic indicators provide insight into the structure of the transactions that occur nationally and globally while also addressing the economic state of individuals and various sectors of a nation's economy. Unfortunately, issues relating to economic assessment are frequently in dispute. As noted before, work being done with the concept of a Genuine Progress Index has been highly critical of traditional measures of economic productivity such as GDP. Regardless of these criticisms, both traditional and non-traditional economic indicators are considered in this analysis. This division provides both for the assessment of the primary questions at hand while providing a testing ground for novel measures of economic progress.

Among specific things considered in the non-traditional measures of economic progress, we are primarily concerned with the efficiency and externalities associated with the operation of a nation's economy. Thus, concepts such as the efficiency of resource consumption per dollar and various socio economic factors are considered. Also, since this work concerns itself with the structure of the business community in various countries a measure of how amenable the economic climate is to business is incorporated into the analysis. Individual economic measures are also considered. One prominent aspect of this analysis is to compare the economic standing of individuals to the greater economy. Also, individuals' economic existences are considered both relative to their

⁵⁷² Economic inactivity measures those people that are excluded from the labor market - i.e.; not in employment and not classified as ILO unemployed; divisions are based upon both gender and age group.

earned income and other sources of income such as government benefits. Finally, we are also able to gain some understanding of the long-term trends in the economies of the several nations studied.

Regarding the selection of specific indicators, traditional measures such as GDP, capital stock, GDP growth, and demand are considered to give an idea as to how well an economy is doing. Also, specific attention is paid to the balance between imports and exports along with industrial versus service sector production. These variables are considered in an effort to further understand the domestic and international shifts that have occurred in various countries due to factors such as globalization. As mentioned before, non-traditional economic indicators relate to the efficiency of an economy relative to the greater context of its operation. Thus, things such as energy consumption and production are relevant. Also, investment in research and development can be indicative of the level of technology used in an economy and possibly the extent of the future oriented activity in a country.

Since agriculture represents an important universal economic activity it is considered separately from other economic variables. Of interest to this analysis is both the amount of agricultural production per capita that occurs in a country along with its relative efficiency, both environmentally and economically. Thus, factors such as the amount of farm land per capita along with the amount of energy and pesticide use are considered.

Although many of the variables used in the index of individual economic indicators could also be considered social or government indicators, such as home ownership, they are placed in this category since they are all somehow contingent upon monetary transactions or monetary wealth. In general, these indicators allude to the amount and nature of an individual's economic position. For instance, hourly wages, the savings rate, and home ownership relate to how much money and other forms of wealth a person gains or has on average. Additionally, we also look at the amount of income a person gains through government transfers and other sources of income. Additionally, the cost of some consumer goods is considered since they represent a necessity for individuals. This can help us understand the typical nature of individual economic activity in a country relative to other factors such as social policy, taxation, and income inequality.

Finally, the status of the business community is considered. There are two reasons why this analysis is included. First, it is useful to gain some idea of the relative ease with which business is conducted in a country for comparison with other relevant factors such as employment, government expenditures and environmental status. Second, it is useful to test the widespread hypothesis that societies which maintain extensive social and environmental protections along with regulating business inhibit economic activity through burdensome regulation and increased cost⁵⁷³. To achieve this end an index of regulation cost along with an index of ease of doing business developed by the conservative Heritage Foundation are considered.

⁵⁷³ Frye, T., Sleifer, A., (1997). The invisible hand and the grabbing hand. *American Economic Review*, 87(2). 354-358.

Traditional Economic Indicators

Scale items:

Average potential GDP⁵⁷⁴
Capital stock, per capita
Real GDP Growth 1980-2004
Overall Annual productivity, GDP per capita⁵⁷⁵
Gross national savings per capita
Business sector investment per capita
Retail sales per capita
Aggregated demand⁵⁷⁶
Import market penetration
GDP gap⁵⁷⁷
Industrial Production per capita

Individually considered variables:

Total Imports/ total Exports
Ratio of industrial activity to services

Non-Traditional Economic Indicators

Scale items:

Coal consumption per GDP\$
Commercial Energy use (per GDP\$)
R&D as percentage of GDP
Macro economic environment index⁵⁷⁸
Carbon efficiency kg carbon per GDP \$
Electricity Generation, per capita
Industrial Production, per capita

⁵⁷⁴ Average potential GDP is the highest level of real gross domestic product that could persist for a substantial period of time without creating the danger of inflation.

⁵⁷⁵ Aggregate demand is the total demand for final goods and services in the economy at a certain price level or, the amount of final goods that can be purchased in an economy. USD, PPP adjusted.

⁵⁷⁶ Total demand USD per capita. Total demand is the aggregated demand for final goods and services in an economy.

⁵⁷⁷ GDP gap is the gap between observed and potential GDP.

⁵⁷⁸ The macroeconomic environment index indicates the quality of the macroeconomic environment, -that is, the ease of conducting business, taxation and regulation, of a country. World Economic Forum (2005). *Global Competitiveness Report 2004-2005*.

Agriculture⁵⁷⁹

Scale items:

Agricultural production per capita
Energy use in agriculture per capita
Farmers per capita
Cropland per capita
Total pesticide use per capita

Individual Economic Indicators

Scale items:

Average per capita income
Financial satisfaction⁵⁸⁰
Home ownership, percent residences
Pension investment
Household savings rate, percent of disposable income
Hourly wages
Income distribution Gini Coefficient

Individually considered items:

Relative income inequality
Average number of earners per household
Ratio of average monthly expenditures to income
Percent Paid Income, Transfer income
Ratio of expenditures to the sum of paid and transfer income
Expenditures: Consumer Goods, Real Estate and Rent
Purchasing power parities
House price to rent ratio
Income/house price ratio

Consumer Goods

Scale items:

Purchasing Price Parity

⁵⁷⁹ All agriculture figures as adjusted per capita.

⁵⁸⁰ Mean of self-ratings on ten-point scale relating to issues of personal financial satisfaction, Surveys in 1990s. World Values Survey (2007). Retrieved: July, 25, 2007. Website: www.worldvaluessurvey.org/

Business climate

Scale items:

Index of economic freedom⁵⁸¹

Rigidity of hours index⁵⁸²

Retail regulation⁵⁸³

Regulation Impact⁵⁸⁴

Environmental Indicators

Environmental indicators represent the last of the three major categories of sustainability. Indicators relating to the environment can be described as fitting into two categories. The first category relates to humans' impact on the environment in terms of pollution, land use, material resource consumption and waste. The second category relates to the structure of the environment itself in terms of wilderness protected areas and natural resource reserves.

In addition to the measure of sustainability developed in this work, it is also useful to look at existing studies that attempt to assess sustainability on a national level. Since there is a diversity of methodologies used in these assessments there is some difficulty in comparing them statistically. However, it is possible to compare these studies in a qualitative manner to each other and to use them as standards relative to the measure of sustainability developed for this work.

⁵⁸¹ Is an index that considers economic freedom from a variety of perspectives such as business, trade, regulation, taxation and investment. Heritage Foundation, (2007).

Retrieved: July, 15, 2007. Website:

http://www.heritage.org/Index/pdf/Index09_Methodology.pdf

⁵⁸² Rigidity of hours index: Scheduling of nonstandard work hours and annual paid leave.

⁵⁸³ Expressed as percentage of total cost. For instance a good might cost \$1 without regulation and \$1.10 with thus the regulation impact is .1

⁵⁸⁴ Same as retail regulation except for all other sectors of the economy.

To achieve these ends a number of indicators of resource consumption, waste, environmental mitigation and natural resources protections are considered. As the list below notes, most of these indicators are readily accepted as indicators of some aspect of environmental sustainability. In addition to these indicators, other indicators are used to ascertain more nuanced aspects of a nation's environmental status. Specifically, a detailed analysis of the relationship between urban and rural land along with population density is provided in an attempt to gain some understanding of how countries with vastly different population densities manage their open spaces and wilderness. Also, meta data such as the Ecological Footprint index and the Environmental Performance Index are used. The Ecological Footprint index gauges the average environmental impact of individual resource usage while the Environmental performance index notes how successfully a country is in achieving environmental sustainability.

Resource Usage

Scale items:

Coal consumption per capita

Electricity per capita

Natural gas consumption per capita

Nuclear consumption per capita

Oil consumption per capita

Primary energy consumption total

Energy usage, per capita

Wind energy usage, per capita

Pollution⁵⁸⁵

Scale items:

Municipal waste generation
Total green house gases
Volatile organic compounds
Particulate emissions
Nitrous oxide Emissions
Sulfur dioxide Emissions
Solid Waste

Individually considered items:

CO2 Emissions Residential and Industrial Per Capita
Co2 Emissions Transport and Structures Per Capita

Land Use

Scale items:

Non-wilderness⁵⁸⁶, negative scale item
Percent Total Area Crop land
Percent Total Area Crop land Pasture
Percent Total Area Crop land Forest

Individually considered items:

Total Crop land, pasture, forest, total area
Non-urban land⁵⁸⁷ urban land adjusted⁵⁸⁸
Open land, urban land and population adjusted⁵⁸⁹
Open Space⁵⁹⁰

Environmental Impact

Scale item:

Ecological foot print⁵⁹¹

⁵⁸⁵ All figures expressed per capita.

⁵⁸⁶ Expressed as percent total land area.

⁵⁸⁷ For this analysis non urban are defined as non-urban land such as forest, pasture or cropland.

⁵⁸⁸ Population is factored into the analysis by noting the amount of open space relative to level of urbanization and population density.

⁵⁸⁹ A method of calculating open space per-capita which accounts for the relative proportion of urban land and population density. Thus it is possible to note the influence of planning on urban density in a country rather than merely the amount of open space per capita.

⁵⁹⁰ Non-urban areas.

⁵⁹¹ World Wide Fund for Nature (2000). *Living Planet Report 2000*. Retrieved: June, 15, 2008. Website: http://assets.panda.org/downloads/living_planet_report_2008.pdf. Calculates the environmental impact of the average resident of a country. Presents an updated analysis of the same methodology used for the 2000 report.

Meta Data

Environmental Performance Index⁵⁹²

Time Use

Time use is both an essential element in analyzing the other aspects of this work along with being a topic of significant interest by itself. There are many approaches to the study of time use. As noted in the table below, measures of time use are dependent upon the scope of activity being analyzed. One of the key considerations in understanding time use data is that to gain full understanding of the issues related to time use in modern societies it is necessary to consider all of the different manifestations of time use. Thus, time use patterns for work and non work activities are considered along with policy related to time use such as vacation time. Also, the scope of time use variables varies from daily to yearly activities. Finally, since the issue of overwork and under employment is of interest to this analysis, data relating to both are explored.

Time Use

Scale items:

Average hours worked per person per year

Total Hours worked for total employment⁵⁹³

GDP per hour worked⁵⁹⁴

Vacation time, days per year

Percent of workers working more than 40 hours a week

Percent women in the workforce

Gendered division of labor⁵⁹⁵

⁵⁹² Looks at a variety of environment related factors to rank countries based upon their ability to achieve sustainable outcomes. EPI (2007). Retrieved: July, 15, 2007. Website: <http://epi.yale.edu/Methodology>.

⁵⁹³ Ratio of total hours to total number of workers.

⁵⁹⁴ USA=100 as standard of comparison.

⁵⁹⁵ Ratio of average hours of women/men in a number of work related settings.

Individually considered items:

Average hours worked per week

Percent working hours per week, greater than 39, less than 20

Percent working hours per week, women, greater than 39, less than 20

Percent working hours per week, men, greater than 39, less than 20

Percent total of part time work

Chapter 5

Analysis

An analysis of the available data confirms the basic hypothesis of this work, both on a general level and relative to a number of subcategories related to either sustainability or time use. Specifically, there tends to be a consistent positive relationship between indicators of sustainability and various measures of equity in time use. Additionally, the analysis suggests that sustainability tends to be univariate in nature since most indicators of sustainability tend to co-vary strongly. Considering these results, it is useful to discuss the nature of such relationships between sustainability and time use and their relationship with various social, economic and environmental structures.

Prior to discussing any specific relationship between the variables studied, however, it would be useful to describe some of the basic parameters of this analysis. Since this work is somewhat preliminary, the major focus of the analysis is on the general relationship between the principal factors in question. From this initial perspective, correlating the variables in question helps build a foundation for subsequent, more specific analyses. There are three primary reasons why more sophisticated statistical analysis is avoided at this point. First, there is the matter of statistical significance and number of cases available for study. The sample size averages around 20 cases, and can not be increased unless we find more industrialized nations. Second, there is the issue of the comprehensiveness of the data studied. Although the data used for this analysis are extensive, due to various it is clear that important factors such as non-monetary labor would be required for a more comprehensive analysis. Third, to conduct a truly comprehensive analysis of the topic at hand it is necessary to not only study national

level data, but to also study various non-aggregated individual data along with regional and global dynamics. If one considers the breadth of individual level variables such as age, occupation and time use it becomes apparent that a truly comprehensive study of the topic would use literally hundreds of variables and would occupy a number of extensive volumes on the topic. In light of this, such analyses are left for future work which aims to thoroughly assess the specific relationship amongst certain variables. Regardless of these caveats, the data used for this analysis relate to the major themes of this work, both in terms of noting the extensive interrelationships amongst relevant variables and also documenting the relationship between individual-level activities and trends that manifest themselves on a national level.

In addition to the various indicators of sustainability and time usage, the three-part typology of liberal, traditionalist/corporatist, and egalitarian welfare states put forth by Epsing-Anderson⁵⁹⁶ is used extensively in the analysis. As mentioned before, countries are classified according to whether they emphasize a social ideology that endorses capitalism (liberal), traditionalist social values, or egalitarian social values. Using this inclusive framework, Epsing-Anderson then describes how various countries' social policies and welfare states have developed to reflect these cultural norms. For instance, a country such as France is described as being traditionalist in its social values. As a consequence of this trait, various aspects of the French welfare state aim to preserve traditional culture and promote traditional social structures such as the family. Epsing-Anderson's typology can be used as a proxy for various determinant factors of a country

⁵⁹⁶ Epsing-Anderson, G., (1990). *The Three Worlds of Welfare Capitalism*. Princeton University Press.

such as its culture, institutional heritage, and economic system. Although this typology is by no means perfect it does provide an effective heuristic framework by which to analyze sustainability and time use. For the sake of parsimony, subsequent discussions will often describe countries using this approach. Listed below is the categorization of subjects⁵⁹⁷:

Liberal, L: United States, Canada, New Zealand, Australia, United Kingdom, Ireland⁵⁹⁸,

Traditionalist/Corporatist, T: Japan, France, Germany, Italy, Portugal, Switzerland, Belgium, Austria, Netherlands, Japan

Egalitarian, E: Sweden, Norway, Finland, Denmark, Iceland⁵⁹⁹

As the subsequent sections will demonstrate, for the most part there is a consistent relationship among individual indicators of sustainability and equity in time use. The consistency and pervasiveness of these relationships, both within sustainability and between sustainability and time use, suggests that there are strong structural factors facilitating the situation. Although there is some ambiguity as to whether inequity in time use leads to less sustainable situations or vice versa, in general we can conclude that there are likely strong bi-directional influences when the situation is judged as a whole. While certain factors tend to be more directional in their influence than others, in general the correlation among many variables included in the analysis appear to be inter-related, reciprocal and self-sustaining.

⁵⁹⁷ As noted in subsequent analysis L: Liberal, T: Traditionalist, E: Egalitarian.

⁵⁹⁸ Ireland can also be described also as somewhat of a traditionalist society.

⁵⁹⁹ As subsequent data demonstrate, and other observers have noted, Iceland can be both described as a traditionally egalitarian society that in recent years has endorsed extensive neo-liberal policies.

For instance, social and economic inequity in time use has been determined to cause negative health outcomes⁶⁰⁰. In this instance the directionality of the relationship can easily be determined; however, in other relationships the situation is less explicitly uni-directional. For instance, inequity in time use might lead to a higher cost of living since services must be procured to compensate for an individual's inability to do such tasks himself or herself. However, it is equally likely that the high cost of living in many areas mandates that individuals maintain an overwork time use pattern so that they can afford to subsist.

Additionally, it has been observed that certain relationships are the results of an odd type of synergy of amongst various aspects of sustainability and time use. Many analyses have noted that people overwork themselves to maintain a standard of living in excess of what they need, and that over time this excessive standard of living becomes perceived as a virtual necessity⁶⁰¹. In general, the inter-connectedness observed leans heavily towards bi-directionality in which structures related to sustainability influence time use and vice versa. Thus, we can conclude that various features of sustainability increase or diminish equity in time use depending upon their contact. Also, inequity in time use contributes to lower levels of sustainability.

Ultimately, the situation can be viewed as one that is either self-complicating or self-confirming, depending upon the overall nature of the situation. Additionally, the

⁶⁰⁰ Michie, S., Cockcroft, A. (1996). Overwork Can Kill. *British Journal of Medicine*, 312, 921-922.

⁶⁰¹ Goodin, R. J., Rice, Bittman, M., Saunders, P., (2002). *Time Pressure Illusion Discretionary Versus Free Time*. Social Policy Research Centre, Discussion Paper No. 115.

strong correlation between the factors considered reflects alludes to the comprehensive nature of sustainability. From both a theoretical and empirical perspective it appears paradoxical to have a society that is highly sustainable and yet exhibits inequity in time use, or vice versa. Although there is some debate about how to properly measure sustainability,⁶⁰² these findings suggest that the measure used here has a relatively good degree of accuracy since the empirical results tend to be consistent and theoretically justifiable.

Time Use

In addition to considering the general relationship between time use and sustainability, a number of specific analyses can be performed to further refine our understanding of the countries examined here. Most prominently, this study uses the idea of time equity, or the sum total of relevant aspects of time use, to gauge a society's performance in managing how people use their time. Aside from the general measure of time use equity, along with vacation time, other measures are developed using z scores since the standardized scale variation in the measures analyzed is uniform and comparable⁶⁰³. It is useful to note that certain variables may have a greater impact on the analysis than others. In terms of specific topics analyzed, data relating to hours worked

⁶⁰² Kaufman, R., Cultler, C., (1995). Measuring sustainability: needed- an interdisciplinary approach to an interdisciplinary concept. *Ecological Economics*, 15(2), 109-112.

⁶⁰³ It is it also noteworthy to mention that most scales do use Z scores since the level of statistical significance is low due to the limited number of cases. In contrast the measures that use Z scores are derived data sets with adequate numbers of cases to achieve statistical significance.

per week, vacation time, inactivity or unemployment, and gender divisions in work time are analyzed individually.

As later analysis will show, when time equity is considered as a whole there is a substantial positive relationship between equity in time use and sustainability. However, certain variables do not correlate well to the overall trend. Although superficially discouraging, there are a few reasons for this. First, there is the issue of confounding factors created by varying social, cultural and economic conditions in the countries studied. For instance, a high rate of economic inactivity in an egalitarian country that promotes parental leave is fundamentally different than inactivity due to the inability to find a job. In addition to this multi-dimensionality of variables there is also the issue of completeness and accuracy of data. For instance, unemployment statistics in the United States report only those filing unemployment claims or actively seeking work and not all of those out of work who are seeking employment. Some job seekers are entitled to unemployment benefits but do not apply for them; other job seekers are not eligible for these benefits. This, along with a number of similar situations, make it clear that to effectively understand the specific relationship between time use and sustainability one must consider items *on a per instance basis* that weighs the effects of policy, economics and culture on a situation. Thus, by using such an approach it is possible to find meaning in the variation of various factors that certain statistics cannot discern.

Regardless of this potential complication, certain variables such as vacation time and hours worked per week statistically confirm the hypothesis that sustainability and

time equity are related. In contrast, other variables such as unemployment and gender equity tend not to co-vary consistently with sustainability. Regardless of the lack of explicit correlation found in these variables there are a number of trends observed in certain countries that can be used to substantiate the main hypothesis of this work. When both statistical and non-statistical analyses are used the overall relationship between equity in work and equity in time use can be seen as being highly positive. This can be mostly attributed to the fact that aside from informal household labor, much of what dictates time equity in the modern world is determined by an individual's ability to be employed and balance that employment with other activities.

Employment

A few patterns of association can be extracted from data relating to total employment. First, there is no consistent statistical relationship between the percent of individuals involved in the economy and a county's level of sustainability⁶⁰⁴. However, if we view the data based upon the nature of each country, both in terms of economic ideology and welfare state, then a number of patterns become apparent. Employment in both egalitarian welfare states such as those in Scandinavia along with those in liberal capitalist regimes tends to be higher than is employment in more traditionalist cultures such as Italy, France and Germany (See table 4.1).

Although employment in both egalitarian states and liberal countries is high, the probable reasons behind such level are different. In egalitarian states such as Sweden it is

⁶⁰⁴ Since there were no significant correlation figures were omitted from table 3.

the policy of the government to maintain full employment⁶⁰⁵. Also, the structure of these welfare states often facilitates the employment of individuals who would otherwise not be involved in the economy through social programs such as subsidized childcare. Additionally, full employment in these economies tends to consist of fewer hours worked per week than in other industrialized countries.

Relative to liberal countries, the high rate of employment as noted in Table 5.1 in these economies can be mostly attributed to the economic necessity of dual income households since the cost of living in these countries is quite high. In both liberal economies and egalitarian states there tends to be a less highly gendered division of labor in comparison with traditional economies. However, as noted before this most likely is the result of social policy in welfare economies and sheer economic necessity associated with living in liberal economies. Finally, the lower rates of employment in other countries can be attributed to higher levels of structural unemployment and social policy or cultural traditions that facilitate a significant gender division in formal labor⁶⁰⁶. The tables below summarize these findings.

⁶⁰⁵ Mabbett, D., (1995). *Trade, Employment, and Welfare: A Comparative Study of Trade and Labour Market Policies in Sweden*. Oxford University Press.

⁶⁰⁶ A good discussion of the difference in welfare states can be found in Epsing-Andreson, G., (1990). *The Three Worlds of Welfare Capitalism*. Princeton University Press.

Table 5.1, Percent population in employment, Z scores⁶⁰⁷

Country	Category	Percent Employment	Z score
Iceland	E	86.8	2.302131
Norway	E	81.7	1.072169
Switzerland	T	80.5	0.941938
New Zealand	L	78.2	0.912997
US	L	77.9	0.681475
Canada	L	77.5	0.565714
Denmark	E	77.3	0.377602
Netherlands	T	76.8	0.363132
Ireland	L	75.6	0.261841
Australia	T	75.6	0.218430
Sweden	E	74.7	0.131609
UK	L	74.2	0.102669
Spain	T	74.0	0.0
Portugal	T	73.9	-0.02756
Japan	T	72.7	-0.09991
Finland	E	71.8	-0.30249
Austria	T	71.1	-0.47614
Germany	T	69.4	-0.98259
France	T	67.8	-1.32987
Belgium	T	65.0	-1.57587
Italy	T	62.7	-1.85080

⁶⁰⁷ Ages 15-64, Found In: ILO (2004). *Key Indicators of the Labor Market*. Retrieved, July, 7, 2007. Website: <http://www.ilo.org/public/english/employment/strat/kilm/index.htm>

Table 5.2, Percent employment women, Z Scores⁶⁰⁸

Country	Category	Percent employment	Z score
Iceland	E	70.9	2.09476238
Norway	E	63.7	1.22982435
New Zealand	L	61.2	0.86435769
Switzerland	T	61.0	0.79126408
Canada	L	60.8	0.68162436
US	L	59.7	0.65725983
Denmark	E	59.0	0.49889104
Sweden	E	58.5	0.49889104
Australia	L	56.7	0.24306410
Netherlands	T	56.7	0.16997095
UK	L	56.4	0.16997095
Finland	E	56.3	0.08469531
Ireland	L	55.2	0.03596670
Portugal	T	54.0	-0.0371269
Austria	T	51.2	-0.4513222
Japan	T	50.4	-0.6584200
Germany	T	48.4	-0.7193312
France	T	48.1	-1.0238867
Spain	T	45.1	-1.3985640
Belgium	T	44.3	-1.4258999
Italy	T	38.1	-2.0837401

⁶⁰⁸Found In: ILO (2004). *Key Indicators of the Labor Market*. Retrieved, July, 7, 2007.
Website: <http://www.ilo.org/public/english/employment/strat/kilm/index.htm>

Table 5.3, employment Men Z Score⁶⁰⁹

Country	Category	Percent Employment	Z score
Iceland	E	81.9	2.34642609
Switzerland	T	75.2	1.11331957
New Zealand	L	73.9	0.89958061
Norway	E	73.0	0.73516640
Japan	T	72.9	0.71872523
US	L	72.7	0.65295930
Netherlands	T	72.5	0.58719337
Ireland	L	72.3	0.52142744
Canada	L	72.0	0.32413090
Denmark	E	70.4	0.15971670
Australia	T	69.9	0.14327553
Portugal	T	69.3	0.02818483
UK	L	69.0	0.01174366
Spain	T	67.3	-0.2832560
Sweden	E	66.9	-0.3992918
Austria	T	65.6	-0.4650571
Finland	E	65.5	-0.8267685
Germany	T	65.2	-1.2378040
Italy	T	61.0	-1.3200111
Belgium	T	60.6	-1.6323984
France	T	59.7	-1.6323984

Long Term Unemployment

Unemployment and long term unemployment play another important role in understanding time use. Inequities in employment can create a number of problems, both relative to the employed and the unemployed. Although people who are out of work have

⁶⁰⁹ Found In: ILO (2004). *Key Indicators of the Labor Market*. Retrieved: July, 7, 2007. Website: <http://www.ilo.org/public/english/employment/strat/kilm/index.htm>

large amounts of free time their “freedom” relative to time use is more than offset by the fact that they lack income and most likely a meaningful outlet for their energies and talents in society. Additionally, unemployment has negative consequences for both working individuals and society at large. For those who maintain employment in a high unemployment economy, it has been shown that labor under such circumstance is effectively devalued since there is an excessive “supply” of jobs seekers⁶¹⁰. Also, it has been observed that labor under these circumstances is devalued in other ways⁶¹¹. In particular, especially in liberal economies employees are expected to perform more tasks and work longer for the same amount of pay and feel “lucky” they are not unemployed. Also, positions may be reduced to part-time from full time so that benefits might be cut. These are factors relating to tangible benefits; the stress of fearing job loss is another intangible but real cost involved as well.

Thus, time equity is compromised for those lacking meaningful work and for those employed due to an effective marginalization of the quality of labor. On the level of an entire economy, unemployment results in social and economic problems that further complicate time equity. When unemployment is significant in an economy it reduces demand for certain goods and hence promotes even more unemployment through deflation⁶¹². Also, when a certain group of individuals suffers from long term unemployment they tend to contribute to social instabilities which make achieving time

⁶¹⁰ Parker, J., (1992). Structural Unemployment in the United States: The Effects of Interindustry and Interregional Dispersion. *Economic Inquiry*, 30(1), 101-116.

⁶¹¹ Leonard, J. (1988). *In the Wrong Place at the Wrong Time: The Extent of Frictional and Structural Unemployment*. NBER working paper no. W1979.

⁶¹² Lucas, R., Rapping, L., (1969). Real Wages, Employment and Inflation. *Journal of Political Economy*, 77(5), 721-754.

equity difficult. Relative to the data, as expected the inverse is observed relative to employment.

Traditionalist countries and those with neither a liberal or full employment economic policy tend to exhibit the highest overall rates of unemployment, (see Table 5.4). However, there are a few caveats and exceptions to this trend. Most prominently, there is the case of unemployment based upon education relative to the United States: the United States has by far the highest rate of unemployment for people with a college level of education⁶¹³. What is interesting about this observation is that it suggests that the structural problems which cause both unemployment and a lack of time equity transcend the traditional notions of structural unemployment, only affecting the less educated.

Aside from these deviations, unemployment statistics also fail to note the longitudinal aspects of unemployment. Specifically, a five percent unemployment rate in one country might be representative of a group of people unemployed after a relatively long tenure in employment waiting to find another stable job. In contrast, the same five percent in another country may be indicative of a group of people who frequently are unemployed after short periods of time. As some data suggest the latter appears to be the case in liberal economies such as the United States⁶¹⁴. The frequency of experiencing

⁶¹³ The rate of unemployment for those with a tertiary education is 2.7 standard deviations above average. As judged by the Unemployment by education, Found In: ILO (2004). *Key Indicators of the Labor Market*. Retrieved: July, 7, 2007. Website: <http://www.ilo.org/public/english/employment/strat/kilm/index.htm>

⁶¹⁴ Federal Reserve Bank of San Francisco (2007). *Economic Research and Data, FRBSF Economic Letter, 2007, 13, June, 1, 2007, "Anxious workers"*. Retrieved: August, 1,

unemployment can be seen as being a complicating factor in terms of time equity since stability is considered primary for achieving equity in time use. Although inconvenient in any instance, being unemployed once every 10 years is arguably significantly different than being unemployed once every year or two. Although consistent data on job tenure are is not available, if frequency of unemployment were considered it is likely it would reveal further structural aspects of unemployment and time use.

Table 5.4, Unemployment ⁶¹⁵

Country	Category	Percent	Z score
Iceland	E	2.6	-1.6223969
New Zealand	L		
Ireland	L	4.3	-0.889575
Japan	T	4.4	-0.8464679
Switzerland	T	4.4	-0.8464679
Norway	E	4.6	-0.7602537
UK	L	4.6	-0.7602537
Denmark	E	4.8	-0.6740392
Australia	T	5.1	-0.5447178
US	L	5.1	-0.5447178
Austria	L	5.2	-0.5016107
Netherlands	T	5.2	-0.5016107
Canada	L	6.8	0.18810407
Portugal	T	7.6	0.53296126
Italy	T	7.7	0.57606838
Sweden	T	7.7	0.57606838
Belgium	T	8.1	0.74849728
Finland	E	8.4	0.87781845
Spain	T	9.2	1.22267584
France	T	9.6	1.48131899
Germany	T	9.8	2.0417122

2007. Website: <http://www.frbsf.org/publications/economics/letter/2007/el2007-13.html>, Federal Reserve Bank of San Francisco.

⁶¹⁵ Found In: ILO (2004). *Key Indicators of the Labor Market*. Retrieved: July, 7, 2007. Website: <http://www.ilo.org/public/english/employment/strat/kilm/index.htm>

Table 5.5, Long Term Unemployment⁶¹⁶

Country	Category	Percent long term unemployed	Z Score
Iceland	E	0.2	-1.0688686
New Zealand	L	0.4	-1.0688686
Norway	E	0.5	-1.0085734
Canada	L	0.6	-0.8879831
US	L	0.7	-0.8879831
Australia	L	1.0	-0.7070977
UK	L	1.2	-0.6468025
Denmark	E	1.3	-0.5262122
Sweden	E	1.3	-0.5262122
Austria	T	1.4	-0.4659171
Ireland	L	1.4	-0.4056219
Japan	T	1.7	-0.3453268
Switzerland	T	1.8	-0.2247364
Netherlands	T	1.9	-0.1041462
Finland	E	2.1	-0.0438510
Spain	T	2.1	0.31791985
Portugal	T	3.0	0.86057627
Italy	T	3.0	1.04146170
France	T	3.6	1.16205203
Belgium	T	3.7	1.28264222
Germany	T	6.1	2.36795507

Economic Inactivity

In addition to unemployment, economic inactivity⁶¹⁷ - that is, not having a job but not explicitly seeking one- reveals other aspects of the lives of individuals. When

⁶¹⁶ Unemployed for more than six months, Found In: ILO (2004). *Key Indicators of the Labor Market*. Retrieved: July, 7, 2007. Website: <http://www.ilo.org/public/english/employment/strat/kilm/index.htm>

⁶¹⁷ Economic inactivity measures those people that are excluded from the labor market - i.e. not in employment and not classed as ILO unemployed. For statistical purposes, the economically inactive can be broadly split into three groups - those seeking work but not available to start within the next fortnight; those that want work but are not actively

inactivity is assessed relative to age and gender we find a number of different patterns occur within the different types countries. Traditionalist countries tend to have the highest rates of inactivity for women across the average individual's working life, whereas liberal and egalitarian states tend to have the lowest. The opposite is true of men; men in egalitarian countries tend to have the highest average male inactivity, followed by traditionalist states and lastly the liberal states. Overall, egalitarian and traditionalist states tend to exhibit the highest inactivity rates. Similar to other situations relating to work and time use, we can attribute this pattern mostly to government policy, prevailing economic conditions, and social norms. Per se, traditionalist societies tend to promote maternalism and the sole bread winner model⁶¹⁸. Consequently, women will tend to be inactive more often and men tend to be more active. In egalitarian systems women and men tend to be more or less equal. However, when men are judged relative to one another, egalitarian states display more inactivity. Liberal states tend to exhibit high levels of overall economic activity. Additionally, women tend to be more active than in either traditionalist or egalitarian states, and men tend to be as active as those in traditionalist countries.

seeking it; and those who do not want work. The majority of those in retirement are unsurprisingly classed as economically inactive, but this proportion – and the relative size of the retired population - varies across nation. In order to allow consistent comparisons to be made, this analysis is restricted to those who are both economically inactive and of working age. Although it is natural to expect some elements of economic inactivity in the population, a relatively high inactivity rate can be considered detrimental in an economic sense, as it is potentially a sign of under-utilization of a valuable resource. It may also be an indicator of - or contributor to - social exclusion. Southwest Observatory (2008). Retrieved: January, 12, 2008. Website:

http://www.swo.org.uk/SOTSW2008/section_62.html

⁶¹⁸ Goodin, R, Rice, J. M., Parpo, A., Ericksson L., (2008). *Discretionary Time*, Cambridge University Press.

These patterns can be attributed to different things in different countries. Social and economic policy in the egalitarian countries is most likely the cause of their inactivity rates⁶¹⁹. Specific policies such those geared towards creating gender equality, limited work weeks, and parental leave no doubt contribute to this dynamic. In the place of policy, cultural values can be seen as creating the situation in the traditionalist states either through cultural norms or through policy that endorses the single breadwinner model. Economic values and lack of social policy that creates space for family and other non-work related activities may contribute to the situation in the liberal countries. High rates of dual income families and working mothers are strong contributing factors to a low level of inactivity in liberal countries. However, this lack of inactivity differs from egalitarian countries in that it is more likely the result of economic necessity and cultural norms than of social policy which promotes parenting and other non-economic activities in egalitarian and traditionalist countries. Finally, rates of structural employment are also evident in the data. In particular countries such as Italy the data depict the effect of high unemployment throughout an individual's working life.

Table 5.6, Inactivity ranks by gender ages 15-64⁶²⁰

Combined	Country	Women	Country	Men	Country
1	Italy	1	Italy	1	Belgium
2	Belgium	2	Belgium	2	France

⁶¹⁹ Goodin, R., Rice, J. M., Parpo, A., Ericksson, L., (2008). *Discretionary Time*. Cambridge University Press.

⁶²⁰ Ranked based upon z score, ILO (2004). Key Indicators of the Labor Market. Retrieved: July, 6, 2007. Website: <http://www.ilo.org/public/english/employment/strat/kilm/index.htm>

3	France	3	Spain	3	Italy
4	Spain	4	Japan	4	Finland
5	Austria	5	France	5	Austria
6	Ireland	6	Ireland	6	Sweden
7	Japan	7	Austria	7	Germany
8	Germany	8	Australia	8	Portugal
9	Portugal	9	Germany	9	Ireland
10	Australia	10	Portugal	10	Australia
			United		
11	Finland	11	Kingdom	11	Spain
	United				United
12	Kingdom	12	Netherlands	12	States
	United		United		United
13	States	13	States	13	Kingdom
			New		
14	Sweden	14	Zealand	14	Denmark
15	Netherlands	15	Finland	15	Canada
	New				New
16	Zealand	16	Canada	16	Zealand
17	Canada	17	Denmark	17	Norway
18	Denmark	18	Sweden	18	Netherlands
19	Norway	19	Switzerland	19	Japan
20	Switzerland	20	Norway	20	Switzerland
21	Iceland	21	Iceland	21	Iceland

Work Hours

The average number of hours worked per week factor heavily into the equity of an individual's time use since they consume a large amount of time, both directly and indirectly. Hours are also highly correlated with sustainability. The pattern observed tends to co-vary with the level of economic liberalism endorsed by the country.

Although the average number of hours worked can be used as a reliable indicator of time use in that country, such numbers may conceal other trends and patterns. Of particular interest is what occurs in the extremes of either part time labor or overwork. As tables 5.9, 5.10, 5.11 note, liberal economies, especially the United States, tend to have *higher than average numbers of people working more than 39 hours a week and less than average working 20 hours or less.*

What these data suggest is that individuals in these economies consistently put in longer hours. Additionally, moderate hours when observed in work-intensive countries, those between 30 and 40 hours, are likely not to have the same meaning as in countries whose policies dictate more modest schedules. Thus, 35 hours a week might be considered full time in the Netherlands, but this would likely represent only part-time labor, most likely without benefits, in the United States (See table 5.12). Also, there appears to be a highly gendered division of labor when it comes to hours worked in liberal economies. Specifically, women tend to be underemployed while men often are over-employed.

Table 5.7, Average hours worked per week⁶²¹

Country	Category	Hours
Japan	T	46.9
Iceland	E*	45.0
United	L	43.5

⁶²¹ ILO (2004). Key Indicators of the Labor Market. Retrieved: July, 6, 2007. Website: <http://www.ilo.org/public/english/employment/strat/kilm/index.htm>

States		
Switzerland	T	42.1
Ireland	L	41.3
United Kingdom	L	40.8
Austria	T	39.5
Australia	L	39.4
New Zealand	L	39.4
Sweden	E	38.8
Norway	E	38.1
Italy	T	38.0
Finland	E	37.9
Germany	T	37.9
Spain	T	37.4
Portugal	T	37.3
France	T	37.0
Belgium	T	37.0
Canada	L	36.0
Netherlands	T	33.8

Table 5.8, Average annual hours⁶²²

Country	Category	Hours
Netherlands	T	1391

⁶²²Average annual hours, ILO (2004). Key Indicators of the Labor Market. Retrieved: July, 6, 2007. Website: <http://www.ilo.org/public/english/employment/strat/kilm/index.htm>

Norway	E	1407
Germany	T	1433
France	T	1555
Belgium	T	1571
Denmark	E	1584
Sweden	E	1601
Ireland	L	1640
Switzerland	T	1651
Spain	T	1656
Austria	T	1659
UK	L	1669
US	L	1708
Finland	E	1716
Australia	L	1728
Canada	L	1736
Portugal	T	1758
Japan	T	1784
New Zealand	L	1787
Iceland	E	1794
Italy	T	1800

Table 5.9, Percent working X hours per week⁶²³

Country	<20	Category	Country	>39	Category
Netherlands	21.0	T	United States	76.6	L

⁶²³ ILO (2004). Key Indicators of the Labor Market. Retrieved: July, 6, 2007. Website: <http://www.ilo.org/public/english/employment/strat/kilm/index.htm>

Australia	16.1	L	Iceland	71.8	E
Switzerland	15.0	T	Portugal	71.4	T
Norway	13.0	E	Spain	71.1	T
New Zealand	12.8	L	Japan	68.8	T
United Kingdom	12.8	L	New Zealand	66.0	L
Germany	12.5	T	Switzerland	65.3	T
Denmark	10.9	E	Italy	63.0	T
Canada	9.0	L	Austria	59.6	T
Belgium	8.3	T	Sweden	58.4	E
Ireland	8.0	L	Canada	53.5	L
Iceland	7.1	E	Germany	48.4	T
Austria	6.8	T	Australia	48.2	L
Finland	6.0	E	United Kingdom	47.3	L
France	5.6	T	Finland	41.6	E
Japan	5.4	T	Ireland	33.4	L
Sweden	5.2	E	France	32.7	T
United States	5.1	L	Netherlands	32.4	T
Italy	4.5	T	Belgium	31.6	T
Portugal	4.2	T	Denmark	28.7	E
Spain	4.2	T	Norway	15.7	E

Table 5.10, Percent working hours per week, women⁶²⁴

Country	<20	Category	Country	>39	Category
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⁶²⁴ Percent working hours per week, women, ILO (2004). Key Indicators of the Labor Market. Retrieved: July, 6, 2007. Website: <http://www.ilo.org/public/english/employment/strat/kilm/index.htm>

Netherlands	33.5	T	United States	66.5	L
Switzerland	26.8	T	Portugal	60.7	T
Australia	24.2	L	Iceland	53.8	E
Germany	21.7	T	Spain	53.7	T
United Kingdom	20.8	L	Japan	49.8	T
New Zealand	20.4	L	New Zealand	47.2	L
Norway	19.3	E	Austria	44.1	T
Belgium	15.3	T	Sweden	43.5	E
Ireland	13.9	L	Italy	42.2	T
Denmark	13.8	E	Switzerland	40.6	T
Canada	12.7	L	Canada	36.3	L
Austria	11.8	T	Australia	31.6	L
Iceland	10.3	E	Germany	30.6	T
France	9.5	T	United Kingdom	27.3	L
Japan	9.1	T	Finland	23.6	E
Italy	8.6	T	France	21.6	T
Spain	8.1	T	Belgium	18.3	T
Finland	7.9	E	Ireland	16.9	L
United States	7.2	L	Denmark	15.0	E
Sweden	6.8	E	Netherlands	11.2	T
Portugal	6.3	T	Norway	7.7	E

Table 5.11, Percent working hours per week men ⁶²⁵

Country	<20	Category	Country	>39	Category
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⁶²⁵ ILO (2004). Key Indicators of the Labor Market. Retrieved: July, 6, 2007. Website: <http://www.ilo.org/public/english/employment/strat/kilm/index.htm>

Netherlands	10.8	T	Iceland	87.0	E
Australia	9.6	L	Switzerland	85.8	T
Denmark	8.3	E	United States	85.8	L
Norway	7.4	E	Spain	83.3	T
New Zealand	6.4	L	Japan	82.2	T
Canada	5.8	L	New Zealand	81.9	L
United Kingdom	5.7	L	Portugal	80.6	T
Switzerland	5.2	T	Italy	76.7	T
Germany	4.9	T	Austria	72.6	T
Finland	4.3	E	Sweden	72.0	E
Iceland	4.3	E	Canada	68.8	L
Sweden	3.7	E	United Kingdom	65.0	L
United States	3.2	L	Germany	63.2	T
Ireland	3.1	L	Australia	61.5	L
Japan	2.9	T	Finland	58.3	E
Austria	2.6	T	Netherlands	49.6	T
Belgium	2.6	T	Ireland	46.7	L
Portugal	2.4	T	Belgium	42.7	T
France	2.2	T	France	42.3	T
Italy	1.9	T	Denmark	40.7	E
Spain	1.5	T	Norway	22.8	E

Table 5.12, Percent total labor force of part time work.⁶²⁶

Country	Percent	Category
Netherlands	36	T

⁶²⁶ OECD (2004). *Percent Part Time Labor force*. Retrieved: July, 27, 2007. Website: <http://stats.oecd.org/index.aspx>

Australia	27	L
Japan	25	T
Switzerland	25	T
United Kingdom	24	L
Germany	23	T
New Zealand	22	L
Norway	21	E
Ireland	20	L
Belgium	19	T
Canada	18	L
Denmark	18	E
Austria	17	T
Iceland	16	E
Italy	15	T
France	14	T
Sweden	14	E
Finland	13	E
United States	13	L
Spain	12	T
Portugal	9	T

Vacation time

Vacation time is another aspect of time use that is consistent in variation with sustainability. As we will see later, the more vacation time a country grants its citizens the more it tends to exhibit other sustainable patterns of behavior. Additionally, it is noteworthy that the United States is the only country in the sample that does not legally guarantee workers an annual vacation⁶²⁷ Even if U.S. workers if are officially given vacation time, there is often substantial pressure from bosses not to take time off.

Table 5.13, Vacation time, Days⁶²⁸

Country	Days	Category
Austria	35	T

⁶²⁷ United States Bureau of Labor Statistics (1996). *Table 5. Average paid holidays and days of vacation and sick leave for full-time employees*. Retrieved: January, 2, 2008. Website: <http://www.bls.gov/news.release/ebs.t05.htm>

⁶²⁸ World Tourism Organization (2007). *Yearbook of Tourism Statistics*. United Nations.

Finland	35	E
France	35	T
Germany	33	T
Switzerland	32	T
Denmark	30	E
Sweden	30	E
Italy	29	T
Australia	28	L
UK	28	L
Netherlands	25	T
Portugal	25	T
Belgium	20	T
Iceland	20	E
Ireland	20	L
New Zealand	20	L
Norway	20	E
Spain	20	T
Japan	10	T
Canada	10	L
US	7.6	L

Informal household activities

Informal labor and other non-work-related activities comprise the remainder of an individual’s time. Data relating to these activities is incomplete at best, both for the survey sample and the context of the data. However, various indicators along with existing research provide some insight in to how non-work time use factors into the discussion.

One of the more predicable aspects of informal labor is commuting to work. Although there exist no direct data on this activity, transportation related-data are available in particular the distance traveled by passenger vehicles per year from which we can infer commute times. As the table below notes, vehicle miles traveled per year are highest in America followed by other New World liberal countries such as Canada and

Australia. Europe and Japan are ranked near the bottom in terms of miles traveled per year. However, when one looks at the use of public transit, both rail and bus service, the opposite holds true.

Table 5.14, Transport Km per capita⁶²⁹

Country	Road	Country	Train	Country	Bus
US	16509	Portugal	3615	Portugal	1043
Iceland	10431	Japan	3069	Australia	223
Australia	10048	Australia	1425	Iceland	204
Canada	9964	France	1286	Italy	174
Ireland	9826	Denmark	1073	Belgium	170
Finland	9784	Sweden	1001	Finland	144
		Netherland			
Austria	9334	s	912	Denmark	136
Belgium	9102	Germany	908	Spain	131
Italy	8879	Belgium	891	Norway	129
				Switzerlan	
France	8790	Italy	794	d	102
				Netherland	
Sweden	8282	UK	717	s	99
UK	8190	Norway	701	Sweden	98
Switzerlan					
d	8153	Finland	668	Germany	82
Netherland					
s	8152	Spain	533	US	78
Norway	7933	Ireland	457	UK	78
Denmark	7852	Austria	430	France	73
		Switzerlan			
Portugal	7528	d	106	Austria	69
Germany	7089	US	30	Japan	66
Japan	6484				
Spain	5052				

There are a few conclusions that can be drawn from these data. First, countries that are more rural require more driving on average than urbanized countries with developed public transit systems. Second, regardless of a nation's status as primarily urban or rural, the United States appears to be the nation most reliant on personal

⁶²⁹ OECD (2004). Retrieved: September, 7, 2007. Website: <http://stats.oecd.org/index.aspx>

automobile use. Third, we can infer that regardless of the rural or urban character of a nation, emphasis on public transit is negatively related to the use of personal vehicles. The act of routine commuting by personal automobile can be considered the least efficient in terms of both time use, and sustainability since it is difficult for a driver to do anything else while driving.⁶³⁰ In addition, the large amount of resources used to operate an automobile compared to more efficient forms of transportation make this pattern of home to work travel harmful to sustainability.

Data relating to employment and economic activity can help us infer the likely nature of informal household labor when used in conjunction with our understanding of the role of public policy in facilitating certain social behaviors. One method of inferring the amount of leisure time is to consider how much people work and how many people are employed. Using this method is potentially ambiguous in the sense that there are a variety of potential scenarios such high levels of unemployment versus more single earner households. Using this method, we can hypothesize that the more people work either in terms of hours or number of people in employment the less time there is available for other activities. Additionally, there is an intersection between the number of people in the labor market and the number of hours worked in terms of its effect on household activities. As the research of Goodin et al. shows, social policy can be used to distribute working time and non-work time to various groups⁶³¹.

⁶³⁰ One good example of this is the problem of automobile crashes caused while using cell phones to send text messages while driving. See: Edgecombe, G., (2006). Cell Phone Usage While Driving. *Law enforcement Technology*, 54(9), 141-143.

⁶³¹ Goodin, R., Rice, J. M., Parpo, A., Ericksson, L., (2008). *Discretionary Time*. Cambridge University Press.

Thus, an egalitarian welfare state such as Sweden can maintain both high levels of employment and high-levels of free time through social policy that limits the number of hours allocated for full time employment. The net effect of this policy is similar to more traditionalist welfare regimes such as Germany which is based on a sole income earner model in which one spouse stays at home and attends to domestic affairs. However, when hours are long and employment high, inevitably informal work and discretionary time suffer. As the data relating to employment, unemployment and inactivity suggest, liberal countries with high employment and long hours tend to have the least discretionary time whereas countries with either lower levels of employment or shorter work weeks tend to have larger amounts of time for non-work-related activities⁶³².

Finally, it should be noted that to accurately derive some understanding of the potential for informal labor and non-work activities it is necessary to consider policy, employment rates and hours in conjunction with one another. If one element is left out, especially policy, observed numbers related to work time might be misconstrued. For instance, a low rate of employment in a liberal country is most likely associated with a high rate of structural unemployment and economic decline, whereas in traditionalist welfare regimes a similar rate of employment might be construed as representing effective public policy. Ultimately, the most prominent situation in this dynamic is exhibited in liberal and egalitarian welfare states. Both types of countries exhibit similar

⁶³² Goodin, R., Rice, J. M., Parpo, A., Ericksson, L., (2008). *Discretionary Time*. Cambridge University Press.

rates of employment, but differ tremendously in both the amount of hours spent at work and in the amount of free time available to the average person⁶³³.

A Few Concluding Comments on Measuring Time Use

Granted much can be gained from the information presented here; however, this analysis does possess some significant limitations. A key problem is the lack of comparable time use data for the countries being studied. Although there exist cross-national individual level time use data⁶³⁴, its consistency and representativeness in terms of samples drawn is limited. From the research conducted here time use needs to be assessed on a number of levels ranging from daily activities, to activity across a life span. For instance, we might look at how certain demographics such as men or college graduates spend their time throughout their life spans. Additionally, this type of multi-layered data needs to consider the age, income, demographic background, profession and geographic location of respondents. Such depth in time use research is arguably necessary since many structural factors such as commutes and cost of living factor heavily into determining time use patterns. Although some of these factors can be inferred from other statistics, as would be the case with inferring typical commute times through average miles driven each year, the ultimate utility of possessing a comprehensive image of individual behavior is that it allows the researchers to

⁶³³ Goodin, R., Rice, J. M., Parpo, A., Ericksson, L., (2008). *Discretionary Time*. Cambridge University Press. confirms these findings along with offering some analysis as to the role of policy in such situations.

⁶³⁴ A good example of this is the Multinational Time Use Study (2008). Retrieved: January, 23, 2008. Website: www.timeuse.org/mtus.

systematically assess the influences of various social structures and economic settings on time use.

Social Indicators

Social indicators can provide an understanding of the nature of society on both an individual level and a group level. In addition to this, there are a number of sub-indexes used to gauge various aspects of society and social activity. In general, we find that the pattern exhibited amongst these indices is consistent with the overall model presented in this work. That said, there are some notable exceptions which inadvertently contribute to our understanding of how certain countries have developed with regard to their time use patterns.

Social Attitudes

Social attitudes represent a relatively abstract and yet important aspect of social sustainability. How approving people are of the country they live in, along with the status of their own lives contributes to either a positive or negative public discourse, which may in turn motivate toward or alienate from contributing toward other aspects of social sustainability⁶³⁵. Viewed, from another perspective, public attitudes may be the product of a mass version of psychological dissonance in which people have been propagandized to believe things are much better than they actually are⁶³⁶.

⁶³⁵ Colman, S., (1988). Social Capital in the Creation of Human Capital. *American Journal of Sociology*, 94, 95-120.

⁶³⁶ Heider, F., (1958). Balance Theory and Cognitive Dissonance Theory. In *The Psychology of Interpersonal Relations*. NY: Wiley. Chapter 7: Sentiment pp.174-217.

To analyze social attitudes a number responses to questions ranging from perception of personal safety to life satisfaction were compiled into an index, and this index's relationship with time use was analyzed⁶³⁷. As the results depict, there appears to be a mix of both theoretical explanations at work. In particular, Scandinavians and Americans tend to have a rather positive view of both their country and their own lives. This observation seems particularly ironic considering that the United States scores last both in terms of overall sustainability and time equity. In this instance Americans' overly positive view of themselves might be a consequence of either ignorance, nationalism or some other "false consciousness" consideration. Data from other countries indicate that in most instances there is a positive correlation between positive social attitudes and other indicators of sustainability.

Social Attitudes

Perception of Safety burglary⁶³⁸

Perception of safety when walking in the dark

Freedom in decision making⁶³⁹

⁶³⁷ For a full list of social attitudes see chapter 3.

⁶³⁸ How likely people feel they are safe from being robbed at home.

⁶³⁹ Mean ratings on a ten-point scale ranging from have no freedom in individual decisions to complete freedom

Happiness net ⁶⁴⁰
 Life satisfaction ⁶⁴¹
 Life satisfaction inequality ⁶⁴²

Table 5.15, Social Attitudes ⁶⁴³

Country	Score	Category
Austria	0.752500	T
Finland	0.701383	E
Sweden	0.701111	E
Denmark	0.682500	E

⁶⁴⁰ This statistic is compiled from responses to the survey question: "Taking all things together, would you say you are: very happy, quite happy, not very happy, or not at all happy?". The "Happiness (net)" statistic was obtained via the following formula: the percentage of people who rated themselves as either "quite happy" or "very happy" minus the percentage of people who rated themselves as either "not very happy" or "not at all happy".

⁶⁴¹ Most scores are based on responses to the following question: "All things considered, how satisfied or dissatisfied are you with your life-as-a-whole now? 1 dissatisfied to 10 satisfied" (item code O-SLW/c/sq/n/10/a). Scores of ten nations are based on responses to a somewhat different question: "Suppose the top of the ladder represents the best possible life for you and the bottom of the ladder the worst possible life. Where on this ladder do you feel you personally stand at the present time?" The response was rated on a ladder scale ranging from 0 to 10 (item code O-BW/c/sq/l/11/c). The data were transformed the scores using the information of nations in which both this item and the above question on life-satisfaction had been used in about the same years

⁶⁴² These data are indicative of how much citizens differ in enjoyment of their life-as-a-whole. Life-satisfaction assessed by means of surveys in samples of the general population. Scores may be too low in some countries, due to undersampling of rural and illiterate population. In this ranking the focus is not on the level of happiness in the country, but on inequality in happiness among citizens. Inequality in happiness can be measured by the dispersion of responses to survey questions. The degree of dispersion can be expressed statistically in the standard deviation, and surveys items rated on a 10-step numerical scale are particularly useful for that purpose. Most scores are based on responses to the following question: "All things considered, how satisfied or dissatisfied are you with your life-as-a-whole now? 1 dissatisfied to 10 satisfied".

⁶⁴³ A high score indicates that most people maintain a positive level of social attitudes.

US	0.677500	L
Netherlands	0.675556	T
Switzerland	0.673056	T
Iceland	0.657500	E
Canada	0.641400	L
Norway	0.627400	E
Ireland	0.626250	L
Belgium	0.597222	T
Australia	0.593000	L
UK	0.590667	L
France	0.567222	T
Italy	0.522000	T
Japan	0.492500	T
Spain	0.474444	T
Germany	0.414444	T
New Zealand	0.393000	L
Portugal	0.355833	T

Social capital/ Political efficacy

Social capital, political efficacy, and civic engagement can be broadly defined as individual's involvement in, and appreciation of various formal and informal social institutions⁶⁴⁴. By and large it appears that the rankings exhibited in the measure are the result of both actual behaviors and self-appraisals that reflect cultural values. On the one hand, it is likely that liberal countries such as the United States and Australia over-report their confidence in social institutions. One can possibly attribute this to a high level of nationalism exhibited in these countries⁶⁴⁵. Additionally, some other countries have a political culture of cynicism which may influence beliefs relating to political efficacy. However, as many observers such as Tocqueville⁶⁴⁶ have noted, liberal democracies tend

⁶⁴⁴ Portes, A., (1998). Social Capital: its origins and applications in modern sociology *Annual Review of Sociology*, 24, 1-24.

⁶⁴⁵ This assertion is derived data relating to nationalism, originally used in the World Values Survey.

⁶⁴⁶ Tocqueville, A., (2004). *Democracy in America*. Vintage Books.

to be highly amenable to civic engagement. In addition to the liberal democracies, the Scandinavian countries also tend to score relatively high on this set of measures.

Social capital/ Political efficacy

Civil and political liberties⁶⁴⁷

Parliamentary elections voter turn out⁶⁴⁸

Electoral turn out presidential⁶⁴⁹

Confidence in social institutions: Armed forces⁶⁵⁰

Confidence in social institutions: Church⁵²⁵

Confidence in social institutions: Civil Service

Confidence in social institutions: Companies

Confidence in social institutions: Legal system

Confidence in social institutions: Parliament

Confidence in social institutions: Police

Confidence in social institution: Press

Confidence in social institutions: Trade unions

Members of Voluntary organizations: Charity⁶⁵¹

Members of Voluntary organizations: Education

Members of Voluntary organizations: Environmental

Members of Voluntary organizations: Political Parties

Members of Voluntary organizations: Professional Organizations

Members of Voluntary organizations: Sports

Members of Voluntary organizations: Unions

Attended a political demonstration⁶⁵²

Joined a boycott⁶⁵³

Signed a petition⁶⁵⁴

⁶⁴⁷ Units: Index Ranging from 7 (High Levels of Liberties) to 1 (Low

Freedom House, Freedom in the World 2000-2001, New York: Freedom

⁶⁴⁸ Percent turn out parliamentary elections, case excluded if data exists for presidential turnout

⁶⁴⁹ Percent turnout presidential election, The United States was the only valid example

⁶⁵⁰ Proportion of people in 1990s World Values Survey expressing confidence in this social institution.

⁶⁵¹ Proportion saying they are active members of voluntary organizations in this category, 1990s surveys. World Values Survey (2007). Retrieved, August, 2, 2007. Website: <http://www.worldvaluessurvey.org/>

⁶⁵² Proportion of respondents in 1990s World Values Survey who have ever attended a demonstration. World Values Survey (2007). Retrieved, August, 2, 2007. Website: <http://www.worldvaluessurvey.org/>

⁶⁵³ Proportion of respondents in 1990s World Values Survey who have ever joined a boycott. World Values Survey (2007). Retrieved, August, 2, 2007. Website: <http://www.worldvaluessurvey.org/>

⁶⁵⁴ Proportions in 1990s World Values Survey

Some what interested in politics⁶⁵⁵
 Trust in other people ⁶⁵⁶
 Very proud of nationality⁶⁵⁷
 Will fight for country⁶⁵⁸

Table 5.16, Social Capital

Country	Score	Category
Australia	0.689219	L
US	0.642448	L
Sweden	0.583904	E
Norway	0.574698	E
Canada	0.544744	L
Finland	0.478579	E
Denmark	0.471518	E

responding that they signed a petition. World Values Survey (2007). Retrieved, August, 2, 2007. Website: <http://www.worldvaluessurvey.org/>

⁶⁵⁵ Proportions in 1990s World Values Survey responding that they are somewhat interested in politics. World Values Survey (2007). Retrieved, August, 2, 2007. Website: <http://www.worldvaluessurvey.org/>

⁶⁵⁶ Percentage in 1990s World Values Survey agreeing that people can be trusted.

⁶⁵⁷ Percentage responding in 1990s World Values Survey that they were very proud of their nationality. World Values Survey (2007). Retrieved, August, 2, 2007. Website: <http://www.worldvaluessurvey.org/>

⁶⁵⁸ Percentage in 1990s World Values Survey responding that they are willing to fight for their country. World Values Survey (2007). Retrieved, August, 2, 2007. Website: <http://www.worldvaluessurvey.org/>

Switzerland	0.470418	T
Netherlands	0.457569	T
France	0.452944	T
Germany	0.443800	T
Ireland	0.439926	L
UK	0.417928	L
Belgium	0.402966	T
Italy	0.400348	T
Austria	0.395747	T
Japan	0.366422	T

Social group indicators

Indicators that relate to various aspects of individual and group welfare comprise a significant aspect of the social environment. As prior discussions have noted, things such as the rate of incarceration, poverty and the divorce rate allude to the level of social equity but also are connected to other aspects of social and economic functioning. In general, egalitarian welfare states fare best while traditionalist states follow shortly behind, and the liberal states come in last. From these findings, we can infer two basic themes from social indicators. First, when various aspects of society fail to function they inevitably drag other things with them since many aspects of society are interdependent on one another. Second, the role of policy is rather apparent in both influencing and causing certain situations such as a high incarceration rate⁶⁵⁹ or high rate of teen pregnancy⁶⁶⁰ in addition to failing to mitigate the ill effects of other situations such as child poverty⁶⁶¹.

Group social indicators

⁶⁵⁹ Sorensen, J., Steven, D., (2002). The Effect of State Sentencing Policies on Incarceration Rates. *Crime & Delinquency*, 48(3), 456-475.

⁶⁶⁰ Dailard, C., (2003). Understanding 'Abstinence': Implications for Individuals, Programs and Policies. *The Guttmacher Report on Public Policy*, 6(5).

⁶⁶¹ Vleminck, K., Smeeding T., (2000). *Child Well-being, Child Poverty and Child Policy in Modern Nations*. The Policy Press.

Prisoners per capita
 Total crimes per capita
 Child poverty
 Age of first child birth⁶⁶²
 Abortions per capita
 Child maltreatment deaths⁶⁶³
 Teen birth rate
 Divorce rate

Table 5.17, Group Social Indicators

Country	Score	Category
Sweden	0.839291	E
Belgium	0.836617	T
Austria	0.750382	T
Iceland	0.745465	E
Netherlands	0.680424	T
Finland	0.661944	E

⁶⁶² This negative scale item was selected since it is presumably an indicator of how established parents are prior to the birth of their first child. The lower the age, presumably the less well established.

⁶⁶³ Child maltreatment deaths per 100,000 population under 15.

Norway	0.628061	E
Australia	0.609512	T
Switzerland	0.619448	T
France	0.609311	T
Denmark	0.608305	E
Japan	0.584127	T
Germany	0.565221	T
Spain	0.521191	T
Italy	0.460583	T
Canada	0.450689	L
New Zealand		L
Zealand	0.431141	
Portugal	0.406548	T
Ireland	0.340285	L
UK	0.266015	L
US	0.016409	L

Table 5.18, Social Indicators⁶⁶⁴

Country	Prisoners per capita⁶⁶⁵	Child⁶⁶⁶ Poverty Rate	Abortions⁶⁶⁷	Teen Birth Rate	Divorce⁶⁶⁹ Rate	% Lone Parent⁶⁷⁰ Families
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⁶⁶⁴ A good amount of data is missing for various indicators. Relative to how the missing data was accounted for in this and other parts of the analysis, a score was calculated for a given country by considering the number of variables available. For instance, if an index used five variables and only four were available then that country's score was based off of the average of four instead of five items.

⁶⁶⁵ International Centre for Prison Studies (2000). World Prison Brief.

				668		
Australia	116	12.6		21	2.52	8
Austria	100			23		8
Belgium	88	4.4		10	0.88	7
Canada	116	15.5	2.15056	27		11
Denmark	72	5.1		10	2.81	6
Finland	71	2.6	1.8924	13	1.85	9
France	95	7.9	2.65644	9		7
Germany	96	10.7	1.18811	13		5
Iceland	40		2.71958	29		
Ireland		16.8		16		9
Italy	100	20.5	2.30861	9		7
Japan	54	12.2	2.69214	4		5
New Zealand	160		2.76902	35	2.63	9
Norway	64	3.9	2.9767	19		9
Portugal	13			25		8
Spain	144	12.3		12		6
Sweden	75	3.9	4.164520	13		3
Switzerland	72			5		6
UK		19.8		33	3.08	10
US	715	22.4	4.09450	64	4.95	9

Education

Education provides both a basis for individual economic success and the achievement of an entire society in terms of its economy and the intellect of the populous.

⁶⁶⁶ UNICEF, 2004, Child poverty: An overview of child well being in developed countries.

⁶⁶⁷ The Human Development Report (HDR) (2003). Retrieved: July, 27, 2007. Website: UNHDR.org

⁶⁶⁹ Sardon, J. P., (2002). Recent Demographic Trends in the Developed Countries. *Population*, English Edition, 57, Jan-Feb.

⁶⁷⁰ OECD (1995). Retrieved: June, 17, 2008. Website: <http://stats.oecd.org/index.aspx>

⁶⁶⁸ United Nations Population Division (2004). *World Population Prospects: The 1994 Revision*.

To properly assess education, it must be judged both relative to the economic structure and the culture of the country in question. Also, it is necessary to consider a number of factors such as years of schooling and proficiency at basic academic tasks. Through measuring various aspects of education it is possible to give some definition to the inherently nebulous concept of what it means to be educated. Generally speaking, there is a relatively consistent pattern of association between years of education and basic academic proficiency. However, it is noteworthy the United States represents the role exception to this general.

In particular, the average American has more schooling than any other resident of the industrialized world, this leads to receiving a high score on this indicator. Although this obviously is a testament to American's valuing of education, and in particular higher education, it does raise some questions about the effectiveness of the American education apparatus when America's overall performance is considered along with this information on level of content with formal schooling⁶⁷¹. Specifically, we should not rush to equate years of schooling with educational quality or other measures of social progress in the case of the United States. Relative to the context of the efficiency of the American education system we can question its claims of effectiveness through considering that the rate of unemployment in the U.S. for those with a college education is the highest in the

⁶⁷¹ To substantiate this point one need only consider the most extensive comparative research to date which is the PISA (Program for International Student Assessment) data collected by the OECD which places the United States well below average for educational attainment in all basic areas. See OECD (2006). *PISA data*, Retrieved: August, 12, 2009. Website: <http://nces.ed.gov/surveys/PISA/pisa2006highlights.asp>

developed world⁶⁷². Additionally, if we view the lengthy process of education relative to the needs of the economy and an individual's financial security, a lengthy period of education may prove to be an economic hindrance in a certain capacity⁶⁷³. However, it is also the case that education, and especially higher education, provides the opportunity to advance an individual's position while he or she is not actively involved in the labor market. Thus, when economic times are difficult and people cannot find employment an investment in education is a rational action. In addition to this, when we look at available measures of basic educational effectiveness (Table 5.19) we find a significantly different dynamic which suggests that basic proficiency is more a product of an effective educational system and motivated students than it is of years of schooling. Ultimately, the data portray a situation in which education serves a necessary social and economic function; however, the data also suggest that the contribution of education to society varies depending upon the measure and the country in question.

Education

Average years of schooling

Percent population with a high rate of literacy

⁶⁷² This conclusion is derived from using the 2004 ILO data for unemployment based upon education.

⁶⁷³ Bosquet, M., (2008). *How the University Works: Higher Education and the Low-Wage Nation*, NYU Press.

Mathematical literacy⁶⁷⁴
 Proportion of 20 year olds in tertiary education
 Scientific literacy⁶⁷⁵
 Spending per secondary school student
 Total tertiary enrollment⁶⁷⁶

Table 5.19, Education

Country	Score	Category
Sweden	0.953212	E
Norway	0.917199	E
Finland	0.891185	E
Canada	0.884693	L
New Zealand	0.870663	L
US	0.866625	L
Japan	0.863083	T
Austria	0.861241	T
Belgium	0.849966	T
Denmark	0.827392	E
Australia	0.822911	L
UK	0.812493	L
France	0.809498	T
Iceland	0.808117	E
Spain	0.794588	T
Germany	0.757767	T
Switzerland	0.752635	T
Italy	0.745173	T
Ireland	0.674475	L
Netherlands	0.673357	T
Portugal	0.585345	T

Table 5.20 Average Years of Schooling⁶⁷⁷

⁶⁷⁴ Generally, defined as basic conceptual competency at mathematics related topics. For further explanation see: OECD. *Assessing Scientific, Reading and Mathematical Literacy A Framework for OECD (2006). PISA data*, Retrieved: August, 12, 2009. Website: <http://nces.ed.gov/surveys/PISA/pisa2006highlights.asp>.

⁶⁷⁵ Generally, defined as basic conceptual competency at scientific related topics. For further explanation see: OECD. *Assessing Scientific, Reading and Mathematical Literacy A Framework for OECD (2006). PISA data*, Retrieved: August, 12, 2009. Website: <http://nces.ed.gov/surveys/PISA/pisa2006highlights.asp>

⁶⁷⁶ Gross enrolment ratio, tertiary level is the sum of all tertiary level students enrolled at the start of the school year, expressed as a percentage of the mid-year population in the 5 year age group after the official secondary school leaving age.

⁶⁷⁷ UNESCO (2006). *Global Education Digest for 2006*.

Country	Years of schooling	Category
US	12	L
Norway	11.8	E
New Zealand	11.7	L
Canada	11.6	L
Sweden	11.4	E
Australia	10.9	L
Switzerland	10.5	T
Germany	10.2	T
Finland	10.0	E
Denmark	9.7	E
Japan	9.5	T
Ireland	9.4	L
UK	9.4	L
Belgium	9.3	T
Iceland	8.8	E
Austria	8.4	T
France	7.9	T
Spain	7.3	T
Italy	7.2	T
Portugal	5.9	T

Table 5.21 Academic Proficiency⁶⁷⁸

Country	Score	Category
Japan	1.000000	T
Sweden	0.948843	E
Austria	0.934116	T
France	0.918639	T
Belgium	0.917695	T
Iceland	0.912309	E
Finland	0.882507	E
Norway	0.877710	E
Canada	0.875257	L
Spain	0.873653	T
Italy	0.844779	T
Denmark	0.837613	E
UK	0.818344	L
New Zealand	0.806623	L
Australia	0.802351	L
US	0.775861	L
Switzerland	0.768357	T
Germany	0.765854	T
Ireland	0.628335	L
Portugal	0.579922	T
Netherlands	0.563380	T

Government

On a general level government provides a basic apparatus for the management of society and a comprehensive public institution which can facilitate public trust and action. Although there are a number of ways of measuring the performance of government, the measure used here includes public expenditures, government debt, and people's confidence in public institutions. the analysis of the government performance data reveals that yet again the Scandinavian countries tend to fair best while liberal countries perform the least well.

⁶⁷⁸ Number represents aspects of education index that deal with literacy and scientific proficiency derived from the OECD (2006). *PISA data*, Retrieved: August, 12, 2009. Website: <http://nces.ed.gov/surveys/PISA/pisa2006highlights.asp>.

Government

Government expenditures per capita⁶⁷⁹

Public institutions index⁶⁸⁰

Government Debt as percent of GDP

Table 5.22 Government⁶⁸¹

Country	Score	Category
Norway	0.969050	E
Finland	0.763911	E
Denmark	0.742750	E
Sweden	0.724608	E
Iceland	0.689161	E
Switzerland	0.635157	T
Ireland	0.625324	L
Austria	0.598675	L
Netherlands	0.596260	T
Australia	0.590862	L
UK	0.589594	L
Germany	0.559630	T
New Zealand	0.556359	L
Belgium	0.505175	T
Spain	0.479534	T
Portugal	0.459576	T
US	0.458970	L
Japan	0.445981	T
Canada	0.438689	L
Italy	0.405326	T
France	0.347038	T

Taxes

From the perspective of sustainability, when taxes structured progressively and redistributed they provide both a measure of funding various social projects that enhance social and physical infrastructure while also helping to advance the needs of individuals.

⁶⁷⁹ All non military expenditures per capita.

⁶⁸⁰ Public institution index indicates the state of the country's public institutions. The rankings are calculated from both publicly available data and the Executive Opinion Survey, a comprehensive annual survey conducted by the World Economic Forum together with its network of Partner Institutes. World Economic Forum , *Global Competitiveness Report 2004-2005*.

⁶⁸¹ Number represents score in greater index.

Also, taxation provides a method of regulating the consumption of various goods through artificially increasing or decreasing via tax credits the market cost. Taxes represent the most pervasive form of material redistribution. Although most of the analysis of taxation focuses on the relative rate of taxation, this indicator is somewhat misleading since it is not uniform relative to the populations to which it is applied. Also, the amount of individual taxation is variable along with the average, real money tax burden.

To help refine our understanding of the role taxation plays in governance and sustainability the following tables outline a number of aspects of taxation. Table 5.23 represents the overall index of taxation used in a measure of sustainability. This measure considers various tax rates along with other variables. It is assumed that the more progressive a taxation system is and the higher taxes are on certain environmentally or socially problematic goods such as fuel, the more taxation policy will contribute to the promotion sustainable outcomes. As the data show, egalitarian countries tend to score the highest on this measure followed by traditionalist countries and lastly the liberal countries bring up the rear in this area.

Taxes

Taxation Diesel

Taxation Gasoline

Marginal Taxation Rate ⁶⁸²

Tax brackets ⁶⁸³

VAT and sales taxes ⁶⁸⁴

Corporate Tax Rate

⁶⁸² National average marginal taxation rate.

⁶⁸³ Marginal taxation rates based upon bottom, middle and top third of income brackets expressed percentage rate.

⁶⁸⁴ Value Added Tax, and sales tax.

Table 5.23, Taxes,⁶⁸⁵

Country	Score	Category
Belgium	0.909339883	T
Denmark	0.848408091	E
Sweden	0.826935962	E
Germany	0.812872140	T
Italy	0.787374161	T
Norway	0.781928526	E
Finland	0.779382378	E
France	0.771298617	T
Netherlands	0.769534638	T
UK	0.759866988	L
Austria	0.757508572	T
Portugal	0.687436686	T
Spain	0.665951675	T
Ireland	0.602510199	L
Australia	0.573120776	L
New Zealand	0.563593239	L
Japan	0.548528388	T
Canada	0.503456317	L
Switzerland	0.495459452	T
Iceland	0.480129920	E
US	0.441494504	L

Table 5.24 displays the percent total income paid in taxes by various income groups and 5.25 presents data on the taxation rate of various social groups such as individuals and families. Table 5.24 can be seen as being both representative of the level of progressiveness in individual taxation along with implicitly indicating how much money is available for redistribution and general expenditures. Along a similar line, table 5.25 indicates whether or not taxation policy promotes certain social groups such as families, married couples, or single people. It is interesting to note and generally in line with the greater analysis that liberal countries have a larger share of taxation from the lowest 30% of earners than do either traditionalist or egalitarian countries. Additionally,

⁶⁸⁵ Number represents score in greater index.

we should also consider the relative nature of inequality in the countries in question. Specifically, the lower share of taxes derived from the top 30% in more equal egalitarian and traditionalist societies can be seen as having a greater effect on economic equality than a comparatively higher rate of taxation in a highly unequal society. Also, the data displayed in table 5.25 reveal that that egalitarian societies tend to have the most progressive rate of taxation while liberal countries have the least. Additionally, it is also noteworthy that all countries tax families at a lower final rate than individuals. This implicitly suggests that all nations attempt to promote a social structure that is conducive to some type of familial unit.

Table 5.24, Percent Tax Burden by Income Group⁶⁸⁶

Country	Bottom 30%	Middle 40%	Top 30%
Australia	3.70	31.1	65.1
Belgium	0.06	33.6	63.5
Canada	6.30	33.4	60.4
Denmark	14.1	37.2	52.2
Finland	0.10	33.4	58.6
France	0.07	23.5	67.9
Germany	0.10	36.5	53.6
Italy	0.09	31.0	62.3
Netherlands	0.12	36.1	48.7
Norway	0.10	36.1	53.8
Sweden	0.11	35.8	53.3
UK	3.90	32.0	62.0
US	6.20	28.4	65.3

⁶⁸⁶ OECD (2006). Retrieved: July, 12, 2007. Website: <http://stats.oecd.org/index.aspx>

Table 5.25, Tax rate for income bracket and tax wedge⁶⁸⁷ for individuals and families

Country	0.67%	100%	133%	167%	Tax Wedge	Tax Wedge
	Median	Median	Median	Median	Families	Individuals
Australia	0.35	0.35	0.47	0.47	0.13	0.23
Austria	0.57	0.57	0.60	0.42	0.29	0.45
Belgium	0.71	0.66	0.68	0.68	0.40	0.55
Canada	0.35	0.41	0.34	0.37	0.21	0.30
Denmark	0.43	0.49	0.63	0.63	0.31	0.44
Finland	0.54	0.55	0.59	0.59	0.39	0.46
France	0.67	0.56	0.56	0.60	0.39	0.48
Germany	0.60	0.66	0.62	0.44	0.33	0.50
Iceland	0.39	0.39	0.39	0.39	0.03	0.26
Ireland	0.31	0.33	0.53	0.50	0.13	0.26
Italy	0.52	0.52	0.61	0.59	0.36	0.46
Japan	0.29	0.33	0.42	0.33	0.20	0.24
Netherlands	0.55	0.51	0.42	0.52	0.32	0.42
New Zealand	0.21	0.33	0.33	0.39	0.17	0.20
Norway	0.43	0.51	0.51	0.51	0.27	0.37
Portugal	0.39	0.47	0.47	0.56	0.24	0.33
Spain	0.46	0.46	0.48	0.37	0.31	0.38
Sweden	0.51	0.63	0.63	0.67	0.41	0.49
Switzerland	0.34	0.36	0.41	0.43	0.18	0.30
UK	0.41	0.41	0.48	0.48	0.18	0.30
US	0.34	0.34	0.43	0.43	0.19	0.30

Finally, tables 5.26 and 5.27 represent the percent of gross domestic product paid in total taxes and individual taxes, along with per capita GDP and purchasing power parity, an adjusted figure that represents the average amount paid by an individual citizen in the country in question. By using these measures it is possible to gain an idea of how much taxation people pay, both relative to how much a country produces per capita and

⁶⁸⁷ 1. The difference between before-tax and after-tax wages. The tax wedge measures how much the government receives as a result of taxing the labor force. Essentially it is a representation of percent of income paid in taxes. Data from OECD (2004). Retrieved: July, 16, 207. Website: <http://stats.oecd.org/index.aspx>

2. A measure of the market inefficiency that is created when a tax is imposed on a product or service. The tax causes the supply and demand equilibrium to shift, creating a wedge of dead weight losses.

what it costs to live in a certain country. By doing this, it is possible to gain a more realistic idea of what people actually pay to their government in taxes. What is interesting about the calculation presented in that table 5.27 is that it suggests that the much commented on differential between countries in terms of tax burden is not as great as might be thought⁶⁸⁸. Although this is an average figure and rates are obviously higher or lower depending upon individual income, these aggregate figures suggest that a country's performance in terms of social management and policy is more of an issue of structure and priority than it is of per capita funding. As the following section on social expenditures will note, the primary issue in delivering social services to a population is more one of ideology than funding. Also, we must consider the relative trade-off between paying for services through universal taxation or via personal expenditures. For instance, the rate and amount of taxation in the United States is lower than that in other countries, but many individuals must pay for their healthcare, their higher education, and their retirement; in some instances these costs may be substantially higher than the average amount of taxation paid in other countries which provide for healthcare, higher education and retirement.

⁶⁸⁸ Korpi, W., (1980). Social policy and distributional conflict in the capitalist democracies. A preliminary comparative framework. *West European Politics*, 3(3), 296-316.

Table 5.26, Total Taxation as percent of GDP and Individual Taxes as Percent of GDP⁶⁸⁹

Country	Total Tax % GDP	Country	Individual Tax % GDP
Sweden	52.4	Denmark	43.7
Denmark	48.8	Sweden	31.5
Finland	46.9	Finland	29.9
Belgium	45.6	Iceland	29.4
France	45.3	New Zealand	29.0
Austria	43.7	UK	27.8
Italy	42.0	Belgium	27.1
Netherlands	41.4	Portugal	25.7
Norway	40.3	Canada	25.4
Germany	37.9	Australia	24.4
UK	37.4	Italy	23.5
Canada	35.8	Norway	23.5
Spain	35.2	Austria	22.8
New Zealand	35.1	Netherlands	22.7
Iceland	34.8	Switzerland	22.5
Switzerland	34.7	France	22.4
Portugal	34.5	Ireland	22.1
Australia	31.5	Germany	21.4
Ireland	31.1	US	19.3
US	29.6	Spain	18.9
Japan	27.1	Japan	13.2

⁶⁸⁹ Figures are derived from OECD (2008). *Revenue Statistics 1965-2008*. Data for 2004.

Table 5.27, GDP Adjusted Average Tax, PPP/GDP Adjusted Average Tax in USD⁶⁹⁰

GDP		GDP/PPP	
Country	Adjusted	Country	Adjusted
Denmark	13114.00	Denmark	11208.5
Switzerland	8282.76	Sweden	7176.34
Norway	8187.61	Iceland	7106.02
Iceland	7958.74	Finland	6967.12
Sweden	7893.98	Belgium	6889.46
Finland	7036.79	Norway	6656.59
UK	6775.98	UK	6332.69
Belgium	6407.20	Canada	6255.03
US	6286.95	Switzerland	6135.38
Austria	5435.19	Austria	5782.12
Netherlands	5402.58	Australia	5779.25
Canada	5191.67	US	5767.84
France	5101.57	Netherlands	5747.43
Germany	5050.38	Italy	5458.13
Ireland	4734.57	France	5427.20
Japan	4690.76	Germany	5153.45
		New	
Australia	4623.40	Zealand	4939.22
Italy	4530.25	Ireland	4509.11
New			
Zealand	3605.63	Portugal	3707.54
Spain	2752.98	Japan	3693.51
Portugal	2632.35	Spain	3484.78

Social Expenditures

Social expenditures manifest themselves in a variety of ways and can be seen as contributing towards sustainable outcomes on both a social and individual level. Much like other areas surveyed there appear to be two separate explanations at work in this area. On the one hand, most countries' social expenditures occur through redistributive taxation and are relatively efficient in terms of beauracracies and do not require value-

⁶⁹⁰ These calculations are based upon either an extrapolation of actual amount paid in taxes based upon GDP and average tax burden, or, GDP, average tax and Purchasing power parity. To derive these figures the per capita GDP, represented in USD, is multiplied by a decimal representation of the average individual tax, then for the PPP adjusted the figure is multiplied by a decimal representation of the Purchasing Power Parity.

added profits. On the other hand, liberal countries (the United States in particular) have social service systems which are funded directly by individuals, operated mostly by the private sector and are often for profit. Thus, as many have been noted⁶⁹¹, the cost of delivering social services such as health care, education and child care in liberal countries is elevated due to bureaucratic redundancy and profit seeking by private parties.

As that set forth in table 5.28 indicates the expenditures for both public and private social services tend to be highest in egalitarian countries and lowest in liberal countries with traditionalist nations being in the middle. However, the United States- which tends to be mostly fee for service and delivered by the for-profit private sector- is the exception to this trend. Most notably the cost of healthcare places the total social expenditures at a level that is on par with the most egalitarian nations. When important characteristics such as health outcomes and educational proficiency are considered, not only does the American situation contribute to a relatively economically inefficient system of delivering social services but it also can be seen as having negative consequences for time use since people must allocate more resources to finance such benefits and hence work longer hours.

Aside from independently wealthy individuals, this way of doing business in America usually means that the people using these services have either less money or are working longer hours to be able to afford these services. What this amounts to is that individuals in this situation are punished either relative to time use or monetarily for

⁶⁹¹Gwatkin , A., Bhuiya , C., Victora, D., (2002). Making health systems more equitable. *The Lancet*, 364(9441), 1273-1280.

using services that are a necessary part of existence. In a country that socializes the cost of such services through taxes, the individual burden is mitigated so that no one individual is excessively hindered through his or her use of social services which the average cost of things such as taxes might be higher in these countries, the private expenditures for social services are much lower. As data from other countries indicate this produces a two-fold benefit. First, there is no adverse financial incentive for pursuing social services; second, by making services readily available to people, they will tend to be more healthy, better educated, etc, and hence more productive in both an economic and social sense.

Social Expenditures

Net social expenditures⁶⁹²

Education as % of total government expenditures (figure out why not in education)

Municipal waste expenditures

Public health care funding per capita

Health care funding⁶⁹³

Total healthcare expenditure as percentage of GDP

Education Expenditure as percent of GDP (figure out why not in education_

Childcare Expenditures

Expenditures Per Child⁶⁹⁴

Expenditure on Childcare Support

Childcare Expenditure As percent of GDP

Family Benefits⁶⁹⁵

⁶⁹² Social expenditures per capita USD.

⁶⁹³ Per capita USD.

⁶⁹⁴ PPP adjust USD.

⁶⁹⁵ Total percent of income or value of child care, family social services, cash benefits. OECD (2004). Retrieved: July, 17, 2007. Website: <http://stats.oecd.org/index.aspx>

Table 5.28, Social Expenditures

Country	Score	Category
Iceland	0.812025	E
Denmark	0.741114	E
France	0.720800	T
US	0.696222	L
Norway	0.674750	E
Sweden	0.671448	E
Belgium	0.660774	T
Germany	0.646819	T
Switzerland	0.610156	T
UK	0.603322	L
Finland	0.591314	E
Australia	0.586150	L
Italy	0.581955	T
Netherlands	0.533023	T
Portugal	0.527735	T
Austria	0.513972	T
Canada	0.501234	L
New Zealand		L
	0.484777	
Spain	0.482055	T
Ireland	0.461726	T
Japan	0.445306	T

Table 5.29, Social expenditures as percent of government expenditures, total GDP and PPP adjusted in USD⁶⁹⁶

Country	%Gov Exp. ⁶⁹⁷	Country	% GDP ⁶⁹⁸	Country	PPP Adjusted GDP ⁶⁹⁹
France	33.1	France	32.2	Denmark	8251.75
Denmark	32.2	Sweden	30.9	France	8000.59
Germany	30.5	Germany	30.8	Norway	7977.73
Belgium	30.0	Belgium	29.5	Belgium	7600.81
Austria	29.3	UK	28.2	Austria	7424.46
Norway	28.2	US	27.0	Germany	7316.68
Italy	27.7	Netherlands	26.0	Italy	6439.37
Portugal	25.8	Italy	25.6	Finland	5963.04
Finland	25.7	Denmark	25.2	Netherlands	5873.75
UK	23.7	Austria	25.0	Switzerland	5573.25
Netherlands	23.2	Norway	24.4	UK	5385.15
Sweden	22.6	Portugal	24.3	Japan	5346.35
Iceland	21.7	Canada	24.0	Iceland	5238.49
New Zealand	20.6	Finland	23.6	US	5185.59
Switzerland	20.5	Australia	23.4	Sweden	5137.05
Australia	20.3	Iceland	23.2	Canada	4814.80
Canada	19.6	Japan	22.2	Australia	4793.37
Japan	19.1	Spain	19.7	Portugal	3716.78
Spain	19.0	New Zealand	17.7	Ireland	3628.49
Ireland	17.8	Ireland	16.0	New Zealand	3497.44
US	17.4	Switzerland	NA	Spain	3492.56

Health

Health outcomes represent the last major category of indicators used evaluate social sustainability. Through analyzing health-related data it is possible to ascertain how

⁶⁹⁶ OECD (2004). *Social expenditures*. Retrieved: January, 12, 2008. Website: http://stats.oecd.org/Index.aspx?datasetcode=SOCX_AGG.

⁶⁹⁷ This figure does not consider private expenditures or pensions.

⁶⁹⁸ Total public private expenditure.

⁶⁹⁹ Dollar amount of total social expenditure adjusted for per capita GDP and purchasing power parity.

effective the health care system is along with how various social and environmental factors affect people's health. Ultimately, the status of people's health dictates their ability to be involved in society along with reflecting society's ability to create social structures and patterns of activity that facilitate a healthy existence.

In addition to this, it is interesting to note that there are number of specific indicators and trends that contribute to the overall analysis of this work. In particular, various aspects of the performance of the United States reflect both the general influence of American society and policy on health outcomes along with time-related social structures affecting the well being of people. For instance, the rate of psychological and psychiatric-related illness in the United States is by far the highest in the industrialized world. Aside from presuming there is something innately dysfunctional about Americans, this statistic appears indicative of a society that places a high level of stress on its citizens⁷⁰⁰. Although overwork and time pressure obviously are not the sole factor in setting this level of psychological dysfunction, considering the low level of time equity present in the United States it appears likely that time use patterns are a significant contributing factor⁷⁰¹.

Additionally, statistics relating to obesity tell a similar sad tale. In the instance of obesity and other chronic illness we find that time use, specifically having the

⁷⁰⁰Sweikert, S. (2008). *An Hour a Day Could Keep The Doctor Away*. In: De Graaff, J., *Take Back Your Time*. Berret Koehler.

⁷⁰¹Michie, S., Cockcroft, A., (1996). Overwork Can Kill. *British Journal of Medicine*, 312, 921-922. See also: Sweikert, S., (2008). *An Hour a Day Could Keep The Doctor Away*, In: De Graaff, J., *Take Back Your Time*, Berret Koehler.

opportunity to exercise or partake in some type of preventative activity, is significantly correlated to an individual's health outcomes. Although it is also possible to attribute chronic diseases such as obesity or hypertension to other structural factors such as lack of exercise or poor dietary habits, it appears likely that even secondary factors such as dependence on automobiles can be seen as indirectly influencing time use and hence contributing to the relationship between physical and mental health and time equity.

Health

Private health care funding per capita

Life expectancy total

Infant mortality rate, total

Obesity rate

Percentage of life lived in ill health women

Percentage of life living in ill health men

Percentage of not reaching 65 females

Percentage of not reaching 65 males

Standard Non-Disability Active Life Years rate ⁷⁰²

Standard Death Rates

⁷⁰² Years of non-disability life, World Health Organization (2004). Retrieved: June 16, 2007. Website: www.WHO.org

Table 5.30, Obesity rate % total adult population⁷⁰³

Country	Rate	Category
US	30.6	L
UK	23.0	L
Australia	21.7	L
New Zealand		L
Canada	14.3	L
Spain	13.1	T
Ireland	13.0	L
Germany	12.9	T
Finland	12.8	E
Portugal	12.8	T
Iceland	12.4	E
Belgium	11.7	T
Sweden	9.7	E
Denmark	9.5	E
France	9.4	T
Austria	9.1	T
Italy	8.5	T
Norway	8.3	E
Switzerland	7.7	E
Japan	3.2	E

⁷⁰³ World Health Organization (2004). Retrieved: June 16, 2007. Website: www.WHO.org

Table 5.31, Psychological problems rate per 100,000⁷⁰⁴

Country	Rate	Category
US	4,208	L
Canada	3,756	L
France	3,617	T
Finland	3,587	E
Denmark	3,498	E
Switzerland	3,477	T
Belgium	3,464	T
Ireland	3,377	L
Austria	3,376	T
UK	3,338	L
Germany	3,325	T
Norway	3,198	E
Portugal	3,116	T
Sweden	3,108	E
Spain	3,038	T
Netherlands	3,023	T
Australia	2,954	L
Iceland	2,952	E
Italy	2,919	T
New Zealand	2,915	L
Japan	2,233	T

⁷⁰⁴ World Health Organization (2004). Retrieved: June 16, 2007. Website: www.WHO.org

Table 5.32, Infant mortality per 1,000⁷⁰⁵

Country	Rate	Category
Sweden	2.76	E
Japan	2.80	T
Iceland	3.27	E
France	3.41	T
Finland	3.52	E
Norway	3.64	E
Germany	4.08	T
Switzerland	4.28	T
Spain	4.31	T
Denmark	4.45	E
Austria	4.54	T
Belgium	4.56	T
Australia	4.57	L
Canada	4.63	L
Portugal	4.92	T
UK	5.01	L
Ireland	5.22	L
New Zealand	5.67	L
Italy	5.72	T
US	6.37	L

⁷⁰⁵ World Health Organization (2004). Retrieved: June, 16, 2007. Website: www.WHO.org

Table 5.33, Private healthcare funding per capita USD ⁷⁰⁶

Country	Funding Per Capita	Category
US	2,580	L
Switzerland	1,429	T
Canada	709	L
Germany	685	T
Austria	655	T
Belgium	652	T
Australia	611	L
France	564	T
Italy	535	T
Ireland	473	L
Japan	469	T
Spain	468	T
Denmark	434	E
Finland	415	E
Portugal	414	T
Iceland	406	E
Norway	391	E
New Zealand	357	L
UK	335	L

⁷⁰⁶ OECD (2004). Retrieved: July, 12, 2007. Website: <http://stats.oecd.org/index.aspx>

Table 5.34, Health⁷⁰⁷

Country	Score	Category
Japan	0.464	T
Switzerland	0.429	T
Canada	0.403	L
Sweden	0.390	E
Iceland	0.370	E
Norway	0.362	E
France	0.351	T
Austria	0.346	T
Italy	0.344	T
Spain	0.341	T
Netherlands	0.332	T
Germany	0.328	T
Finland	0.320	E
Belgium	0.314	T
Denmark	0.284	E
Ireland	0.276	L
UK	0.261	L
New Zealand	0.254	L
Portugal	0.215	T
US	0.209	L

Economic Indicators

Topics relating to economics form the second major aspect of sustainability. Although there are many economic topics that are relevant to a discussion of nation-level sustainability, information relating to the level of equality and productivity of a nation's economy are particularly useful. They allude to both the social structure and productivity of a country. Additionally, to accurately assess the level of sustainability in

⁷⁰⁷ Scale item, for further description see Chapter 2.

an economy it is necessary to assess economic performance relative to individuals, to various sectors of the economy, and to the nation as a whole.

Traditional Economic Indicators

Economic indicators such as comparative price parities⁷⁰⁸, capital stock⁷⁰⁹, gross national savings, and industrial production, amongst others are mainstays of economic analysis. When these indicators are combined into a single index (Table 5.35) the resulting scale reveals some interesting patterns amongst industrialized nations. In particular, Scandinavian countries tend to fair the best with all of them scoring in the top half of the index; in contrast liberal and traditionalist countries are evenly distributed in the lower half of the scale.

In addition to this general index there are also specific economic indicators, such as imports, which note much about a nation's economy that is relevant to a discussion of time use and sustainability.

⁷⁰⁸ Generally, defined at the comparative cost of buying basic goods in two separate markets.

⁷⁰⁹ The amount of capital funds available for investment expressed as a percent of GDP.

Traditional Economic Indicators

Scale items:

Average potential GDP

Capital stock, per capita

Real GDP Growth 1980-2004

Overall Annual productivity, GDP per capita⁷¹⁰

Gross national savings

Business sector investment per capita

Retail sales

Aggregated demand

Table 5.35, Traditional Economic Indicators

Country	Score	Category
Iceland	0.829608	E
Ireland	0.827451	L
Norway	0.636937	E
Spain	0.624712	T
Canada	0.616287	L
Denmark	0.604726	E
Sweden	0.602348	E
Australia	0.587292	L
New Zealand		L
Finland	0.586662	
Finland	0.582477	E
US	0.573151	L
Belgium	0.558096	T
Austria	0.536866	T
UK	0.534876	L
France	0.511091	T
Italy	0.448778	T
Netherlands	0.434627	T
Germany	0.432830	T
Japan	0.419253	T
Switzerland	0.411207	T
Portugal	0.406174	T

Imports/exports

⁷¹⁰ USD, PPP adjusted.

The amount a nation imports relative to items it exports can help us infer a number of things about the nature of a nation's economy. Relative to a discussion of sustainability, a high ratio of imports to exports suggests that an economy is not self-sufficient since it is dependent upon outside support. In certain instances this ratio appears to be explained by circumstances that are inherent to the structure of a nation's economy such as size and lack of economic diversity. For instance, as the chart below notes Iceland, which is a relatively small country of three hundred thousand people, imports far more merchandise than it exports. However, other relatively small countries such as Norway or Sweden do not appear to have this problem. Additionally, the United States remains consistent with its exceptionalist ways since it possesses the highest ratio of imports to exports. What is interesting about the United States is, regardless of its status as a large industrialized nation, it displays import/export characteristics in line with smaller and much less developed countries (see Table 5.36). Regarding a discussion of time use, let alone economic sustainability, what test data ultimately suggest is that countries which cannot reasonably be typified as having small peripheral economies are most likely under-utilizing their economic infrastructure and, in doing so they are marginalizing large segments of the population through structural unemployment. Additionally, such underutilization can be seen as further hindering equitable time use patterns since it leads to structural unemployment which then in turn leads to a number of inequities relative to time use. Oddly enough, one of best forms of evidence for this is found in the Aguiar and Hurst (2002) survey which found that less educated individuals, typically those that have worked in exported industries such as manufacturing, were the most likely to have more "free time"-that is, being unemployed. In contrast, for other

groups of more educated people they are working longer hours than they did in the 1960's. One could infer from this that people with jobs are motivated to work longer hours and pursue more training since they may fear being laid off due to either lack of skill or the discontinuation of their employment.

Table 5.36, Imports and Exports⁷¹¹

Country	Exports	Imports	Country	Imports/Exports
Australia	123,269	139,252	US	1.84866
Austria	140,397	140,258	Iceland	1.73945
Belgium	369,166	353,720	Spain	1.54023
Canada	389,538	357,652	Portugal	1.53771
Denmark	92,752	86,273	UK	1.38166
Finland	77,032	68,873	New Zealand	1.17841
France	490,368	534,894	Australia	1.12966
Germany	1,111,969.0	908,630	France	1.09080
Iceland	3,458	6,015	Italy	1.06531
Ireland	111,066	72,806	Austria	0.99901
Italy	410,572	437,386	Switzerland	0.95875
Japan	649,931	579,574	Belgium	0.95816
New Zealand	22,432	26,434	Denmark	0.93015
Norway	121,505	64,120	Canada	0.91814
Portugal	43,323	66,618	Finland	0.89408
Spain	205,455	316,448	Japan	0.89175
Sweden	147,377	126,738	Sweden	0.85996
Switzerland	147,457	141,374	Germany	0.81714
UK	448,291	619,385	Ireland	0.65552
US	1,038,278	1,919,427.0	Norway	0.52772

Along similar lines, we can infer that the United States is engaged in the under utilization of its industrial infrastructure when the ratio of the percentage gross domestic product from industry and services is calculated. As the data displayed in table 5.37

⁷¹¹ OECD (2004). Retrieved: July, 15, 2007. Website: <http://stats.oecd.org/index.aspx>

indicates the amount of economic activity derived from industry relative to services is the lowest in the United States.

Table 5.37, Ratio of industrial activity to services⁷¹²

Country	Ratio	Category
US	0.34	L
Denmark	0.36	E
France	0.37	T
Switzerland	0.38	T
Australia	0.39	L
New Zealand	0.39	L
Netherlands	0.40	T
Belgium	0.41	T
UK	0.44	L
Iceland	0.44	E
Sweden	0.44	E
Italy	0.45	T
Spain	0.46	T
Portugal	0.46	T
Canada	0.47	L
Germany	0.48	T
Austria	0.49	T
Japan	0.50	T
Finland	0.59	E
Norway	0.59	E
Ireland	0.70	L

Non-Traditional Economic Indicators

Although traditional economic indicators note many fundamental aspects of a nation's economy, non-traditional indicators such as energy consumption per GDP dollar reflect the efficiency of economic activity relative to standards not traditionally explored. Also, by using such indicators it is possible to contextualize the performance of an economy relative to environmental and social standards. The idea of assessing economic

⁷¹² OECD (2004). Retrieved: July, 15, 2007. Website: <http://stats.oecd.org/index.aspx>

performance relative to environmental standards is highly relevant to a discussion of sustainability since it is commonly observed⁷¹³ that traditional economic indicators often neglect the environmental and social impact of such activities. Thus, an index that assesses the environmental cost of economic progress is useful to any systematic discussion of sustainability.

Non-Traditional Economic Indicators

Coal consumption per GDP\$

Commercial Energy use (per GDP\$)

R&D as percentage of GDP

Macro economic environment index⁷¹⁴

Carbon efficiency kg carbon per GDP \$

Electricity Generation, per capita

Industrial Production, per capita

⁷¹³ Barbier, E., (1987). The concept of sustainable economic development. *Environmental Conservation*. 14(2), 101-110.

⁷¹⁴ The macroeconomic environment index indicates the quality of the macroeconomic environment of a country. World Economic Forum (2005). *Global Competitiveness Report 2004-2005*.

Table 5.38, Non-Traditional Economic Indicators⁷¹⁵

Country	Score	Category
Finland	0.72498	E
Sweden	0.71634	E
Australia	0.68345	L
Japan	0.68169	T
Germany	0.67488	T
Switzerland	0.67237	T
Ireland	0.66072	L
Denmark	0.65442	E
UK	0.62549	T
Austria	0.60193	T
France	0.58398	T
Italy	0.57571	T
Canada	0.57508	L
New Zealand	0.57479	L
Portugal	0.56418	T
Norway	0.55061	E
Spain	0.54108	T
Belgium	0.51732	T
Netherlands	0.50000	T
US	0.46796	L
Iceland	0.34366	E

Agriculture

Agriculture represents an activity that is both a fundamental aspect of most economies and also provides a necessary product. Thus, when agriculture is assessed in terms of its productivity, efficiency and environmental impact it can contribute to both discussions of sustainable economics and sustainability as a whole. Additionally, it is

⁷¹⁵ For scale see Chapter 3.

possible to make the case that agriculture is a necessary part of a sustainable economy in a fashion that is similar to the prior discussion of industrial infrastructure, since both can be seen as providing necessary goods to promote the self-sufficiency of an economy. Also, the status of agriculture reflects to many aspects of a nation's environment such as levels of pollution, and patterns of land utilization.

To achieve some understanding of how agriculture fits into the bigger picture relative to sustainability, agricultural production, energy use, pesticide use and land use/availability are all considered relevant indicators. As the data displayed in the next set of tables indicate, below note there is an interesting dynamic present amongst these variables. Specifically, rural countries with more agricultural land per capita tend to be less energy-intensive and use fewer pesticides and herbicides than more urban countries with lower per capita amounts of land. This would suggest that rural countries tend to be inherently more sustainable since they are able to produce agricultural products with fewer chemical inputs than densely populated countries. However, at the same time it suggests that countries can produce more food if they use chemicals and energy-intensive methods of farming. Ultimately, either approach has both its advantages and disadvantages. Although relative to a greater discussion of sustainability, this finding suggests that many urban countries are overpopulated relative to the ability to produce food without energy-intensive technological intervention.

Table 5.39 notes the average status of agriculture and various agriculture-related topics. Generally speaking, we can conclude that the variables used have somewhat of an

averaging effect on one another in that land availability tends to diminish the need for energy and chemicals whereas chemical use will lead to similar levels of productivity in reduced land area.

Table 5.39 Agricultural production Per capita⁷¹⁶

Country	Score	Population Density ⁷¹⁷	Category
Spain	1.00	80.23	T
Australia	0.88	1.05	L
Iceland	0.83	2.79	E
New Zealand	0.82	14.56	L
US	0.81	29.99	L
Canada	0.80	3.15	L
Germany	0.80	231.03	T
Austria	0.78	234.45	L
Ireland	0.76	55.46	L
Denmark	0.75	124.72	E
Italy	0.75	192.65	T
Belgium	0.74	336.36	T
Finland	0.74	15.38	E
Sweden	0.74	19.82	E
France	0.73	107.85	T
Portugal	0.73	11.27	T
Switzerland	0.71	176.62	T
Japan	0.68	337.21	T
Norway	0.67	14.01	E
Netherlands	0.66	387.79	T
UK	0.63	247.29	L

⁷¹⁶ Defined as non seed, non-feed, production, OECD (2004). Retrieved: July, 15, 2007. Website: <http://stats.oecd.org/index.aspx>, Expressed originally in KG per capita, however the noted figures are decimal representation of highest producing country.

⁷¹⁷ Density is express as people per square kilometer.

Table 5.40 Energy use in agriculture per capita⁷¹⁸

Country	Score	Density	Category
UK	1.00000	247.29	L
Germany	0.96646	231.03	T
Switzerland	0.96267	176.62	T
Sweden	0.94883	19.82	E
Japan	0.94681	337.21	T
France	0.94621	107.85	T
US	0.94457	29.99	L
Italy	0.94041	192.65	T
Spain	0.93908	80.23	T
Belgium	0.93002	336.36	T
Ireland	0.92807	55.46	L
Portugal	0.92546	11.27	T
Australia	0.91514	1.05	L
Austria	0.91433	234.45	T
New Zealand	0.91175	14.56	L
Canada	0.87465	3.15	L
Finland	0.83125	15.38	E
Norway	0.82052	14.01	E
Denmark	0.81259	124.72	E
Netherlands	0.73378	387.79	T
Iceland	0.00048	2.79	E

⁷¹⁸ OECD (2004). Retrieved: July, 15, 2007. Website: <http://stats.oecd.org/index.aspx>
Expressed as decimal of highest consuming country, when considered in the greater index it is a negative scale item .

Table 5.41 Cropland ⁷¹⁹

Country	Score	Density	Category
Australia	1	1.05	L
Canada	0.508	3.15	L
US	0.239	29.99	L
Finland	0.193	15.38	E
Iceland	0.174	2.79	E
Spain	0.172	80.23	T
Denmark	0.165	124.72	E
France	0.121	107.85	T
Sweden	0.117	19.82	E
Ireland	0.108	55.46	L
Portugal	0.093	11.27	T
Norway	0.076	14.01	E
Austria	0.070	234.45	T
Italy	0.065	192.65	T
Germany	0.057	231.03	T
New Zealand			L
UK	0.037	247.29	L
Belgium	0.032	336.36	T
Netherlands	0.025	387.79	T
Switzerland	0.023	176.62	T
Japan	0.015	337.21	T

⁷¹⁹ OECD (2004). Retrieved: July, 15, 2007. Website: <http://stats.oecd.org/index.aspx>
Expressed as percent highest per capita amount, original units in hectares.

Table 5.42 Grassland⁷²⁰

Country	Score	Density	Category
Australia	1.00000	1.05	L
Iceland	0.29760	2.79	E
New Zealand	0.17009	14.56	L
Ireland	0.04141	55.46	L
US	0.03918	29.99	L
Canada	0.03107	3.15	L
Spain	0.01365	80.23	T
Austria	0.01138	234.45	T
France	0.00964	107.85	T
UK	0.00883	247.29	L
Switzerland	0.00720	176.62	T
Portugal	0.00647	11.27	T
Denmark	0.00322	124.72	E
Germany	0.00294	231.03	T
Italy	0.00285	192.65	T
Netherlands	0.00271	387.79	T
Belgium	0.00252	336.36	T
Sweden	0.00242	19.82	E
Norway	0.00171	14.01	E
Finland	0.00106	15.38	E
Japan	0.00016	337.21	T

⁷²⁰ OECD (2001). Retrieved: July, 15, 2007. Website: <http://stats.oecd.org/index.aspx>
Expressed as percent highest per capita amount, original units in hectares.

Table 5.43 Total Pesticide Use⁷²¹

Country	Score	Density	Category
Iceland	1.00000	2.79	E
Norway	0.89568	14.01	E
Sweden	0.88919	19.82	E
Switzerland	0.87902	176.62	T
Finland	0.81984	15.38	E
Germany	0.79305	231.03	T
Austria	0.77755	234.45	T
Netherlands	0.71183	387.79	T
Japan	0.70313	337.21	T
Denmark	0.69151	124.72	E
UK	0.68513	247.29	L
Ireland	0.67240	55.46	L
New Zealand			L
Zealand	0.50570	14.56	
Belgium	0.46278	336.36	T
Spain	0.41939	80.23	T
US	0.35860	29.99	L
Canada	0.27011	3.15	L
Italy	0.23984	192.65	T
France	0.19871	107.85	T
Portugal	0.13679	11.27	T

⁷²¹ OECD (2004). Retrieved: July, 7, 2007., Website: <http://stats.oecd.org/index.aspx>. Expressed as percent highest amount, negative scale item when considered in greater scale. Originally expressed as metric tons per capita.

Agriculture⁷²²

Scale items:

Agricultural production

Energy use in agriculture

Farmers

Cropland

Total pesticide use

Table 5.44, Agriculture⁷²³

Country	Score	Density	Category
Australia	0.75891	1.05	L
Sweden	0.54050	19.82	E
Germany	0.52453	231.03	T
Finland	0.51826	15.38	E
Switzerland	0.51710	176.62	T
Austria	0.51207	234.45	T
Spain	0.50847	80.23	T
Ireland	0.50212	55.46	L
Canada	0.49747	3.15	L
Norway	0.49347	14.01	E
New Zealand	0.49223	14.56	L
Denmark	0.48633	124.72	E
US	0.47997	29.99	L
Japan	0.46986	337.21	T
UK	0.46982	247.29	L
Iceland	0.45898	2.79	E
Belgium	0.43431	336.36	T
Netherlands	0.42818	387.79	T
France	0.40264	107.85	T
Italy	0.39970	192.65	T
Portugal	0.37977	11.27	T

Individual Economic Indicators

Individual economic indicators reflect to the general economic well being and standard of living of individuals. Also, these indicators can tell us much about the

⁷²² All agriculture figures as adjusted per capita.

⁷²³ See Chapter 3 for scale.

structure of society along with various specific aspects of the lives of individuals' and families. Typically, an analysis of standardized absolute values⁷²⁴ reveals a trend that is generally consistent with other observations –namely, that egalitarian countries tend to fair the best and liberal ones the worst. Also, various patterns observed within the scale items and additional individual economic indicators depict to patterns that are relevant to a discussion of time use and sustainability.

Income inequality is one of the more prominent and most frequently commented upon aspects of economic sustainability, both relative to individuals and society as a whole. As a wide body of research notes, societies that exhibit high levels of inequality in incomes or wealth tend to exhibit various adverse individual and social patterns ranging from physical and mental health problems to limited social mobility⁷²⁵.

Although there is some debate about the merits of using the Gini coefficient as a measure of income inequality, it is the most widely accepted measure of inequality⁷²⁶. A number

⁷²⁴ The index use converted all relative scales to absolute scales to correct for any item bias since there was a significant amount of missing data.

⁷²⁵ A few articles on this topic:

Wilkinson R., Bezruchka, S., (2002). Income inequality and population health. *British Journal of Medicine*, 324(7343), 978.

Hemingway, H., Nicholson, A., Stafford, M., Roberts, R., Marmot, M., (1997). The impact of socioeconomic status on health functioning as assessed by the SF-36 questionnaire: the Whitehall II Study. *American Journal of Public Health*, 87(9), 1484-1490.

Dodge, K. A., Pettit, G. S., Bates, J. E., (1994). Socialization Mediators of the Relation between Socioeconomic Status and Child Conduct Problems, *Child Development*, 65(2) *Children and Poverty*, 649-66.

McLeod, J. D., Kessler, R. C., (1990). Socioeconomic Status Differences in Vulnerability to Undesirable Life Events. *Journal of Health and Social Behavior*, 31(2), 162-172.

⁷²⁶ Atkinson, A., (1970). On the Measurement of Inequality. *Journal of Economic Theory*, 2(1), 244-263.

of other specific relationships can be inferred from this general relationship. High levels of inequality can be seen as having a negative impact on both sustainability and time use.

Table 5.45, Relative income inequality⁷²⁷

Country	Score ⁷²⁸	Category
Sweden	1.00	E
Denmark	0.95	E
Iceland	0.90	E
Finland	0.86	E
Norway	0.86	E
Austria	0.85	T
Switzerland	0.81	T
Belgium	0.77	T
France	0.77	T
Germany	0.77	T
Netherlands	0.64	T
Ireland	0.59	L
Spain	0.59	T
Canada	0.58	L
Italy	0.54	T
UK	0.50	L
Australia	0.45	L
New Zealand	0.40	
Portugal	0.31	T
US	0.00	L

In the instance of social and economic issues, inequality creates situations in which disadvantaged groups are effectively marginalized from having even modest opportunities to improve their standard of living⁷²⁹. An example of this would be higher education in the United States which is based upon a fee for use system that places lower income students at a severe disadvantage. The example of higher education also

⁷²⁷ United Nations (2006). *Human Development Report 2006*. Retrieved: February, 1, 2008. Website: <http://hdr.undp.org/en/media/HDR06-complete.pdf>.

⁷²⁸ Relative score, 1 denotes most equal society while zero denotes least, decimal in between represent relative position.

⁷²⁹ Solon, G., (1992). Intergeneration Income Mobility in the United States. *American Economic Review*, 83(3), 398-408.

demonstrates the self-complicating nature of inequality. For instance, a low income person who does not go to college limits his or her earning potential⁷³⁰. However, if he or she does go to college the debt incurred will then result in less discretionary income and will require longer periods of work to achieve the same position as someone from an advantaged group.

Health care represents a similar situation. Someone who is seriously ill cannot work; however, someone who seeks medical attention incurs a bill that subsequently burdens them in other ways. In either instance disadvantaged groups cannot afford services that may improve their position and even if such groups find a method of financing such services they are either burdened with debt or must compromise some other aspect of their lives. In this way, they often enter a cycle of poverty in which the lack of opportunity they experience effectively ensures that their position will continue in one form or another unless some system to provide health care for the needy is present.⁷³¹

Aside from issues of opportunity there is also the effect of differential economics on disadvantaged groups. As various studies have shown, when inequality is high the group with the most resources tends to set standards regarding the prices of certain goods such as housing and other basic necessities⁷³². Thus, the poor and even middle income families are left to participate in a market in which the price of goods is dictated by the

⁷³⁰ Bosquet, M., (2008). *How the University Works: Higher Education and the Low-Wage Nation*. NYU Press.

⁷³¹ Payne, R., (2005). *A Framework for Understanding Poverty*. Aha! Process, Inc.

⁷³² Smith, N., (1996). *The New Urban Frontier: Gentrification and the Revanchist City*. Routledge.

upper levels of society. In either the instance of opportunity or equity it is reasonable to make the case that high levels of inequality contribute to low levels of time equity for these groups. In both instances we are confronted with a situation in which those at the lower end of the economic spectrum must work longer to be able to afford the same services that more advantaged groups have readily available to them. Additionally, these long hours result in a higher need for certain services such as childcare, which in turn require more resources.

Long hours also contribute to stress and other health-related problems which then result in lower productivity and higher health care costs. In addition, by not providing basic social services or subsidizing the cost of living for these groups it effectively ensures that members of these groups will be forced to use all of their income to meet their basic needs while having little income left over to advance to a higher standard of living. Finally, various aspects of poverty in the United States have taken this dynamic to an even higher level. As many observers have noted⁷³³, an entire industry has developed around providing high interest or high premium services to low income individuals in the U.S. Specifically, this poverty industry is based upon the idea that since the poor do not have the economic resources buy goods and services outright it is possible to sell them goods through financing at a very high interest rate. Thus, things such as payday loans, rental furniture, and low income automobile financing represents the only viable opportunities for the poor to obtain certain goods. However, through providing these

⁷³³ Michaels, H., (1993). *Merchants of Misery*. Common Courage Press.
See also: Epstien, K., (May, 21, 2007). The Poverty Industry. *Business Week*, Retrieved: June, 16, 2007. Website:
http://www.businessweek.com/magazine/content/07_21/b4035001.htm?chan=search

services, these ventures effectively insure that low income people will have little opportunity to save money and hence break the cycle of poverty. Related research shows that many firms charge higher prices in poor neighborhoods, partly because poorer people are less mobile and so less able to engage in comparison shopping⁷³⁴.

In addition to issues of income inequality and poverty, high levels of inequality raise questions relating to the systematic efficiency of society. Specifically, a high level of inequality raises the question as to whether or not resources are being used in the most productive and efficient manner. Thus, we are confronted with questions like whether it is more useful for one wealthy person to own seven houses and have seven low income families with no place to live, or whether one wealthy student's education at an Ivy League university is worth the education of six poor people at a state university. Although there definitely is a normative element to any discussion of equality, there are also strong empirical elements to such discussions. As the data developed here indicate, it appears likely that societies with a higher level of equality along with proactive governmental policies are likely to fare better in any number of ways, such as public health and the coproduction of public goods than those who do not.

Other individual economic indicators

In addition to items that are used in a scale of individual economic indicators various other statistics reflect to the nature of individual economic activity in the countries studied. For example, the average number of incomes per household pertains

⁷³⁴ Schiller, B., (2003). *The Economics of Poverty and Discrimination*. Prentice-Hall.

to the pervasiveness of dual or more income households. As prior discussions have noted, there are various models of formal and informal labor in families. The literature on the number of workers in a family presents two prominent models. The first group emphasizes the bread winner model, which traditionally has meant that the man of the house worked full time while the women stayed home, raised children and performed domestic tasks. The second model consists of the dual income or egalitarian model. In this model both adults in a nuclear family work. However, the number of hours worked tends to be limited by the state imposed labor policy, and the number of social services such as child care, and subsidies provided tend to be high.

As the data reported below indicate these models only partially explain the patterns observed. Although traditionalist states such as France and Belgium and egalitarian states such as Denmark appear to adhere to their respective models, a number of countries do not. The countries that do not adhere to such models tend to either exhibit higher or lower levels of employment than expected. For instance, in Finland there are only .94 workers per household despite its extensive welfare state and strong egalitarian leanings. In this instance it most likely is the case that specific government policies facilitate parents staying home to raise their children⁷³⁵. However, in other instances such as Austria and the United States the number of earners per household is particularly high. What this finding appears to suggest is that liberal countries have endorsed a dual worker model without developing the necessary social policy to maintain time equity and

⁷³⁵ Goodin, R, Rice, J. M., Parpo A., Ericksson, L., (2008). *Discretionary Time*. Cambridge University Press.

See Also: Frossen, K., Jaakola, A., Ritalkaallo, (2008). *Family Policies in the Context of Family Change*. Springer.

other aspects of social well being. As a number of commentators have noted, the United States has traditionally endorsed a single breadwinner model⁷³⁶. However, recent developments in American society have facilitated the mass entry of women in to the job market in virtually all areas of the employment. Thus, such a model no longer applies; however much of the social policy in the U.S. is still geared towards this largely displaced model.

Also, if we consider Purchasing Power Parity per capita (Table 5.48) incomes it is interesting to note that individual incomes seem to be relatively unrelated to other variables such as the number of workers per household, and more broadly other indicators of individual social and economic welfare.

⁷³⁶Sainsbury, D., (1999). *Gender and Welfare State Regimes*. Oxford University Press.

Table 5.46 PPP Adjusted Per Capita Income⁷³⁷

Country	USD	Category
Norway	\$58,500	E
US	\$46,970	L
Switzerland	\$46,460	T
Netherlands	\$41,670	T
Sweden	\$38,180	E
Austria	\$37,680	T
Ireland	\$37,350	L
Denmark	\$37,280	E
Canada	\$36,220	L
UK	\$36,130	L
Germany	\$35,940	T
Finland	\$35,660	E
Japan	\$35,220	T
Belgium	\$34,740	T
France	\$34,400	T
Australia	\$34,040	L
Italy	\$32,250	T
Spain	\$31,130	T
Iceland	\$25,220	E
New Zealand	\$25,090	L
Portugal	\$22,080	T

⁷³⁷ World Bank (2008). Retrieved: August, 14, 2009. Website: <http://siteresources.worldbank.org/DATASTATISTICS/Resources/GNIPC.pdf>

Table 5.47, Average number of earners per household⁷³⁸

Country	Earners	Category
Spain	1.80	T
Australia	1.60	L
US	1.30	L
Denmark	1.30	E
Switzerland	1.22	T
Japan	1.19	T
UK	1.10	L
Netherlands	1.09	T
Norway	1.00	E
France	0.95	T
Belgium	0.95	T
Finland	0.94	E

One method of gauging the economic standing of a household is through an analysis of expenditures, and income from both wages and government transfers. As the data displayed below indicates, the ratio of expenses to wages tends to be relatively consistent. With the exception of France, the ratio of expenses to income tends to be around .8 or .9. However, when the amount of transfer income is factored into this ratio, the dynamic changes significantly. As data displayed in table 5.48 reveals with the exception of the United States most residents of industrialized countries receive a significant amount of their income via transfers from their government. When such transfers are considered the average ratio of expenditures to income tends to be around .4 or .5, however, in the United States this figure is .7. What this most likely implies for families in these countries is that the higher the ratio of expenditures to income the less money it is possible to save. In the instance of the United States, its relatively high expenditure/income ratio is particularly troublesome since it is generally accepted that Americans should have to privately fund their health care, higher education, and retirement.

⁷³⁸ OECD (2004). Retrieved: August 17, 2007. Website: <http://stats.oecd.org/index.aspx>

Table 5.48, Ratio of average monthly expenditures to income

Country	Ratio	Category
France	1.11287	T
Denmark	0.92404	E
US	0.92341	L
Sweden	0.90536	E
Iceland	0.88479	E
Switzerland	0.88275	T
Belgium	0.87417	T
Finland	0.86172	E
Netherlands	0.62908	T

Table 5.49, Paid Income, Transfer income as percentages of total income⁷³⁹

Country	Paid Income	Country	Transfer Income
US	80.6	France	39.8
Australia	73.0	Sweden	32.8
Netherlands	70.7	Belgium	27.6
UK	65.0	Spain	26.8
Denmark	64.5	Netherlands	25.3
Norway	64.0	Germany	24.6
Switzerland	62.8	Denmark	24.3
Sweden	58.1	Switzerland	23.6
Finland	57.8	Finland	23.0
Spain	56.7	Norway	21.1
France	53.0	UK	21.0
Belgium	45.9	Australia	15.3
Germany	42.1	US	13.0

⁷³⁹ OECD (2004). Retrieved: July, 15, 2007. Website: <http://stats.oecd.org/index.aspx>

Table 5.50, Ratio of expenditures to the sum of paid and transfer

Country	Ratio	Category
Belgium	0.40124373	T
Denmark	0.59600599	E
Finland	0.49807663	E
France	0.59059762	T
Netherlands	0.44526546	T
Sweden	0.52637636	E
Switzerland	0.55516323	T
US	0.74426464	L

Consumer Goods, Real Estate and Rent

Another method of assessing the cost of living in the countries in question is to look at the cost of goods and services along with dynamics related to home ownership and renting. The most prominent method of doing that is to look at the Purchasing Power Parity of various countries. As the data set forth in the table below suggests, goods tend to be more expensive in countries with more extensive welfare states. However, in the instance of the liberal countries the opposite observation is true. Additionally, the price of real estate and rent appears to vary based upon criteria outside of the typical cost of goods as judged by the purchasing power parity (Tables 5.51 and 5.52). Most notable in this regard is the cost of housing in extensive welfare states and certain other countries such as Japan and Switzerland. Despite their high cost of living housing is relatively affordable there. This would suggest that government policy, along with possibly certain

cultural norms, has contained the price of real estate or renting to affordable levels despite the high population density in the countries in question.⁷⁴⁰

This, observation is particularly relevant to a discussion of sustainability when we consider the massive fluctuations in the value of real estate in countries such as the United States since 2004. Arguably such fluctuations have negative social and economic consequences, ranging from issues of housing affordability, to gentrification, and to limiting discretionary consumer spending⁷⁴¹.

To fully comprehend the impact of these economic data it is useful to view them in the context of various social structures and government policies. In particular, we must pay attention to the true impact of the cost of goods in the countries in question. Although goods are more expensive, mostly due to sales taxes, in extensive welfare states it is necessary to weigh that cost relative to the services that are funded via those taxes. As the prior discussion of income suggest transfer income plays a significant role in defining the actual income of individuals and families. Additionally, data relating to real estate must be judged in the context of the level of urbanization and population density of each country. Countries such as the United States, Canada and Australia are mostly rural and hence are more disposed to single family dwellings than are more urban countries such as Japan or Germany. Finally, we must also take into consideration the cultural norms relating to renting and home ownership that exist in each country.

⁷⁴⁰ Doling, J., (1997). *Comparative Housing Policy: Government and Housing in Advanced Industrialized Countries*. Palgrave Macmillan.

⁷⁴¹ For further discussion see Baker, D., Rosnick, D., (2008). *The Impact of the Housing Crisis on Family Wealth*. Center for Economic Policy and Research.

For instance, American culture places emphasis on home ownership while other countries such as Germany tends to prefer a renter-based model. Despite these cultural norms relative to things such as home ownership, data set forth in the tables below document the fact that although some variation can be explained by these factors, there are likely other economic and social conditions contributing to a given dynamic. For instance, rural countries such as the United States tend to have more affordable housing when judged by house price to income or rent. However, other countries such as Australia or Canada exhibit higher ratios while being of a similar density. Additionally, as mentioned above, it is also useful to consider the fact that what defines the typical dwelling in each country varies substantially.

Table 5.51, Purchasing Power Parities⁷⁴²

Country	PPP
Switzerland	135
Japan	127
Norway	123
Denmark	117
Iceland	112
Sweden	110
Netherlands	110
US	109
UK	107
Ireland	105
Finland	101
Germany	98
Austria	94
France	94
Belgium	93
Italy	83
Canada	83
Australia	80
Spain	79
New Zealand	73
Portugal	71

⁷⁴² This figure refers to the relative cost of consumer goods as judged relative to the purchasing power of the 2000 USD. This figure alludes to the general cost of living in these countries, OECD (2004). Retrieved: July, 15, 2007. Website: <http://stats.oecd.org/index.aspx>

Table 5.52, House price to rent ratio⁷⁴³

Country	Ratio
Spain	200.2
Canada	189.2
Australia	176.2
UK	172.0
Denmark	169.8
Norway	168.8
New Zealand	165.7
Sweden	164.5
Netherlands	161.4
France	160.4
Finland	153.2
Ireland	144.8
US	133.9
Italy	126.9
Switzerland	84.6
Japan	69.1

Table 5.53, Income/house price ratio⁷⁴⁴

Country	Ratio
Netherlands	169.0
New Zealand	159.4
Spain	157.7
Denmark	153.4
UK	150.1
Ireland	147.2
Australia	146.9
France	143.0
Norway	135.6
Canada	132.3
Sweden	123.7
Italy	117.4
US	114.2
Finland	107.7
Switzerland	77.3
Japan	66.9

⁷⁴³ OECD (2004). Retrieved: July, 15, 2007. Website: <http://stats.oecd.org/index.aspx>

⁷⁴⁴ OECD (2004). Retrieved: July, 15, 2007. Website: <http://stats.oecd.org/index.aspx>

Individual Economic Indicators

Average per capita income

Financial satisfaction⁷⁴⁵

Home ownership, percent residences

Pension investment

Household savings rate, percent of disposable income

Hourly wages

Income distribution Gini Coefficient

Table 5.54, Individual Economic Indicators⁷⁴⁶

Country	Score	Category
Switzerland	0.881125039	T
Norway	0.743128365	E
Ireland	0.736115183	L
Netherlands	0.674456716	T
Austria	0.667199071	T
Japan	0.664748116	T
Iceland	0.661416836	E
Belgium	0.657633528	T
Finland	0.630448208	E
Sweden	0.627223028	E
UK	0.620144658	L
France	0.614623397	T
Australia	0.585335781	L
Denmark	0.580815250	E
Canada	0.577497321	L
Spain	0.572996536	T
Italy	0.569114387	T
Germany	0.566682337	T
US	0.542130420	L
Portugal	0.495412571	T
New Zealand	0.419351198	L

⁷⁴⁵ Mean of self-ratings on ten-point scale relating to issues of personal financial satisfaction, Surveys in 1990s, World Values Survey (2007). Retrieved: August, 16, 2007. Website: www.Worldvaluessurvey.org

⁷⁴⁶ See chapter 3 for scale.

Business Climate

The climate in which business operates represents the final element of economic sustainability. Although some would argue against the inclusion of a measure of the health of the business community in a discussion of sustainability, from the perspective of the author inclusion is necessary for two principal reasons. First, commerce can be seen as an essential aspect of any modern industrialized society. Second, it is useful to determine whether there is a positive or negative relationship between business climate and other indicators of sustainability. The latter is necessary since there has been much discussion about the alleged negative impact of sustainability-related policies on business.

On a conceptual level, the business climate can be seen as either hindering or facilitating economic activity. Traditionally, discussions of the business climate have focused on burdens of regulation and taxation⁷⁴⁷. Additionally, much of the common rhetoric relating to the business environment has suggested that the liberal countries tend to provide the most conducive environment for business. Considering the parameters and questions, it is useful to explore this situation through creating an index that combines most relevant factors associated with the concept. A measure of the business climate combines individual measures of regulation impact, taxes and indices of economic freedom. Relative to these measures, the data summarized in table 5.57 reveal that, contrary to popular belief, the climate in which business occurs is mostly independent of the overall structure a nation's welfare state. For instance, the top five countries in the

⁷⁴⁷ Fisher, P., (2005). *Grading Places, What Do the Business Climate Rankings Really Tell Us?* Economic Policy Institute.

scale come from all types of countries –from liberal, traditionalist and egalitarian welfare states alike. These findings raise a number of questions relative to both economic sustainability and other policies. Most prominently are those that relate to the relationship between policy and the productivity of industry, along with how such production is then translated into the overall well being of the countries in question.

Business Climate

Index of economic freedom⁷⁴⁸

Rigidity of hours index⁷⁴⁹

Retail regulation⁷⁵⁰

Regulation Impact⁷⁵¹

⁷⁴⁸ Is an index that considers economic freedom from a variety of perspectives such as business, trade, regulation, taxation and investment. Heritage Foundation (2005). *Index of Economic Freedom*. Retrieved: July, 5, 2007. Website:

http://www.heritage.org/Index/pdf/Index09_Methodology.pdf

⁷⁴⁹ Rigidity of hours index: Scheduling of nonstandard work hours and annual paid leave.

⁷⁵⁰ Expressed as percentage of total cost. For instance, a good might cost \$1 without regulation and \$1.10 with thus the regulation impact is .1

⁷⁵¹ Same as retail regulation, except for all other sectors of the economy.

Table 5.55, Business Climate

Country	Score	Category
New Zealand	0.652609	L
Switzerland	0.652141	T
Italy	0.632044	T
Ireland	0.612619	L
Norway	0.612255	E
Canada	0.595217	L
US	0.591952	L
UK	0.578005	L
Austria	0.575601	T
Portugal	0.561831	T
Australia	0.559038	L
Japan	0.555491	T
France	0.546494	T
Iceland	0.543701	E
Belgium	0.526456	T
Sweden	0.525505	E
Finland	0.518249	E
Spain	0.499554	T
Germany	0.489384	T
Denmark	0.476177	T
Netherlands	0.400001	T

Infrastructure

Infrastructure possesses a unique position in a discussion of sustainability since it can be seen as having an impact on social and economic structures, along with environmental performance. Also, the proper infrastructure helps facilitate the development of social networks and communities. The scale used here to assess infrastructure primarily considers transportation infrastructure due to the lack of availability of other types of data. However, ideally it would be useful to consider the physical infrastructure investment, quality and efficiency of services and capital projects.

Thus, things such as municipal services, hard infrastructure such as buildings and sewer systems, and the physical conditions of homes would factor into the equation. Regardless of this deficiency, an analysis of the available data reveals a pattern that is relatively consistent with other indicators of sustainability.

In particular, it is interesting to note the extreme deviance of the United States relative to other countries in such data. Although some of this variation can be attributed to the predominantly rural character and large size of the United States, a significant portion of this find of exceptionalism can be attributed to a transportation infrastructure that is not efficient combined with community planning that does not greatly emphasize either conservation or mass transit. To highlight this point, if we consider Canada, Australia, Norway, and Sweden, -all of which are significantly more rural than the United States, -we find that overall population density is not the sole factor dictating the efficiency of infrastructure and transportation. Even in a country that is mostly rural, if the population is centered in urban centers with public transit and has less of a need to drive, the efficiency of the system is much higher than a country with a broadly dispersed or suburb dwelling population.

Infrastructure

Total energy consumption by mode of transport, per capita.

Freight by mode of transport, per capita

Road traffic, km per capita

Road fuel consumption, per capita

Table 5.56, Infrastructure⁷⁵²

Country	Score	Category
New Zealand	0.563262	L
Japan	0.559555	T
Portugal	0.555987	T
Italy	0.555172	T
Finland	0.548279	E
Spain	0.547988	T
Germany	0.541134	T
France	0.517977	T
Norway	0.515817	E
Australia	0.510333	L
Sweden	0.509632	E
Belgium	0.501775	T
UK	0.498133	L
Austria	0.481882	T
Netherlands	0.480952	T
Denmark	0.477470	E
Iceland	0.466926	E
Ireland	0.454325	L
Switzerland	0.453184	T
Canada	0.431891	L
US	0.265481	L

The population density of areas tell us much about the infrastructure of a country in terms of its level of rural, urban and uninhabited land. Specifically, the higher the urban land density the more likely a country is able to support a mass transit system along with being able to use land and organize communities efficiently. To obtain this statistic the population density is divided by a decimal representation of non-wilderness area. The resulting number reflects to the average population density of inhabited areas. Although this number does not capture to the balance between the rural and urban population, it does give a general idea of the level of sprawl in inhabited areas.

⁷⁵² See chapter 3 for scale items.

Table 5.57, Urban Density

Country	Density
Austria	614.51
Japan	490.19
Italy	354.85
Spain	341.19
UK	338.95
Germany	309.04
Greece	288.88
Switzerland	283.80
US	199.92
France	195.30
New Zealand	186.48
Finland	182.62
Norway	158.27
Denmark	138.88
Ireland	135.72
Canada	134.19
Sweden	116.41
Australia	96.22
Portugal	45.62
Iceland	8.16

Environment

Environmental sustainability comprises the last major aspect of sustainability. Measures of environmental sustainability can include measures of energy efficiency, pollution, natural resources and environmental impact. Traditionally, sustainability has dealt with environmental topics and thus there is a more extensive understanding of various aspects of environmental sustainability. Also, there exist a number of indices of environmental sustainability that can be considered.

Energy usage helps define many aspects of a country. On the one hand, energy resource consumption can demonstrate how efficient and environmentally conscious a society is on the other hand, it can depict its inefficiencies and symbolizes the scale of

adverse effects on the environment. Additionally, resource usage depicts various relevant aspects of individual, social and economic behaviors. As the data displayed in the table below illustrates, a few things about these countries appear to determine the amount of energy used there. In particular, the geographic latitude and the level of urbanization appear to be the major determinants of energy use. Countries that are more rural and colder consistently use more energy than those that are not. However, even with these constraints display certain countries such as the Scandinavian countries have structured themselves in a manner that partially mitigates these factors. For example, they tend to build and maintain smaller, more energy-efficient structures.

Resource Usage

- Coal consumption per capita
- Electricity per capita
- Natural gas consumption per capita
- Nuclear consumption per capita
- Oil consumption per capita
- Primary energy consumption total
- Primary energy consumption share of total
- Energy usage, per capita
- Wind energy usage, per capita

Table 5.58, Energy Consumption/Efficiency⁷⁵³

Country	Score	Category
Spain	0.79829	T
Denmark	0.70059	E
Switzerland	0.48310	T
Germany	0.46359	T
UK	0.45939	L
Austria	0.45618	T
Japan	0.45237	T
Italy	0.44529	T
Ireland	0.41954	L
New Zealand	0.39792	L
Portugal	0.38641	T
Finland	0.35291	E
Norway	0.33311	E
France	0.30231	T
Sweden	0.24213	E
Belgium	0.21390	T
Australia	0.21267	L
Canada	0.20919	L
US	0.20612	L

Land Use/Natural Resources

Although a country's amount of natural resources and geography are mostly the consequence of features outside of human control, how a country manages its land can be seen as being indicative of a country's level of environmental sustainability along with a number of other relevant dynamics such as it's ability to plan infrastructure. To gauge the nature of a country's land use relative to other factors, three variables were considered: agricultural land, forest levels and wilderness areas. These variables are used to gauge the land use aspect of natural resources since they are relatively ubiquitous in the sample studied and can be considered renewable resources. Other natural resources such as coal or iron ore were omitted from the analysis since they are non-renewable

⁷⁵³ A high score denotes a high level of efficiency or a low level of consumption.

resources and do not occur in all countries studied. In general, as the data displayed in the table below suggest, countries with lower population densities that are more recently settled tend to have the highest levels of wilderness and working agricultural land. Obviously, when these factors are dominant, the volume of wilderness and non-urban land is high. However, if individual variables are considered separately, and weighted relative to population and level of urbanization, other patterns of association become evident.

Natural Resources

Scale items:

Non-wilderness⁷⁵⁴, negative scale item

Crop land,

Pasture,

Forest,

⁷⁵⁴ Expressed as percent total land area.

Table 5.59, Land use/natural resources

Country	Score	Category
New Zealand	0.4519	L
Australia	0.4490	L
Finland	0.4400	E
Spain	0.4217	T
Sweden	0.4103	E
US	0.4061	L
Portugal	0.3861	T
Canada	0.3740	L
Austria	0.3616	T
Norway	0.3344	E
Ireland	0.3318	L
France	0.3313	T
Japan	0.2864	T
Italy	0.2836	T
UK	0.2700	L
Switzerland	0.2638	T
Germany	0.2606	T
Belgium	0.2276	T
Netherlands	0.2230	T
Iceland	0.2151	E
Denmark	0.2133	T

The first possible manipulation to use relative to land use data is to control for the amount of urbanized land since some countries, by virtue of their age, geographic constitution or social development, have significantly different levels of urbanization than other countries. If urbanization is not accounted for countries with lower population densities will automatically fare better than those with higher levels of urbanization. Relative to a discussion of sustainability, we can use this manipulation along with one that considers population as a way of judging how well societies deal with their open space and natural resources regardless of their population and amount of urbanization. When percentages relating to pasture, forest and crop land are summed and divided by the percent wilderness, a ratio that is produced that effectively notes the utilizing of a

country's non-urban land regardless of its proportion to the urban area. As table 5.60 notes, various extensively urbanized countries such as Japan and Germany have a high rate of land utilization despite being highly urbanized. One potential explanation for this pattern is that there is an intended application of policy geared towards self-sufficiency and maintaining viable natural resources industries.

Table 5.60, Productive Land Urban Land Adjusted

Country	Score
Denmark	7.3653
Germany	3.1290
UK	2.9935
Japan	2.6701
France	1.9598
Switzerland	1.7944
Italy	1.4817
Austria	1.3383
Ireland	1.2439
Spain	1.2052
Portugal	1.0507
Sweden	0.9780
New Zealand	0.9607
Finland	0.9217
US	0.9112
Australia	0.8156
Canada	0.5321
Norway	0.4674
Iceland	0.3065

If the total percent area of forest, pasture and crop land are multiplied by the population density, then we are able to compute the relative amount of open land in terms of population density. What a high score from this calculation reflects to is that countries with high population densities that can still manage some amount of open space or agricultural land will score highly. In contrast, a country with a low population density and extensive resources possess less of a challenge in terms of resource management and

will have a lower score. Finally, a country that is both urbanized and does not possess much in the way of open space or agricultural land will also possess a low score. Along lines similar to the prior calculation, highly industrialized countries that have protected and managed their natural resources through planning and protecting industries such as agriculture tend to score highest. Although there is still some variation unaccounted for in terms of barren or inarable lands, this index reflects the ability of countries to possess and manage productive land despite the pressures of land and population constraints.

Table 5.61, Land use, urban land and population adjusted

Country	Land
Japan	281.008
Netherlands	259.443
Belgium	229.672
UK	200.189
Austria	194.058
Germany	182.489
Italy	130.485
Switzerland	119.689
France	94.6455
Denmark	93.6765
Spain	73.9573
Ireland	40.7981
US	23.2287
Sweden	16.0844
Finland	12.9826
New Zealand	12.8971
Portugal	8.9158
Norway	5.9706
Canada	1.6348
Australia	0.8482
Iceland	0.5621

Finally, if the percent wilderness is divided by the population density we can infer both the relative amount of open space (i.e., wilderness per person) and also the level of urban density for a country.

Table 5.62, Wilderness Space Relative to Population Density

Country	Wilderness
Australia	0.940734
Canada	0.310389
Iceland	0.236343
Portugal	0.066828
Norway	0.065035
New Zealand	0.063317
Finland	0.059540
Sweden	0.041862
US	0.028342
Ireland	0.010664
Spain	0.009533
France	0.004151
Austria	0.002638
Italy	0.002373
Switzerland	0.002138
UK	0.001094
Germany	0.001093
Japan	0.000925
Denmark	0.000818

Pollution

Pollution represents one of the primary aspects of environmental sustainability. Also, it helps describe the ability of governments and economies to properly manage the byproducts of society. In a vein similar to resource consumption, pollution can be seen as having consequences for various social and economic conditions. As the data displayed in table 5.57 indicate the amount of pollution a country produces appears to be highly dependant upon its level of urbanization and its latitude. More urban and more southern countries tend to produce fewer emissions of green house gases since there is less demand for transportation modes that generate more pollution and for heating. However, despite these structural influences the effect of pollution mitigation is still

evident in certain instances such as Sweden, Portugal and Switzerland -all of which are either rural, cold or both.

Pollution⁷⁵⁵

Scale items:

- Municipal waste generation
- Green house gasses
- Total green house gases
- Volatile organic compounds
- Particulate emissions
- Nitrous oxide Emissions
- Sulfur dioxide Emissions
- Waste

Table 5.63, Pollution

Country	Score
Netherlands	0.8413
Portugal	0.8184
Japan	0.8021
Sweden	0.7893
Spain	0.7836
Switzerland	0.7709
Italy	0.7659
France	0.7567
Germany	0.7564
UK	0.7497
Austria	0.7492
Finland	0.7266
Ireland	0.7002
Belgium	0.6880
New Zealand	0.6750
Norway	0.6567
Denmark	0.6533
Iceland	0.5736
US	0.4125
Australia	0.4104
Canada	0.2910

Additionally, when we look at emissions of carbon dioxide mostly from the burning of fossil fuels, for specific activities such transportation, industry and housing,

⁷⁵⁵ All figures expressed per capita.

we find that countries exhibit a wide range of consumption patterns. Table 5.64 sets forth findings which summarize the rank comparison. It is interesting that there are a number of exceptions to the general rule that countries that are in higher latitudes and are more rural tend to consume more energy.

Table 5.64, CO2 Emissions Residential and Industrial Per Capita⁷⁵⁶

Country	Industry	Country	Residential
Australia	5.20826	Belgium	1.99533
Canada	2.89393	Ireland	1.72697
Iceland	2.71777	Switzerland	1.66644
Netherlands	2.50481	Germany	1.46733
Belgium	2.48125	UK	1.32698
Finland	2.36493	Canada	1.26791
US	2.20367	US	1.20350
Japan	2.10421	Netherlands	1.10587
Norway	1.59982	France	1.10185
Spain	1.59103	Italy	1.06384
Italy	1.44951	Australia	0.96818
Germany	1.43642	Denmark	0.66617
Ireland	1.32410	Japan	0.53172
Sweden	1.31877	Spain	0.51028
France	1.31435	Austria	0.46585
New Zealand	1.23128	Finland	0.40569
UK	1.05408	Portugal	0.22158
Denmark	0.94343	Sweden	0.16359
Portugal	0.91233	Norway	0.16086
		New Zealand	0.13709
Switzerland	0.89288	Zealand	0.13709
Austria	0.79591	Iceland	0.06969

⁷⁵⁶ OECD (2005). Retrieved: July 14, 2007. Website: <http://stats.oecd.org/index.aspx> In metric tons per capita.

Table 5.65, Co2 Emissions Transport and Structures Per Capita, Total CO2 emissions per capita⁷⁵⁷

Country	Transport	Country	Structures	Country	Total
Australia	9.78867	Netherlands	4.01677	Australia	17.2895
US	6.28320	Belgium	2.77242	US	10.1552
Canada	5.10059	Iceland	2.12544	Belgium	9.80231
New Zealand	3.56943	Australia	1.32449	Netherlands	9.77833
Ireland	3.27175	Denmark	0.9750	Canada	9.40345
Norway	3.04539	Sweden	0.9064	Iceland	7.28223
Spain	2.72974	Spain	0.8553	Ireland	7.03361
Sweden	2.56359	New Zealand	0.8123	Finland	5.87387
Belgium	2.55332	UK	0.7219	New Zealand	5.75019
Finland	2.54951	Ireland	0.7108	Spain	5.68638
Denmark	2.48046	Norway	0.6654	Norway	5.47157
Iceland	2.36934	Finland	0.5537	Switzerland	5.34768
Switzerland	2.28775	Switzerland	0.5006	UK	5.24617
France	2.26052	US	0.4649	Germany	5.16894
Netherlands	2.15089	France	0.4366	France	5.11331
UK	2.14319	Portugal	0.3892	Denmark	5.06512
Italy	2.05171	Italy	0.3803	Sweden	4.95238
Japan	1.95566	Germany	0.3431	Italy	4.94539
Germany	1.92209	Japan	0.3160	Japan	4.90767
Portugal	1.86320	Canada	0.1410	Portugal	3.38631
Austria	1.13920	Austria	0.0879	Austria	2.48893

Environmental Impact

Another method of assessing human's impact on their environment is through calculating the amount of land needed to support one person. The World Wide Fund for Nature's Ecological Foot Print scale is an example of such a measure. The Ecological Footprint is a measure of environmental impact that considers that amount of resources needed to support an average citizen of a given country. As table 5.66 notes, the United States by far has the highest impact in this regard. Additionally, industrialized, rural, liberal and northern countries appear to also have a similar high level of impact which

⁷⁵⁷ OECD (2005). Retrieved: May 26, 2007. Website: <http://stats.oecd.org/index.aspx> In metric tons per capita, structures refer to non residential buildings.

most likely can be attributed to either climate, and hence the need for heating, the need for greater transportation (rural countries), manufacturing (industrialized countries) countries or ideological variables such as consumerism (liberal countries). The exceptionally prominent position of the United States appears to be the product of a combination of all the afore-mentioned variables.

Table 5.66, Ecological Foot Print

Country	Footprint	Category
US	12.22	L
Denmark	9.88	E
New Zealand	9.54	L
Ireland	9.43	L
Australia	8.49	L
Finland	8.45	E
Canada	7.66	L
Sweden	7.53	E
France	7.27	T
Switzerland	6.63	T
Germany	6.31	T
UK	6.29	L
Norway	6.13	E
Iceland	6.02	E
Japan	5.94	T
Belgium	5.88	T
Italy	5.51	T
Spain	5.50	T
Austria	5.45	T
Portugal	4.99	T

It is also useful to explore some of the existing work that has been done on sustainability. In particular, the Environmental Performance Index (EPI) was developed through a joint venture by Yale and Columbia Universities.⁷⁵⁸ This measure aims to

⁷⁵⁸ Redefining Progress (1999). *"Gross production vs genuine progress". Excerpt from the Genuine Progress Indicator: Summary of Data and Methodology. Redefining*

assess a broad range of sustainability related indicators. The EPI has been one of the most widely acknowledged standards for assessing environmental sustainability on a national level. Although a consideration of the EPI contributes to an overall analysis of time use and sustainability, it also reflects to the limitations of conventional measures of sustainability since it fails to consider environmental performance's relationship to social and economic factors.

Table 5.67, Environmental Performance Index⁷⁵⁹

Country	Score	Category
Switzerland	95.5	T
Norway	93.1	E
Sweden	93.1	E
Austria	91.4	T
Finland	91.1	E
New Zealand	88.9	L
France	87.8	T
Iceland	87.6	E
Canada	86.6	L
Germany	86.3	T
UK	86.3	L
Portugal	85.8	T
Japan	84.5	T
Italy	84.2	T
Denmark	84.0	E
Spain	83.1	T
Ireland	82.7	L
US	81.0	L
Australia	79.8	L
Netherlands	78.7	T
Belgium	78.4	T

Progress. Retrieved: July 16, 2007. Website:

<http://www.rprogress.org/publications/index.htm>

⁷⁵⁹ A high score alludes to a more environmental status, that is less pollution and resources consumption along with more recycling and renewable energy usage.

An Overview of the Relationship of Sustainability, Time Use and Other Factors

Finally, and most prominently, is that when indicators of various aspects of sustainability are combined into a conceptually balanced index, the resulting scores are highly correlated to a similar index of time equity. Countries that tend to exhibit inequitable time use patterns also tend to be less sustainable, on average. The tables below summarize the relationship between time use and sustainability. It is apparent, both in the number of highly correlated variables found within and outside of the index and relative to the general directionality and significance of other variables, that this is a robust connection. Overall, these relationships confirm the general propositions of this work along with confirming various specific hypotheses about the relationship between various aspects of sustainability and time use.

Table 5.68 Sustainability

Rank	Country	Score	Category
1	Finland	0.561476	E
2	Sweden	0.547161	E
3	Spain	0.544540	T
4	Norway	0.541152	E
5	Denmark	0.528981	E
6	Netherlands	0.523816	T
7	Austria	0.521152	T
8	Switzerland	0.519381	T
9	Japan	0.517679	T
10	Germany	0.510990	T
11	Australia	0.507103	L
12	Italy	0.501041	T
13	France	0.498092	T
14	UK	0.497828	L
15	Ireland	0.491471	L
16	Belgium	0.491217	T
17	Iceland	0.489892	E
	New Zealand		L
18	Zealand	0.486823	
19	Portugal	0.479373	T
20	Canada	0.444976	L
21	US	0.391284	L

Table 5.69 Time Use⁷⁶⁰

Ranks	Country	Score	Category
1	Norway	0.669096	E
2	Netherlands	0.607270	T
3	Denmark	0.580754	T
4	Germany	0.580563	T
5	Finland	0.577935	E
6	Ireland	0.566806	L
7	France	0.566513	T
8	UK	0.549765	L
9	Sweden	0.548971	E
10	Switzerland	0.530458	T
11	Austria	0.524624	T
12	Australia	0.524451	L
13	Iceland	0.504240	E
14	Spain	0.470586	T
15	Italy	0.467561	T
16	Canada	0.466098	L
17	Belgium	0.463126	T
18	Japan	0.460899	T
	New Zealand		L
19	Zealand	0.450721	
20	Portugal	0.432482	T
21	US	0.413762	L

⁷⁶⁰ A high score alludes to a higher level of equity in time use, that is a more reasonable balance between formal employment, informal and leisure related time use.

Table 5.70, Correlations and Significance, ⁷⁶¹

Indicator	Sustainability		Time Use	
		sig.		sig.
Time Use	.612	.003		
Sustainability			.612	.003
Society*	.889	.000	.575	.006
Economy*	.964	.000	.530	.014
Environment*	.861	.000	.665	.001
Infrastructure*	.916	.000	.649	.001
Individual economic indicators*	.997	.000	.587	.000
Education*	.997	.000	.610	.003
Educational Proficiency	-.074	.749	.374	.169
Government* ⁷⁶²	.874	.000	.320	.158
Taxes* ⁷⁶³	.995	.000	.591	.005
Social Expenditures*	.996	.000	.584	.005
Social Capital/Efficacy*	.998	.000	.668	.003
Group Social Indicators* ⁷⁶⁴	.991	.000	.668	.003
Social Attitudes* ⁷⁶⁵	.996	.000	.579	.000
Health*	.999	.000	.615	.004
Traditional Economic Indicators*	.992	.000	.585	.005
Non-Traditional Economic Indicators*	.995	.000	.609	.003
Agriculture*	.996	.000	.599	.003
Business Climate*	.998	.000	.618	.000
Energy* ⁷⁶⁶	.940	.000	.634	.003
Pollution*	.951	.000	.631	.002
Natural Resources*	.996	.000	.619	.003
Consumer Goods* ⁷⁶⁷	.998	.000	.611	.003
Urban Density	-.085	.731	.109	.656
Density	.065	.780	.140	.545
Hours	-.745	.001	-.312	.169
Women, 20<hrs/week	.445	.043	.007	.976
Men 20<hrs/week	-.498	.022	.046	.842
Women, 39>hrs/week	-.803	.001	-.394	.077
Men 39>hrs/week	-.733	.001	-.313	.167
Unionization	.459	.064	.609	.009
Road Travel Per Capita	-.282	.228	-.590	.006
Train Travel Per Capita	-.264	.291	.085	.737

⁷⁶¹ * Denotes scale item, correlations to sustainability are full. For partial correlations contact author.

⁷⁶² Refers to an index of public institutions.

⁷⁶³ A high score is indicative of a progressive taxation system and a high level of taxation geared towards limiting certain kinds of consumption.

⁷⁶⁴ Indicators of group social welfare.

⁷⁶⁵ Attitudes relating to social and civic engagement along with other attitudes relating to perception of safety.

⁷⁶⁶ Energy consumption and Production.

⁷⁶⁷ Mostly comprised of the Consumer Price Index.

Bus Travel Per Capita	-.368	.134	.196	.436
Prisoners per capita	-.398	.102	-.688	.001
Abortions	.241	.475	-.244	.508
Divorce	-.333	.466	-.782	.038
Lone Parent Families	-.073	.756	-.518	.023
Per capita GDP adjusted tax rate	.472	.031	.259	.257
GDP and Purchasing Power Parity Adjusted tax rate	.398	.074	.232	.311
Social Expenditures as % Government Expenditures	.410	.065	.450	.041
Social Expenditures as % GDP	.192	.416	.219	.354
Social Expenditures adjusted for PPP and GDP	.510	.018	.37	.099
Obesity	-.323	.165	-.601	.005
Psychological Illness	.040	.865	-0.386	.084
Infant Mortality	-.465	.043	-.746	.002
Imports/Exports	-.637	.003	-.477	.034
Industry/Services, GDP	.317	.161	.184	.426
Income Inequality	-.320	.003	-.801	.001
Natural Resources Adjusted for population and urban areas	.065	.780	.14	.545
CO2 Industry	-.089	.701	-.086	.711
CO2 Residential	-.014	.954	-.354	.116
CO2 Transportation	-.191	.406	-.407	.067
CO2 Structures	.178	.447	.110	.636
Environmental Progress Index	.301	.185	.411	.065

The find set forth in the foregoing that show that there is a strong relationship between a number of individual factors and *both* sustainability and time use. With respect to these findings, the conclusions that are particularly prominent and noteworthy are the following:

- There is a strong positive relationship between indices of sustainability and time equity.
- The average number of hours worked per week is consistently higher in less sustainable countries.
- There is a high correlation between the level of unionization and both time equity and sustainability. With the sole exception of France,⁷⁶⁸ countries that exhibit high levels of unionization also exhibit high levels of equity in time use.

⁷⁶⁸United States Department of Commerce (2007). *Economic Trends and Outlook: France*. Retrieved: July, 15, 2007. Website: <http://www.buyusa.gov/france/en/113.html>

Table 5.71, Percent of Unionization in the Work force⁷⁶⁹

Country	Percent Unionization	Category
Sweden	82	E
Denmark	76	E
Finland	76	E
Norway	57	E
Belgium	53	T
Ireland	45	L
Austria	37	T
Italy	35	T
Canada	30	L
UK	29	L
Germany	26	T
Australia	25	T
Japan	22	T
New Zealand	22	L
Switzerland	22	L
US	13	L
France	9	T

- There is a very strong relationship between indicators of social welfare⁷⁷⁰ and both equity in time use and various measures of sustainability.
- Levels of civic engagement along with people's confidence in various social institutions reveal a pattern that is not consistent with the overall index of sustainability. Certain countries such as the United States tend to score highly relative to citizen's attitudes while not performing very well relative to other indices though associated with sustainability.
- The patterns observed both relative to individual social indicators and an index of social indicators are generally compatible with both indices of sustainability and time equity. That is generally true save for certain deviations such as the United States, most countries that score highly in indices of sustainability and time use will also score highly on indices of social indicators
- Education, when broadly defined, is mostly positively correlated to a nation's level of sustainability and time equity.
- When taken as a whole, countries with high rates of individual, corporate and goods taxes tend to exhibit greater levels of overall sustainability Considering

⁷⁶⁹ OECD (2000). Retrieved: June, 27, 2007. Website: <http://stats.oecd.org/index.aspx>

⁷⁷⁰ See table 4.18 for more details.

these findings it is reasonable for one to conclude that taxation is both a corollary of and directly contributes to sustainable behaviors.

- The more countries spend on social services the more they tend to display sustainable patterns; however, the United States provides the exception to the rule since its partially private system of healthcare and child care are more expensive than other countries despite the nation's poor performance on sustainability.
- There is a strong inverse relationship between the level of economic inequality exhibited in a country, and its overall sustainability and time equity.
- Established measures of environmental sustainability such as the EPI are correlated both to the other measures of sustainability used here and time use.
- An ANOVA of major indicators, subcategories and individual variables revealed that all major indicators (sustainability and time use) along with subcategories such as (social, economic and environmental indicators) differed significantly on the basis of country categorization (liberal, traditionalist, egalitarian). Additionally, the ANOVA analysis revealed that most individual indicators also differed significantly based upon this categorization.⁷⁷¹
- A factor analysis of all major indicators, subcategories noted that most indicators and categories were comprised of one or two major factors⁷⁷². This finding substantiates the general organization of the indicator categories and also furthers the hypothesis that sustainability tends to lean towards being a univariate phenomenon.⁷⁷³
- Aside from the influence of time use and other structural factors on health outcomes, there is also the issue of healthcare and how health status affects time use. From viewing the data on a general level it is possible to infer that countries which maintain a healthy population also tend to exhibit equity relative to time use. It is reasonable to assert that healthy people whose healthcare needs are met are more capable of working and participating in non-work related activities. In doing such they also help to create a system in which they are not dependant upon others to support them and in doing such conserve the time resources of society as a whole. In addition to the basic relationship between health and time use we can also infer that how healthcare systems are structured also has an influence on time use. As noted before, relative to social services when necessary and pervasive social needs are not provided in a mandatory and comprehensive fashion the cost for such services tends to be high. This increased cost mandates more overall work time being spent to pay for such services while disproportionately affecting those who require them the most. As the data demonstrate, especially relative to

⁷⁷¹ Data available from author upon request.

⁷⁷² Usually accounting for more than 40 percent of the observed variance.

⁷⁷³ Data available from author upon request.

the United States, such systems are both costly and for a number of reasons ineffective. Ultimately, health outcomes demonstrate the interrelated and self-complicating nature of sustainability and time use. In general we can conclude that health both facilitates equitable patterns of time use while equity in time and high levels of sustainability facilitate healthy lives.

Conclusions

Judging from the foregoing analysis we can conclude, with a relatively high level of certainty, that there is a strong relationship between time use and various manifestations of sustainability. There are strong theoretical explanations for all of the patterns and correlations discussed above. Although further structural analysis and more specific research is definitely in order, the basic hypothesis of this work has been confirmed. Specifically, we can conclude a number of things about time use and sustainability from this analysis.

First, is it likely that the social, economic and environmental factors that dictate whether a society is sustainable or not are highly related one another, and to time use in a structural fashion. This observation leads us to conclude that “true” or lasting sustainability or time equity can only be achieved when there is relative equity exhibited in all related factors. From a conceptual standpoint this makes sense. If all aspects of a system are required to function, then if one area is not functional it will likely create situations that compromise other aspects of the system. Second, relative to the causal relationship of time equity to sustainability, considering the dynamics observed it is likely that structural factors- including a nation’s infrastructure, government policy and economy- are mostly causal in terms of creating situations that then result in certain time use patterns. Despite this, it also appears theoretically probable that certain patterns of

time use contribute to various manifestations of sustainability. In particular, outcomes relating to health and levels of consumption appear to be particularly influenced by time use.

Ultimately, time use can be seen as being both a proxy for a society's level of sustainability and also a component of it. In addition to the dynamic between time use and sustainability the measures of both phenomena also reflect the influence of government, policy and structural factors such as geography on social patterns. Specifically, the findings reported here appear to substantiate Goodin et al.'s⁷⁷⁴ findings that egalitarian welfare states fare the best in terms of time use, while traditionalist states maintain a middling position, and liberal states fare the worst. Additionally, the findings appear to be applicable to sustainability since indicators used strongly parallel this observation. Although, various structural aspects such as level of urbanization, natural resources and climate influence sustainability related behaviors, a nation's overall performance appears to be highly contingent on the structure of its government, policy and culture.

Finally, it is noteworthy to mention the exceptionalism of the American experience relative to sustainability and time use. Even when compared to other liberal countries such as Australia, or Canada, or countries of similar geographic and social composition (i.e. Canada), the United States occupies a position that is deviant in almost all major ways. With the exception of social attitudes and level of education, the United

⁷⁷⁴ Goodin, R, Rice, J. M., Parpo A., Ericksson L., (2008) *Discretionary Time*, Cambridge University Press.

States consistently performs poorly on both measures of time use and sustainability. In a fashion similar to what dictates success in other countries we can attribute these patterns aberrant to Americas' lack of meaningful policy relating to sustainability and time use; meaningful comprehensive planning, sufficiently funded social programs and legally mandated vacation time are all lacking in the United States. Also, we can partially attribute America's unique position to its highly individualist political culture and consumerist popular culture. Specifically, we can link these cultural norms to various behaviors such as material consumption and social policy, both of which directly impact sustainability. Additionally, it appears likely that American's attitudes about the status of their country help conceal the ill effects of policies and cultural values that have contributed to their situation.

Chapter 6

Conclusion

There are a number of conclusions that can be derived from the preceding analysis of work, time use and sustainability. Most prominently, as mentioned before, is that there appears to be a strong structural relationship between levels of sustainability, equity in time use and policies geared towards addressing these issues. The analysis lends itself to a number of commentaries about the art of assessing sustainability. Specifically, measures of sustainability require a systematic analysis that considers a wider variety of factors than have usually been examined in sustainability-related research. Also, assessing sustainability is intrinsically related to the ability to forecast future conditions and deal with issues of shifting public tastes, technological developments and changes in our understanding of relevant factors. Moreover, sustainability assessment, especially on a societal level, is a developing field that possesses much potential but faces many challenges. In addition to conclusions relating to the primary analysis of this work, there are a number of conclusions we can infer about how this analysis relates to theoretical considerations and discussions of the role of sustainability in public policy and applied research settings.

The measures examined in this study tend to confirm the idea that there is a systematic relationship among groups, individuals and structural factors in society and represents an import step in advancing our understanding of how behaviors, policies and environments interact in important areas of life. As the prior discussions note, there is a large body of research that addresses specific relationships such as that between health

outcomes and hours worked⁷⁷⁵, or the relationship between sprawl and resource consumption⁷⁷⁶. Although this type of research is highly useful and required to maintain methodological accuracy, its utility relative to a broader understanding of the forces that shape society is somewhat limited. As widely accepted theories of sustainability correctly note,⁷⁷⁷ one of the goals of understanding sustainability is to discern the interrelationships between various aspects of society and the natural environment. The approach used here is an attempt to operationalize such an idea. Thus, the methodology used here endeavors to integrate a broad range of existing research on various topics and forge a broader theory related to sustainability.

There are a number of specific things that can be gained from this research in terms of research methodology and deepening our understanding of sustainability. First, the index developed here integrates topics not conventionally used in measures of sustainability. Similarly, the measure of time use falls into this category of enhanced measure development. The combination of these measures with other indicators such as business climate, social capital and various other factors can also be seen as also falling into this category of research boundary expansion. It is often the case that on some of these factors particular nations are divergent from the overall pattern observed. Through noting this deviance it is possible to further explore how these conflicts arise and theorize as to how they might be resolved.

⁷⁷⁵ Michie, S., Cockcroft, A., (1996). Overwork Can Kill. *British Journal of Medicine*, 312, 921-922.

⁷⁷⁶ Gillham, O., (2002). *The Limitless City: A Primer on the Urban Sprawl Debate*. Island Press.

⁷⁷⁷ Clayton, T., Clayton, A., Radcliffe, N. J., (1996). *Sustainability*. Earthscan.

On a broader scale, the methodology used for the construction of the index of sustainability and time equity attempts to create conceptual and methodological balance amongst social, economic and environmental factors. This approach represents a departure from established cross-national measures such as the Environmental Progress Index or the World Progress Index since they rely primarily on environmental measures as conventionally understood. Although this process represented a substantial methodological challenge, it is ultimately necessary to consider multiple measures since there exists a perceivable relationship amongst these variables and because they tap various aspect of a society's ability to survive over the long run.

A few noteworthy lessons can be taken away from the methodology used here. First, there is a strong is need to balance and integrate large quantities of data in this area of research. This is particularly difficult when the number of cases analyzed is relatively limited while the number of variables at play is large. Although the methodology used here employs a qualitative/quantitative hybrid to achieve this end, data methodologies such as factor analysis appear to be highly applicable to the situation at hand. However, regardless of the level of sophistication of statistical measures, there is ultimately a certain level of methodological subjectivity and art relative to structuring and presenting the findings of such an analysis.

Second, unless the prevailing currents of research and data collection change substantially, it is likely that a cross-national analysis of sustainability will have to deal

with certain deficiencies in the availability of and quality of data. This represents both a challenge to developing improved measures of sustainability and to the greater practice of social science research. One area in particular relates to the collection and standardization of data. Although several organizations such as the United Nations, the World Bank and other international bodies add importantly to the amount of uniform and extensive data on topics that would be useful to an analysis of sustainability such data remain relatively limited in scope at this time. Although by the standards of conventional research, creating an organization or expanding the scope of existing organization to collect and standardize both new and existing data on a variety of topics would be expensive, the net gain for both society and researchers would make such an investment comparatively small.

Fourth, the measures of sustainability and time used here on a cross-national level represent a theoretical framework which can be applied to a variety of analyses that vary in both scope and topic. As appendices B and C note, analysis that relates to sustainability can be conducted on specific objects such as consumer goods or smaller social units such as regions or towns. Regardless of these variations, a theoretical and methodological framework which attempts to assess the interrelationship between diverse social, environmental and economic factors is applicable in many situations. Along these lines, it is highly desirable for future research to contain a broad perspective since it makes conducting an analysis such as the one presented here more approachable in terms of integrating data and findings.

Finally, it is useful to consider the role that forecasting plays in sustainability research. Although this research focuses on ascertaining the existing relationship among variables, it is ultimately desirable to be able to use both our empirical and theoretical understanding of time use and sustainability to forecast future trends and develop policies based upon existing research. Specifically, it is necessary to develop accurate forecasts to determine which trends are least sustainable as well as to monitor whether policy changes to promote sustainability are having the desired impact.

Theoretical implications

Both the theoretical discussion and empirical analysis that this work has presented lend themselves well to a number of conclusions about the role that time use and sustainability play in policy, in politics, and in empirical and normative theory development. Relative to policy, the analysis presented here depicts how various policies, such as those relating to the length of the work week, have influenced various aspects of sustainability such as health outcomes and social welfare. We can also gain from this analysis some understanding of how policy can be used to address issues related to time use and sustainability. In the prior instance of policies geared towards establishing a work week of a certain length, it is relatively self evident that some policies tend to result in certain outcomes relative to sustainability. Specifically of interest are policies that are directed at addressing past flaws in policy or issues that have not been traditionally recognized as being problems such as pollution or work-related stress. For instance, returning to the work week example conventional time use and labor policy

might not consider the social and economic cost of stress or stress-related illness created by overwork.

In addition to this, the prior analysis of time use and sustainability lends itself well to an analysis through various sociological and normative theories. Specifically, much of what has been observed can be viewed and explained through the theories of Weber, Marx, Durkheim, Taylor and Plato. Also, it is possible to apply these approaches to the development of future research and policy, either applying theory to the development of policy or providing a normative framework for policy. In addition to analyzing time use and sustainability in terms of policy and formal sociological and normative theories, the perspectives developed here contribute to the greater dialogue about the study of time use and sustainability, both in terms of the methodologies used and the potential topics for future research identified. Considering the breadth of this work it may be relevant for work on numerous topics. Although an exhaustive discussion of these issues is prohibitive, the following discussion outlines some of the major theoretical themes, specific conclusions, and potential for future research both in terms of general theories and areas of specific interest.

Marxist thought, especially discussions relating to theories of material distribution and class conflict, is highly relevant to a discussion of sustainability and time use. In either the instance of the distribution of resources or the manifestation of tensions between classes we find that Marx's description of the inequities and tensions that arise from the operation of capitalist systems are very applicable to the situations observed.

For instance, national levels of sustainability suggest that the amount of resources used in certain countries, the United States in particular, as well as the distribution of resources seems consistent with capitalist exploitation by some group either within or outside of the nation in question. On the domestic side, economic progress which is accomplished at the expense of welfare of the majority of people seems consistent with Marx's view of exploitation. For instance, growing income inequality in developed countries such as the United States can be seen as being indicative of this type of exploitation. Additionally, the ubiquitous reliance on developing nations' resources and labor may represent a related form of exploitation. However, in other instances such as petroleum production, if organized properly such production can result in much income both nationally and individually for the producing nation this is the case with Norway and how it uses the nation's share of North Sea oil to enhance the quality of life all Norwegians. Overall, many of the dynamics that Marx describes appear to explain at least in part why some countries exhibit higher levels of social and economic sustainability than others.

Although an analysis of time use and sustainability in the developing world was not included in this work for reasons of lack of access to reliable data, it is interesting to consider the place of the developing world in such a discussion of sustainability and time equity. From what is generally known,⁷⁷⁸ much of the developing world exhibits significantly lower levels of sustainability and less time equity than even the least sustainable developed countries. Considering that much of this inequity is the consequence of the developed world's desire for material resources and cheap labor,

⁷⁷⁸ Adams, W. M., (2001). *Green Development*. Routledge.

Marx's observations about class exploitation appear to be particularly salient on a global and cross-national level. However, despite a good amount of consistency in terms of global economic dynamics, certain developing countries have been exceptions to this trend either by virtue of state-level economic planning, as is the case in South Korea or Singapore, or via some type of non-democratic state control as would be the case in places such as Iran or Venezuela.

In addition to the various Marxist analyses of the exploitive nature of resource consumption in the developed world, similar models can be extended to time use. For instance, it is commonly observed that the exportation of manufacturing jobs to the developing world, combined with these countries' lack of meaningful labor protections, has resulted in highly inequitable working hours for those who labor in those countries⁷⁷⁹. Although some have argued that workers in such situations are paid a relatively high wage compared to their peers, such levels of compensation are still significantly lower than those present in the developed world⁷⁸⁰.

A similar situation exists relative to environmental standards in the developing world. As many have noted lax environmental policies have resulted in high levels of pollution in and emanating from these countries. Thus, the gains experienced in the developed world in terms of material goods are purchased at the expense of not only the material well being of those in the developing world but also in terms of their time use

⁷⁷⁹ Stiglitz, J., (2003). *Globalization and its discontents*. W.W. Norton.

⁷⁸⁰ Wood, A., (1998). Globalization and the Rise in Labour Market Inequalities. *The Economic Journal*, 108(450), 1463-1482.

since being employed becomes geared towards creating goods for the international market rather than for domestic consumption. A similar situation occurs in domestic situations within the countries studied. As the data indicate, countries that exhibit higher levels of inequality combined with neo-liberal economic policies tend to exhibit the lowest levels of equity in time use and achieve the lowest levels of sustainability. In either instance, if we look at the structural factors underlying these situations it becomes evident that much of the wealth, well being and potential leisure of the prosperous of these countries is derived at the expense of the exploitation of the lower classes.

The United States is by far the most prominent example of this pattern since it exhibits high levels of inequality and lacks much substantive policy geared towards addressing issues of standard of living or time equity. This exploitation appears in both various aspects of sustainability and in the area of equity in time use. Regarding sustainability, when limited resources are allocated in highly unequal ways it is inevitable that certain groups will maintain a substantial advantage over others. Additionally, such differential economies are conducive to further problems relating to the cost of living and maintaining a stable economic position in society. As noted before, when there are high levels of inequality those with the most resources tend to set standards (for example, in housing) which are then applied to those of lower status, which in turn puts more economic stress on those lower status families.

In addition to the differential economics of these situations, we should also consider the cultural division created in such systems. Regardless of the rhetoric of

meritocracy in liberal capitalist countries, it appears that other factors such as socioeconomic status have the most prominent position in determining who advances in society. As research relating to the social, economic and physical status of individuals notes, there is a strong propensity for individuals to be confined by their social status⁷⁸¹. This situation is apparent in a number of ways, including economic status, health, occupation and education⁷⁸². On a general level it is possible that such inequalities represent a failure to consider the social sustainability of middle and lower income people relative to their economic and individual quality of life needs. Although none of the countries studied manifests an extremely rigid caste system such as those observed in India, the countries which do exhibit relatively higher levels of inequality do appear to significantly limit the mobility of their members.

In both the instances of social or economic sustainability we find that Marx's analysis relating to the inevitable tension that arises from the exploitation of the lower classes by the capitalist class appears to be true in some of the instances studied. The instances where Marx's model of class appears to be most applicable are in countries that maintain high levels of inequality and ideologies that endorse an unfettered capitalist or libertarian ideology. Specially, countries that are more unequal tend to have more

⁷⁸¹ Adler, N., E., Stewart, J., Marmot, M., (1999). *Socioeconomic Status and Health in Industrial Nations: Social, Psychological, and Biological Pathways*. New York Academy of Sciences.

⁷⁸² Marmot, M., (2004). *The Status Syndrome: How Social Standing Affects Our Health and Longevity*. Owl Books. Croll, P., (2008). Occupational choice, socio-economic status and educational attainment: A study of the occupational choices and destinations of people in the British household. *Survey Research Papers in Education*. 23(3), 243-268.

conflict in terms of economic and social tensions than those that do not⁷⁸³. Also, we can conclude that by-and-large much of the developed world represents an exploitive class when its relationship to the developing world is considered.

Along these lines, we can extend this discussion of the negative aspects of inequality and class-based conflict to time use. In a fashion similar to economics, societies that exhibit high levels of social inequality will likely also exhibit highly unequal levels of time equity. To substantiate this point one need only consider the relationship between time use and economic resources. Clearly, those who possess the most resources in an inegalitarian system have the most free time since they are independently wealthy⁷⁸⁴, do not need to work, and have nearly all of their needs met; in contrast, the poorest individuals will exhibit the least time equity since their labor is undervalued and they have little flexibility in terms of managing their limited free time⁷⁸⁵. In a society such as the United States lower income jobs are often scheduled in ways that interfere with other aspects of an individual's lives. For instance, it is common for lower wage jobs to include shifts including late at night hours or on work weekends. In addition to this, time equity can be further compromised when individuals are forced

⁷⁸³ Schock, K., (1996). A Conjunctural Model of Political Conflict: The Impact of Political Opportunities on the Relationship between Economic Inequality and Violent Political Conflict, *The Journal of Conflict Resolution*, 40(1), 98-133.

⁷⁸⁴ In the instance mentioned the independently wealthy can be considered products of either inherited wealth or some past effort at acquiring a secure economic position. This group can be seen as being separate and most likely above those individuals who are prosperous by virtue of time-intensive labor and who must continue to work to support their hard sought lifestyle.

⁷⁸⁵ It is possible to make the claim that the unemployed, or those that rely on public assistance or savings to exist, have a good deal of flexibility relative to time use. Such claims are inherently deficient since they neglect to note the precarious and temporary nature of such situations.

to work longer hours to maintain their jobs, or take second and third jobs⁷⁸⁶. In either instance these compromises in time equity exist mostly to serve the needs of those in higher social strata. These phenomena along with other observations made in the study appear to substantiate Goodin et al.'s⁷⁸⁷ claim that ultimately time use is interchangeable with money, and when applied to a Marxist way of thinking time use achieves a status similar to any other scarce resource of value to people.

In addition, Marx's observations about the critical mass of social change appear to be applicable to a discussion of sustainability. Traditionally a Marxist revolution occurs, or was supposed to occur, when the capitalist class reaches a point where the exploitation of the proletariat can no longer be tolerated. In the instance of sustainability a strong parallel can be drawn in terms of the organization of society and the distribution of resources. Specifically, the countries studied appear to depict a situation in which they either choose values and policies that promote egalitarianism and sustainability or permit inequality and tolerate degradation. In many senses the movement of certain societies away from an exploitive and unsustainable organization represents a paradigm shift that is similar to Marx's theory of social action. Although these changes are often gradual and often occur within the context of an established social order, in a fashion similar to Fabian socialism, fundamentally social movements and policies geared towards sustainability represent an effort to address, in part, the inequities and waste that form the foundation of Marx's description of class-based capitalist societies.

⁷⁸⁶ Schulman, B., (2005). *The Betrayal of Work*. New Press.

⁷⁸⁷ Goodin, R., Rice, J. M., Parpo, A., Ericksson, L., (2008). *Discretionary Time*. Cambridge University Press.

The second aspect of Marxist thought that is applicable to a discussion of time use and sustainability involves ideas related to the utilitarian distribution of resources. The famous statement of “from each according to his ability, to each according to his need”⁷⁸⁸ appears to describe many of the issues related to time use and sustainability. Both on an individual and group level we are confronted with situations in which certain individuals or groups produce different and varying amounts of resources. Also, it is apparent that people on average require certain things in terms of their standard of living, social needs and time use. Despite the rhetoric of some that high levels of inequality in income are justified⁷⁸⁹, it appears more likely that people are more or less the same in terms of their needs and their capacity to work⁷⁹⁰.

Although much has been made of the economic value of a CEO of a large company relative to his or her lower paid coworkers, the reality of the situation, although it does differ in terms of its nature and the skills required, is that such individuals are only capable of doing about the same amount of work as an individual earning minimum wage. This observation, combined with the observation that more equitable societies tend to be more productive, lends credence to Marx’s notion of a “rational” distribution of resources. Granted, neither perfect equality nor total rationality in the allocation of

⁷⁸⁸ Tucker, R. C., Marx, K., (1978). *The Marx-Engels Reader*. Norton.

⁷⁸⁹ Renolds, A., (2006). *Income and Wealth*. Greenwood Press.

⁷⁹⁰ This assertion is derived from both data relating to the number of hours worked in an average week (Found In: ILO (2002). *Key Indicators of the Labor Market*. Retrieved, July, 7, 2007. Website: <http://www.ilo.org/public/english/employment/strat/kilm/index.html>) along with an implicit understanding that people are biological organisms constrained (quite broadly) by certain physical and mental capacities.

resources will ever be achieved; however, considering the information available it is reasonable to argue that the most productive society, at least relative to the variables examined here, is one in which limited resources are allocated to people who have the most use for resources in terms of marginal utility ⁷⁹¹and that societies which practice such allocations are likely to be more productive in the long run.

Although Marx's commentaries do much to address issues of social division and the distribution of resources throughout society, they contribute relatively little to our understanding of the role organizations play relative to time use and sustainability other than being tools of class-driven conflict. In particular, we can frame some of the discussion about organizations in terms of Max Weber's theories of organizational structure and function. At the heart of these discussions are two primary considerations. First, there is the premise that hierarchical and rational organizations are needed since they can be highly effective at developing and implementing sophisticated policies.

Along these lines classical Weberian organizations can also be seen as trend setters for public opinion and other forms of mass consensus since they provide both an apparatus to create an organizational culture and implement policies that effect the general public. This becomes particularly apparent if we consider the role that contemporary and historical organizations have played in major economic and social developments. For instance, large corporations and militaries can both be described as closely resembling

⁷⁹¹ Although an assessment of marginal utility is somewhat arbitrary, the position is taken here that objects which directly contribute to a discernable material standard of living, tangible economic productivity or quantifiable outcome relative to things such as health and welfare are of the highest marginal utility.

the organizations featured in Weber's model. In either instance these groups, along with others, have been able to purvey a certain ideology that is consumed both by their members and by the general public. Additionally, through their extensive and large structures such formidable formal organizations have been able to implement policies that have strongly impacted those subjected to them.

Although the philosophy and agendas of some of these organizations are in obvious conflict with the goals of sustainability, their ability to influence situations is of significant interest. This observation leads to the second premise –namely, which is that hierarchical and rationally structured organizations have a strong role to play in facilitating sustainability and equity in time use through the inculcation of management and organizational values.

Generally speaking, the development of unsustainable or inequitable systems may arise from the behaviors of individuals or groups of individuals who possess either little or no technical knowledge or who possess some type of interest that is adverse relative to the rest of society. In either of these instances ignorance or adverse incentives motivate individuals to endorse practices that are not ultimately productive in terms of the broader society. Thus, it is necessary for professionals or rational organizations to develop strategies that are able to thoughtfully solve problems, convey a certain consensus, and circumvent individual agendas so as to further the greater goals of sustainability. Also, it is noteworthy to mention that such organizations are not necessarily at odds with individual interests. Obviously, any organization that operates without satisfying some

element of individual interests will obviously be either corrupt or very short-lived. What is argued here is similar in many respects to Rawls' theory of justice in that so long as individual's interests fall within a reasonable parameter of need they are rational, and ethical for that matter, and deserve to be met.

It should be noted that there are certain areas such as individually-directed behaviors or small informal groups wherein rational organizations cannot address issues related to sustainability and time use. Such ways appear to have a pervasive presence relative to the topics at hand. To highlight this point we should consider the observation that countries with extensive welfare states and policies geared towards managing various deficits that have developed tend to be more sustainable and tend to manifest equity in time use. In the instance of welfare states we can consider a welfare state as representing an organization that attempts to achieve a rational or justified end. Clearly culture plays an important role in creating mass consensus relating to certain behaviors: however, the role of some specific institutions appears to be primary in facilitating many outcomes of interest to this study. In the absence of formal institutions that can manage social functions on a societal level, it appears unlikely that many of the sustainable outcomes and time use equities observed in some countries would occur.

Additionally, the structure and methods that these organizations use represents a fundamental evolutionary step in terms of basis for the operation of society. Prior to the application of the scientific method to the activities in question we find that politics, religion, ideology and individual interest formed most of the basis for social policy and

other forms of governance. History teaches that these motives often resulted in tremendous amounts of discontent, inefficiency and suffering. Despite the fact that Weber's original ideal bureaucracy was intended to reflect value neutral understandably, it appears more reasonable to conclude that bureaucracies do exhibit inherent sets of values regardless of whether their existence is or is not explicit. Additionally, one could argue that if we recognize this as being true than it would be useful to discern how certain values should be actualized via organizational activity. Although it is impossible to ever eliminate politics and petty interests from the actions of organizations, the ascension of the rational organization with its ability to implement ideas through a hierarchy of authority and action is fundamental to advancing the needs of sustainability since rational organizations can counter many of the forces that lead a society to be less sustainable.

Durkheim's theory of the division of labor represents the third theoretical perspective that is highly relevant to a discussion of time use and sustainability. In particular, we must question how the division of labor manifests itself in the countries that have been studied. When all the cases are considered it is possible to typify countries as manifesting two distinct forms of the division of labor. The first is what one could call a traditional or monetarily-based division of labor. As Durkheim's initial theory states, a formal economy exists in which individuals who specialize in a certain activity sell their labor and wares in exchange for money which is then used to procure other goods and services outside of their area of expertise. This approach to the division of labor is most apparent in the liberal countries where individuals earn an income which then is used to directly procure goods and services.

The second manifestation of the division of labor is what could be called the social or the collective system. In this system individuals occupy a similar position in that they specialize in a specific activity which forms their livelihood. However, unlike traditional systems, government often acts as an intermediary in the provision of certain services or in the redistribution of economic resources. Relative to a discussion of sustainability and time use, this system possesses a number of advantages over the traditionalist one. First, it allows for universality and economies of scale relative to social services. Second, the redistribution of resources allows for work that is either under valued or that is informal to be compensated in a monetary fashion. Thus, such a system allows for labor which is effectively marginalized in a traditional system to be formally recognized. Although all countries studied depict elements of both models, countries that lean more heavily towards the collectivized model tend to manifest higher levels of sustainability and time equity. What is interesting about this observation is that it suggests the traditional model of the division of labor does not represent the most efficient form of social organization since it neglects entire sectors of important work such as child rearing or household chores⁷⁹² and does not note the effect of economies of scale on these activities.

Fredrick Taylor's Scientific Management⁷⁹³ represents yet another classic approach to understanding behavior that is applicable to this discussion. As noted before,

⁷⁹² As mentioned in prior discussion, these activities are often typified as being economic externalities.

⁷⁹³ Taylor, F. W., (1998). *The Principles of Scientific Management*. Dover Publications.

Taylor's Scientific Management relies heavily on the idea of increasing efficiency through reducing behavior to simple actions which are then analyzed in a time motion study. Although Taylor's approach was originally designed to increase efficiency in manufacturing and work-related settings, the basic idea of increasing efficiency or promoting some type outcome through an analysis of how people act and use their time is quite applicable to a discussion of time use and sustainability. The key distinction that must be made between traditional Scientific Management and what could be deemed Neo-Taylorism is that the newer approach analyzes behavior relative to meeting the needs of sustainability and enhancing people's welfare whereas the older model focused on enhancing productivity and profits.

Using the basic idea of Scientific Management and the time-motion study one could make the case that such approaches could be applied to individuals and communities in such a way as to enhance their level of sustainability and time equity. For instance, one area where a time-motion study of behavior would be quite applicable would be to an analysis of commuting behavior in large urban areas. Through understanding how individuals commute and how much time they use doing such, it would be possible to then develop transportation systems and infrastructure that optimize time use and resource usage. Along these lines, it would also be useful to understand how individuals use their time both at home and work in an effort to discern the optimal balance between various activities. Ultimately, the ideas behind Taylor's Scientific Management appear to be applicable, at least in a vague theoretical and methodological

sense, to both an understanding of time use patterns and in developing policies that can influence people's behaviors towards productive ends.

Finally, we can view the situation relating to time use and sustainability from a classical normative perspective. Although it is possible to incorporate a number of normative perspectives into the discussions, arguably one of the most relevant is relating this issue to Plato's theory of the good society and his theories of the ideal state and its leadership.

The concept of the good or just society as described by Plato, amongst others, is highly applicable to a discussion of time use and sustainability. At the root of this discussion is the idea that sustainability or equity in time use represents an aspect of a good society. As the prior discussions have noted, impartial and rational rulers are most desirable in terms of their ability to develop and establish policies that promote the common good. Although it is often difficult to assess what represents a good leader, or for that matter then common good in terms of specific behaviors, these concepts still remain highly usable. In many senses Plato's notion of the philosopher king is analogous to the preconditions of a society that achieves sustainability. Granted the philosopher kings in modern governments are represented through educated and enlightened policy makers; however, the notion that an educated and enlightened leadership is necessary remains.

In many ways sustainability embodies many of the classic dilemmas of what is good in that to achieve a sustainable society one must balance the present and future interests of individuals with those of society while simultaneously promoting both. In expanding this concept to include the environment we are confronted with even more questions of value. For instance, an inclusive view of sustainability raises the question: what is the equitable balance between humanity's present existence, the environment and their ability to maintain a standard of living in the future? Inevitably, such questions lead us to reevaluate what traditionally has been acceptable as the standard view of what is a good life. For instance, is possessing a high level of material consumption for one's present life worthwhile if one's children must eventually do without? Also, along these lines the perspective of sustainability calls for dialogues regarding various aspects of society that are often viewed separately. One of the more prominent discussions relates to the notion of economic progress.

Traditionally, such progress has only been assessed by indicators such as profit or GDP. However, when one incorporates other aspects of economic systems such as the well being of individuals, the distribution of income, or the protection of the environment, then a discussion of what constitutes an economic benefit must also consider social and environmental externalities as well. When taken to its logical conclusion, this theoretical inclusiveness promotes a rendition of the good as being something that is both individually positive and yet strives to seek balance amongst competing interests. Although there is an intellectual propensity to pit various factors against one other, sustainability on many levels depicts a situation in which good begets

good and evil begets evil. As the numerous prior discussions have noted, it is difficult to have a society that is sustainable in one area while not in others. This observation leads to the conclusion that individuals and governments must promote the good (i.e., sustainability) wherever it is possible to do so.

Ultimately, this conclusion provides one of the more fundamental theoretical foundations for both the organizational and normative nature of a sustainable society. This concept can be summarized through the following: It is impossible to achieve the good in a piecemeal fashion through acting wisely in some instances and not in others, and that ultimately the good or sustainable society is something that is a product of widespread education and understanding on both the part of individuals and society as a whole.

In addition to general discussions of the normative aspects of time use and sustainability, there are various specific aspects of time use that warrant noting. One area of prominence is how time use relates to the well being of individuals, communities and the state. In all of these instances it is possible to argue that if individuals do not possess adequate free time and stable arrangements relative to time use they will be unable to participate in their community or politics or have an opportunity for reflection and educating themselves on relevant issues. As a number of philosophers ranging from Thoreau to Plato and Aristotle have argued, productive leisure is a necessary component of any functioning society.

In light of this premise, one could make the case that countries that do not allow for all citizens to have time to engage in such activities ultimately move these societies towards greater inequality in one form or another. Oddly enough, this idea parallels many commentaries on the nature of modern consumerism; since consumer culture over values the acquisition of material goods it creates a system in which things outside these activities are less valued. We can view these situations as representing a form of servitude in which individuals become enslaved to adhering to a narrow definition of existence that does not provide room for thought or expression outside a set of predefined norms⁷⁹⁴.

One can see numerous political and social consequences for such arrangements. First, the average person in such a situation is effectively discouraged from participating in politics or contributing to the community. However, elites and other factions that can afford the luxury of leisure become disproportionately represented in social and political discourse.⁷⁹⁵ With their over-representation these groups redefine society in terms that are congruent with their social status. Ultimately, this leads to a system that does not serve the average individual and often creates stereotypes of lower status people that are reflective of their manufactured ignorance and lack of engagement. If we view the state of countries such the United States we find that, at least in part, this description of the

⁷⁹⁴ A discussion of conformity and social values is found in: Veblen, T., (1899). *The Theory of the Leisure Class: An Economic Study of Institutions*. Dover Publications.

⁷⁹⁵ Two good discussions of elite control of political agenda's and mass political manipulation can be found in Schattenschneider, E. E., (1975). *The Semisovereign People: A Realists View of Democracy in America*. Harcourt Brace. And: Frank, T., (2004). *What's the Matter with Kansas: How Conservatives Won the Heart of America*. Metropolitan Books.

prevailing social order applies in good measure. To substantiate this point we need only consider the amount of time the average American works, either in formal or informal labor, along with the pervasive lack of civic engagement that most Americans exhibit⁷⁹⁶.

The issue of lack of free time is also applicable to the moral composition of the individual. When people lack time to think they have little opportunity to form their own opinions and often adhere to ideologies that they have not critically evaluated. As noted before, this situation is closely tied to the consumerist/materialist mentality prevalent in some countries. Under such circumstances people's lives are consumed by work to accumulate money which is then spent to buy goods which define an individual's existence. In its extreme manifestations the consumerist mentality breaks traditional bonds and values in favor of relationships defined by the exchange of money or material items.

This situation can be viewed in two ways. First, it represents the triumph of a version of capitalism in which reality is centered solely upon material resources. Second, through de-emphasizing an individual's ability to develop their own intellect, society essentially endorses a type of nihilism in which individuals are defined solely by things outside of their own minds. It is interesting to note the psychology behind this observation. As researchers who study cults and other high maintenance organizations

⁷⁹⁶ Schor, J., (1993). *The Overworked American: The Unexpected Decline of Leisure*. Basic Books. Putnam, R. D., (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.

have noted⁷⁹⁷, one method of creating subservience and zealotry in cult members is to create a situation in which individuals are never alone or are perpetually occupied with work or other activities. In many ways modern consumerist societies have adapted this approach to the everyday existence of most people.

Those who benefit most from the mentality of modern consumerism have developed an elegant method of sequestering objections to its core beliefs. As many commentators have observed⁷⁹⁸ the media and other authorities in countries such as the United States have pervasively endorsed the ideology of consumerism and capitalism. Individuals are bombarded with images of the desired existence and ideology while simultaneously having little opportunity to question let alone formally evaluate, such premises and underlying beliefs. For most people this situation amounts to one in which individuals must blindly accept the dictates of the status quo and the lifestyle and values it entails. Ultimately, such arrangements represent a strong deviation relative to classical renditions of the ideal state and the ideal individual. Additionally, if experience provides any basis for judgment it is likely that a society which does not promote conditions for individuals and groups to participate and develop risk deterioration of various arrangements which are conducive to productive politics and individual well being.

Policy Implications

⁷⁹⁷ Brear, D., (2005). *The Universal Identifying Characteristics of a Cult*. Axiom Books.

⁷⁹⁸ Stiles, P., (2005). *Is the American Dream Killing You: How "The Market" Rules Our Lives*. Harper Collins.

There are a number of general themes that we can derive from this analysis about policy, society and the structure of government relative to time use and sustainability. As noted before, one of the primary features of developing sustainable societies is the need to consider the comprehensive and interrelated nature of all aspects of society, individuals and the environment. Although difficult to operationalize in terms of a specific study or methodology, this observation does create a mandate for unconventional and innovative thinking relative to assessing various aspects of sustainability. On the level of comprehensive theory, we can view sustainability as being composed of a set of distinctive areas such as economics, sociology or environmentalism that exist within interrelated networks. With this idea in mind we are then left to discern which aspects of a situation are most relevant to a specific analysis. Arguably, many of the shortcomings of various analyses are rooted in their failure to consider thoughtfully some relevant factors in a situation. For instance, an analysis of employment may only consider compensation without noting the cost of living or the number of hours or incomes required to earn that sum. In any instance it is necessary for a researcher to be able to appropriately contextualize their inquiries into the broader frame work of sustainability.

Aside from the notion that sustainability and time use entail a complex and ubiquitous set of issues, questions relating to sustainability raise a number of issues about the ideal structure of society. Considering the analysis presented here along with other discussions of both time use and sustainability, two concepts- resiliency and efficiency- appear to be particularly prominent in a discussion of what types of structures a successful society should endorse. First, efficiency refers to the ability of a society to

perform well at achieving a number of tasks while simultaneously integrating and balancing the needs of different aspects of a situation. As mentioned before, a sustainable system must both balance competing interests while managing multiple different things, to mutually enhance the productivity of all factors involved in a system. It can be argued that, efficiency relative to sustainability is composed of two distinct elements; there is *basic efficiency*, which relates to how productive or efficient a given item is, and *integrated efficiency*, which deals with how systems are managed to bring about mutual benefit.

Second, it appears likely that a successful or sustainable society is one that is resilient in terms of its economy, technology and infrastructure and culture. Specifically, we can make the case that societies which grow excessively reliant on a single strategy ultimately are more vulnerable to failure than those which are able to adopt more than one strategy when faced with changes in the challenges to be managed. For instance, infrastructure in the United States has developed to be almost wholly reliant upon personal automobiles. Although there is not a problem, save for pollution, with this arrangement when fuel is abundant and population densities are low, when either condition changes such societies are left with few useful options in terms of managing themselves. This assertion holds true for almost any aspect of sustainability.

On a certain level resiliency is an inherent part of sustainability since un-resilient systems will also tend to lack the networks and efficiency that are necessary to maintain sustainable arrangements. Although no society can ever be perfectly resilient, that is to

be able to modify its behaviors transparently without any transition hardships, societies that maintain a diverse and resilient structure will most likely have the resources to manage themselves more efficiently and be able to respond to change in a less traumatic manner. Additionally, resiliency goes hand-in-hand with efficiency, since an ideally resilient system will maintain multiple efficiency-related structures that it can call upon depending upon the situation.

For instance, getting back to the example of the American transportation infrastructure, if petroleum fuel were suddenly in short supply or much more expensive (as occurred in 2008) many people would be left with no other recourse in terms of transit. However, in a more resilient system such those found in Europe people could still use public transportation or walk within their communities since communities are denser and hence walkable. The latter instance provides an example of the nature of resiliency. Specifically, resiliency relative to large systems and sustainability are intentional since systems are unlikely to develop multiple alternatives and fail safes if only one activity is superficially profitable in the short run. Ultimately, both efficiency and resiliency highlight the need for intentional system designs relative to sustainability. Although sustainable systems practice forms of efficiency that once established are economically and socially justifiable it appears unlikely that certain forms of efficiency would develop without deliberate efforts.

It is interesting to note that the concepts of resiliency and efficiency relate rather well to certain theories of decision making in public policy. Specifically, at issue is the

idea of consciously uncoordinated policy decisions versus systematic and theory-driven decision making. As embodied the classic article *The Science of Muddling Through*,⁷⁹⁹ Charles Lindblom takes the position that policy decisions are often the result of various types of policy making. One particularly common type of policy making is the result of practitioners experimenting with various situations and constraints in a hands-on incremental effort to reach a policy solution. In contrast, another type of policy entails an individual or group focusing on “big picture” decision making that considers the greater context of a situation. This notion of policy making and other forms of social progress appears to be quite applicable to actions related to sustainability since progress relative to issues of sustainability requires both technical adjustment and broad theoretical understanding.

In addition to issues relating to efficiency and resiliency we can also consider stability to be a crucial aspect of sustainability. In general, systems that are not stable provide too many opportunities for efficiency to be compromised and planning and investment in infrastructure to not occur, or for existing plans to be inaccurate and therefore not very useful. If we extend the scope of our analysis to include third world countries it is possible to see the long term effects of instability on a society. In places that have been ravaged by war, social unrest, economic instability, or environmental problems structures that are necessary for the proper development and management of sustainable systems are not in place. Extending this concept to less extreme situations such as those in the developed world it is possible to make the case that systematic

⁷⁹⁹ Lindblom, C., (1959), *The Science of Muddling Through*. *Public Administration Review*, (19),79-88.

neglect in developing comprehensive sustainable systems creates a situation in which societies are vulnerable to instability and, that if allowed to progress, such neglect will ultimately prove to be self destructive.

A good discussion of this phenomenon is found in Aaron Wildavsky's and Caiden's work on comparative budgeting in the developed and developing world⁸⁰⁰. One concept in particular is the idea of the budgetary "claw back" in which a government withdraws money allocated to certain agencies or projects and hence effectively stalls the implementation of a necessary item. This concept can be applied readily to the development of policy in both the developed and developing world. Although more extreme in developing countries where the disturbances that causes budgetary issues are more dire in nature, such disruptions ultimately hinder social function and sustainability in both instances. For instance, a major recession may cause a poor country to reverse an environmental policy and allow clear cutting of a tropical forest or permit some other unbridled access to local resources which will result in irreversible damage to the resource.

Also at issue are matters relating to the certainty of whether a given policy is needed or will be effective. The issue of certainty is particularly problematic relative to policy dilemmas in developed nations since many issues are ambiguous in terms of the nature of the problem and potential solution. An analogy to this situation in the world of engineering would be that of a complex machine such as a train or automobile that is

⁸⁰⁰ Wildavsky, A., (1975). *Budgeting: A Comparative Theory of Budgetary Processes*. Little Brown.

neglected for a long period of time. Although such machines are likely less efficient than ones in good repair they are still relatively functional. However, since the machine is already compromised through neglect when the machine fails it is likely to be difficult and expensive to repair and likely to malfunction again. Ultimately when systems are unstable in this way it is often beyond the faculties of governments or individuals to address the multiple self-complicating factors that arise. Thus, an ideal system is one that is under constant supervision, both in terms of maintaining existing systems and developing newer, more efficient ones.

Aside from these broad themes it is also useful to consider the relationship between time use and sustainability on a theoretical level. It is reasonable to conclude that equity in time use forms a necessary and fundamental part of sustainability. There are two primary reasons for this: first, equity in time use appears to be a necessary aspect of achieving sustainable outcomes. When people do not have adequate time to live healthy lives, participate in their community or act in an economic and environmentally efficient manner, sustainability suffers. Second, when systems, either economic or infrastructure-related, are not sustainable they lead to problems with time use. For instance, when transportation infrastructure is not logically structured people spend far more time commuting than they would otherwise. In either instance equity in time use is reflective of sustainability. Considering both the empirical and theoretical discussion, we can conclude that time use represents a close theoretical corollary of sustainability.

What this implies, both for theory and research in sustainability, is that for the most part it is possible to use many measures of time use, such as commuting, to assess some aspect of sustainability such as sprawl or resource consumption. Additionally, those researchers and theorists who work to develop sustainable systems and policies need to consider time use in the development of theory and policy relating to sustainability.

In addition to theories that are applied directly to sustainability, it is also useful to consider how theory can be applied to future methodologies that measure sustainability. In particular, there is the notion of relative versus absolute indicators. As discussed in the methodology section, the index developed here uses mostly relative comparisons of various aspects of sustainability. Although useful, it would be even more useful to develop absolute measures of performance that gauge the total range of potential performance of a certain variable rather than what has been observed to date. The utility of such measures is that they allow for forecasting future trends and the assessment of the implementation policies that reflect those forecasts. Contemporary forecasting relies principally upon archival measures that may or may not consider the full potential of relevant factors at play. For instance, a relative measure of efficiency in transportation in two cities might compare their current performance; however, an absolute measure would consider the maximum hypothetical potential for greater than presently observed efficiency. Relative to such an instance we might consider the potential role of infrastructure planning and new technologies in improving performance. Although measures of sustainability must be grounded in a firm empirical reality, progress

ultimately mandates the development and application of models that can both anticipate new developments and forecast future conditions.

Theoretical considerations aside, there are also a number of specific observations about policy, institutions, individuals and some of the cases that have been studied.

Relative to policy, we can conclude a number of things. First, sustainability-directed policy must be comprehensive and integrated in terms of its considerations. Although it is always good to improve vis-à-vis established standards, when certain things are improved and the structures they exist in are not, the net gains may be minimal. Two examples of this situation are education in the United States and personal incomes in general. Relative to education in the U.S., as the analysis shows, the average American has more years of schooling than in any other country, but this comparative advantage is negated when one considers the relative poor literacy of the average American in both science and math along with the relatively high unemployment rate for people with a college education⁸⁰¹. Additionally, we might consider how this plays out on a cross-national level. One of the key features of the scale used here is that it allows for variability in factors while contextualizing them in to a greater index of sustainability.

For instance, two countries might have a similar average score relative to sustainability. However, one might be the result of consistently mediocre policy and behavior relative to sustainability, while the other might be the result of above average performance in one area and sub-par performance in other. An example of this might be

⁸⁰¹ Refer to analysis, Chapter 4.

considering a country such as the United States which most likely is of average performance when considered relative to all other countries⁸⁰² and a resource-rich country such as Dubai. In the latter instance, such countries often fund extensive social welfare programs from the revenue generated by their natural resource extraction. Despite showing a high level of performance relative to social indicators, such advances are effectively offset by the fact that their economy is based upon non-renewable resources.

In the instance of income, universally a high income is an attractive thing; however, the value of a high income may be offset if the cost of living is proportionately high. Ultimately, this observation leads to an interesting inference about developing policy related to sustainability. Although there are exceptions, it appears likely that it is better to have a number of policies with modest, achievable goals that are well integrated than one policy that performs wonderfully while others are largely neglected. The logic behind this assertion is that policy is more likely to be successful if most or all factors in a situation point towards the success of a policy rather than a situation where the advances of one effective policy are offset by a number of bad ones.

Another aspect of policy that relates to time use is that policies have a number of nuances to them that highlight the importance of understanding issues of scope and interpretation. Specifically, time use occurs within a number of different frames of reference ranging from a day's activities to those that occur over the course of a lifetime.

⁸⁰² Rather than just the developed one considered for this analysis.

Merely judging time use, or any other number of variables, by themselves can lead to a number of issues with ambiguity. Relative to the analysis performed here, we must consider the role a number of contextual other factors play in the time use situation. Although there is a strong relationship between work time, vacation time and sustainability, the greater issue is one of compounding factors which make even a small variation in work time have significant impacts. For instance, working forty hours a week in a suburban middle class setting with sprawl and no public transit, and therefore requiring long commute times, is significantly different than working forty hours a week in an urban setting with short commutes and other structural efficiencies. In a similar vein, a forty-hour work week might not seem as burdensome in a country that guarantees six weeks paid vacation a year as in one that does not.

In any of these situations one must be careful to consider both the scope and context of data relating to time use. As mentioned before, certain research relating to time use has neglected such considerations, with arguably serious adverse consequences⁸⁰³. As discussed before the research of Aguiar and Hurst analyzed time use patterns of American workers between the 1960's and the 1990's. These researchers concluded that American workers had on average substantially more free time than in the past. However, their research systematically neglected the effects of unemployment and under employment in certain groups, such as those with less than a high school education. Thus, the claim that American workers have more free time is somewhat dubious when

⁸⁰³ One notable example of this is: Aguiar M., (2007). Measuring Trends in Leisure: The Allocation of Time Over Five Decades, *Quarterly Journal of Economics*, 122(3), 969-100. In this work the author systematically ignores changes in average employment status over the decades studied.

the employment status of certain groups is considered along with other evidence on leisure time.

Considering the prior discussion of methodological and theoretical aspects of sustainability, these ideas can help us develop more effective methods for assessing sustainability. Although there is a strong motivation in the sciences towards universality, the situation relating to time use and sustainability is inherently diverse. Thus, policy that is applicable to one society might not be applicable to another. However, if we carefully consider the context of a situation it appears likely that policy can be developed to enhance both sustainability and time use in an “absolute” or performance-maximizing manner as discussed above.

One final issue that is extremely prominent in the prior discussion of context, theory and empirical data is the issue of American exceptionalism. Although the United States is quite deviant in terms of its time equity and sustainability, the structures underlying its low performance are ultimately similar to those of other countries. However, how these factors operate and influence certain things such as policy in the United States is markedly different than elsewhere. Specifically, America’s high level of cultural individualism, limited scope of social policy, high level of material consumption, and sprawling infrastructure appear to have the most negative impact on both time use and societal sustainability. With the possible exception of individualism, none of these factors can be seen as having a positive effect on sustainability or time use.

However, in the instance of the other countries studied, they for the most part only exhibit one or two of these inhibitory traits rather than all of them. For instance, Canada and Australia are mostly rural and not densely populated; however, they possess more extensive social policy and organize their physical infrastructure more efficiently when compared to the U.S.⁸⁰⁴. Also, how the United States expends its material and economic resources appears to contribute to its exceptional position. Specifically, American's high level of material consumption does not appear to enhance its standard of living relative to providing basic services or extending services to those that need them since material resources are often used for functions that do not require such large material inputs. To substantiate this point we need only consider the size of American houses and the fuel efficiency of the average American car which, in the aggregate, consumes enormous amounts of resources. In either instance one can imagine much more modest arrangements that ultimately achieve the same outcome.

Along these same lines, Americans' expenditure in terms of money appears to undercut both time equity and sustainability through its relative inefficiency. At the root of much of this inefficiency is the American model of the liberal welfare state and of personal finance. Although there are compelling economic reasons for Americans to collectively pay for things such as healthcare and college education, Americans have endorsed a system where individuals are primarily responsible for paying for these necessary services. The net effect of this is to increase the cost of delivering these goods along with placing the proportionally heaviest burden of cost on individuals who are least

⁸⁰⁴ Refer to analysis in Chapter 3.

able to afford such (the sick and young). Ultimately, this method of financing these activities, combined with America's high levels of personal debt, amounts to a situation in which many people are under a large financial burden that compromises their ability to exist and make progress.

We can view America's material and economic situation as negatively correlating to both time use and sustainability. In the case of the average American, arguably one could conceive of an economic and social system in which material and economic efficiency were enhanced such that the average person would not need to work as much while still maintaining the same, if not higher standard of living. Although this idea can be applied to all of the cases studied, it appears to be the most applicable to the United States. The United States provides an example of a society facing extensive social and economic challenges when judged relative to values and concepts that form the basis of thinking about sustainability. Regardless of this categorization, America provides an excellent example of a system whose structure is both inherently inefficient and is largely neglected. Although the United States is not inherently different than any other country studied, its experiences and how it has managed itself have created a status that is relatively unique amongst industrialized nations.

Finally, it is useful to discuss the future course of research in both time use and sustainability. In addition to the empirical findings of this work, the true utility of this analysis lies in the fact that it establishes a framework for future, more specific research in time use and sustainability. Arguably, the most prominent amongst these focused

inquiries is the study of various topics relative to their place in a greater system that considers sustainability.

For instance, one area of great potential is the application of Geographic Information Systems (GIS) to the field. As the instance of gentrification discussed in appendix C notes, many of the factors relating to sustainability and time use occur in a spatial fashion. Using GIS it is possible to conceive of any number of studies relating to various aspects of time use and sustainability such as the relationship between infrastructure and commuting patterns. Relative to the progression of future research, some research should attempt to analyze existing structures and policies and document their impact on sustainability before developing new policies. However, eventually it is necessary to aggregate the results of such analyses so that they can be used to develop empirically-based and effective policy.

Relative to specific policy areas, there are any number of categories that can be studied. Policy geared towards either sustainability or time use must address issues on an individual level, group level, either in terms of communities, economic sectors, or relative ecosystems and resources of specific physical objects. In particular, time use policy appears to be mostly studied at the individual level. Thus, we are faced with the task of developing first an accurate picture of individual behaviors and needs relative to time use, and then, ideally, take on the task of developing equitable policies.

In addition to this, developing comprehensive policy for communities plays an important role in achieving sustainable outcomes. In the instance of community planning planners and analysts need to integrate academic studies with politics and public management in areas such transportation, building codes, and work schedules. To date there have been some efforts at implementing sustainability strategies in government. For instance, the International County Managers Association has conducted much research in these areas along with coordinating various local efforts such as those in Sarasota County, Florida⁸⁰⁵.

In addition to these areas, if sustainability is to be seriously considered appropriate methodologies and policies must be developed to properly evaluate the efficiency and impact of various products and behaviors.⁸⁰⁶ Any of the aforementioned instances represents a tremendous opportunity. At present the study and application of sustainability is in its relative infancy, and the situation presents us with a setting within which any of the prior instances represents a tremendous opportunity in terms of future research and application. Although empirical questions represent the majority of research relating to sustainability and time use, it is also useful to study the cultural and normative aspects of these topics as well. Much of what influences various societies' sustainability is normative and cultural in nature. Additionally, the empirical work done relative to both time use and sustainability raises a number of normative questions as to what is ethical

⁸⁰⁵ Sarasota County Florida (2009). *Sustainability and Environmental Services*. Retrieved: March, 15, 2009. Website: <http://www.scgov.net/sustainability/default.asp>

⁸⁰⁶ Appendix A. The New Planned Obsolescence.

and how, ideally, society should arrange itself both relative to individual actions and the overall structure of society.

The work done here confirms the basic hypothesis that time use and sustainability are interrelated in a number of ways. It also attempts to advance the role of theory in understanding the relationship among policy, sustainability and time use. In terms of important conclusions and themes that should be taken away from this analysis, the role of structural factors such as the economy, the environment and the role of policy in influencing sustainability and equity in time use are of prime significance. This work highlights the universality and holistic nature of issues relating to sustainability and time use. Also, the analysis makes a relatively convincing case that policy and governance play important roles in achieving a sustainable society. Thus, we can conclude that a society's success or failure at achieving sustainable outcomes is largely a result of a society's desire to achieve such a willingness to be pragmatic. Ultimately, this work has established the ground work for further academic and applied inquiries while demonstrating the structural complexity of issues relating to time use and sustainability.

APPENDIX A

The New Planned Obsolescence

This paper explores how planned obsolescence has developed from an explicit aspect of product design to implicit function of design, marketing and product economics. This “new” planned obsolescence represents an intriguing example of the political economy, of design, marketing and the integration of technology into society. Specifically, this new theory of planned obsolescence relies upon the assumption that products are designed within narrow parameters both with respect to the technical design of the product and its intended market. Although the economic reasoning associated with this behavior possess a degree of validity, especially relative to the economic interests of the manufacturer, this trend can be seen as directly contributing to sub-optimal level of economic, social and environmental functioning when the products in question are considered relative to their greater impact on society. Also, the new planned obsolescence can be seen as representing a challenge to policy both in terms of policies related to the regulation of specific products and in policies directed towards addressing sustainability in various aspects of society. To further comprehend the impact of the new planned obsolescence it is first useful discuss its development relative to traditional theories of planned obsolescence. Once this task is accomplished it is then useful to contextualize the new planned obsolescence in to a greater framework that considers both policy and sustainability. To conclude this paper considers a number of hypothetical policies that might be developed to address problems with the new planned obsolescence. Also, the conclusion attempts to address the political dynamics associated with the social and economic interests involved in this situation.

The development of Planned Obsolescence

The idea of designing products to last a certain period of time and then be inoperable is mostly a product of 20th century industrial marketing engineering. In his book *The Waste Makers*, Vance Packard observed that manufacturers of products have an expressed economic interest in designing a product that will be functional or attractive for only a given period of time. The basic reasoning behind such assumptions is that consumers will come to rely upon a product and thus they will be in continuous need of such products. Therefore, if a product is designed only to last a certain period of time, then manufacturers can have a predictable demand for their goods. Relative to its context in history, planned obsolescence stands in contrast to the production of goods prior to the twentieth century. Prior to the widespread implementation of planned obsolescence in manufacturing, products were designed and produced with both maintenance and durability in mind⁸⁰⁷. There are a few reasons for this. First, the time effort and resources

⁸⁰⁷ Packard, V., (1978). *Waste Makers*. *Simon & Schuster*.

to produce a product by hand were so great that producing anything but the most durable and simple products was economically infeasible. Second, prior to the development of industrialized society, most people did not possess enough disposable income to justify a perpetual market for goods that had limited life spans⁸⁰⁸. Third, prior to industrialization most goods were produced by craftsman whose reputation was directly related to the quality of their wares.⁸⁰⁹

However, with the advent of industrialization these dynamics changed. Incomes for the average individual rose. The complexity of products increased along with the ability to mass produce such products. Also, and most importantly, industrialization created an economic system in which the means of producing products shifted to a more centralized and formalized economy. Thus, the businesses that produced manufactured goods became more removed from the communities that consumed such goods. Also, there developed a strong incentive to maximize profits through the rationalization of production both in terms of product design and labor⁸¹⁰. Although this process can be seen as creating a certain type of efficiency relative to production, industrialization when coupled specific types of incentives can develop in ways that ultimately prove to be counter productive for most of society. Planned obsolescence in many ways represents such a development.

⁸⁰⁸ Pounds, N. J., (1974). *An Economic History of Medieval Europe*. Longman.

⁸⁰⁹ Wolek, F.W., (2004). Organizational Culture, Lessons learned. *Quality Management Journal*, 11(2), 33-41.

⁸¹⁰ Smith, A., Raphael, D. D., (1991). *An Inquiry in to the Nature and Causes of The Wealth of Nations*. Random House.

In its purest theoretical form, planned obsolescence is merely designing a product with certain expectations as to its durability. For instance, it may be only cost effective for both the manufacturer and consumer to produce a light bulb that lasts a certain period of time. However, in its more nefarious manifestation planned obsolescence is the intentional design of a product to be less durable than it can reasonably be for the purpose of maintaining a market for said product.

As most descriptions of planned obsolescence note, there are a number of general approaches that can be applied to limit a product's useful life. The most commonly applied method is to produce a product that has physical features that wear out after a certain period of time⁸¹¹. In addition to this, there is also functional obsolescence and style obsolescence. In the instance of functional obsolescence a product might still be operational however it ceases to be compatible with context it operates in and thus useless. An excellent example of this is computer operating systems. Even though an older operating system might continue to function the introduction of a newer incompatible system effectively renders the older one useless. Relative to style and planned obsolescence, manufacturers routinely change the styles of their product in an attempt to make the older products appear outdated.

As many instances have demonstrated these approaches to planned obsolescence have been applied throughout the world of consumer goods. Nearly every product ranging from razors to houses has been designed with some intentional limitation in

⁸¹¹ Packard, V., (1978). *Waste Makers*. *Simon & Schuster*.

durability in mind. However, these traditional approaches to planned obsolescence fail to address the more systematic influence of both explicit efforts at planned obsolescence along with more nuanced aspects of product design and marketing. With this in mind it is proposed that the “new planned obsolescence” represents a series of intentional moves on the part of manufacturers to design products that lack both durability and flexibility relative to society as a whole. Thus, the new planned obsolescence can be viewed as being both the intentional design of sub-par products but also the design of products for consumption in relatively controlled circumstances where the manufacture continues to effectively control the product’s use even after the consumer has purchased the product.

There are a number of specific methods that manufacturers have used to maintain an element of control over the products they produce. Relative to the notion of the new planned obsolescence, proprietorization of maintenance and design holds a position of prominence. Proprietorization generally is defined as limiting some aspect of a product so that it can only be maintained or is compatible with other produced by the same manufacturer. This limiting of compatibility and maintenance effectively makes it possible for a manufacturer to control their product even after it has been sold to the consumer. In the in instance of the proprietorization of maintenance manufactures design products to be inaccessible by the general public and even by most trained technicians. Two prominent examples of this would be consumer electronics and automobiles. In the instance of electronics devices such as the iPhone have been designed to be inaccessible both in a mechanical capacity (the case requires a special proprietary tool to open it), and the computer program that runs the iPhone are mostly static and cannot be manipulated

with out proprietary access information⁸¹². Finally, the programs that run many electronic devices are often copy writhed such that they can not legally be manipulated. Relative to automobiles a different approach to proprietORIZATION is observable. Most car manufactures intentionally design certain aspects of their vehicles to be accessible only to service personal that possess specially designed tools that can fix specific problems. Although a certain amount of this specialization is the result of the increasing complexity of cars, another element of it can be attributed to the manufacture's desire to limit the maintenance of a vehicle to only manufacturer sanctioned repair facilities. One excellent example of this is the automatic transmission drain plug on Volkswagens built since 1999. The plug which replaces a simple hexagonal head bolt is shaped to fit a special proprietary socket that is not generally available to the public and is relatively expensive⁸¹³. In addition to this, many automobile manufacturers have impeded the ease of vehicle maintenance through doing such things as removing engine and transmission dipsticks, and designing certain aspects of a vehicle to be almost completely inaccessible with out major effort⁸¹⁴. Arguably these design features have a number of both explicit and implicit features. Most manufacturers would argue that such efforts to proprietary their products are done in an effort to ensure that such devices are only maintained by trained service professionals. However, considering that many products limit access to things traditionally have been maintainable, it appears likely that manufacturers also

⁸¹² Swammer, D., (2008). *South Carolina Trial Lawyer Blog*. Retrieved: July, 18, 2008. Website: <http://www.sctriallaw.com/tech-trends-why-is-the-iphone-locked-up.html>

⁸¹³ ECS Tunning (2008). *Volkswagen Drain Plug Tool*. Retrieved: July, 18, 2008. Website: http://www.ecstuning.com/Volkswagen-R32_MKV--3.2/Tools/Hand_Tools/ES8234/

⁸¹⁴ Douglas, F., (2005). *The disappearing dipstick*. Retrieved: July, 15, 2008. Website: http://www.thecarconnection.com/article/1006018_mechanics-tale-the-disappearing-dipstick

desire to create a need for repair services along with systematically limiting the life spans of their product since it is assumed that proprietary maintenance is sold at a premium and second and third owners of such products are unwilling to invest in such services.

Designing a product to adhere to certain use and life cycle expectations represents another prominent aspect of the new planned obsolescence. Although the intentional limiting of a product's life span an applicability has been an aspect of modern design for quite some time now, the level of specificity combined with the sophistication of modern engineering techniques has resulted in the production of hyper specific products that are intended only for very narrow markets and are designed to last only a specific period of time. For instance, consider the development of the market for power tools. Initially, most manufactures offered a single line of tools that were constructed to relatively high standards and were readily maintainable. However, as the market developed manufactures discovered they could produce lower quality goods for the average consumer while selling more durable products to the professional. In addition to this, such devices were designed with a certain expected service life in mind. For instance a power drill intended for home use might be designed for 6 hours of use while the professional equivalent might last 20⁸¹⁵. This segmentation of the market effectively insured that there would be a steady stream of demand for a manufactures product. Although many have made the argument that such specialization in design and functionality is a product of economic necessity combined with a manufacture's to build

⁸¹⁵ Carter, T., (2007). *Professional vs. DIY Power Tools*. Retrieved: June, 16, 2008. Website: http://www.askthebuilder.com/B164_Professional_vs_DIY_Power_Tools.shtml.

cost effective product that meets a certain type of consumer's need, it is equally plausible to make the case that the durability and useful life of such products could be greatly improved for little or no cost.

Another aspect of the hyper specialization of products is the use of materials and design techniques that make it difficult for a product to withstand a changing environment or to be reused. An excellent example of this can be found in modern American residential architecture. There are a number of reasons for this. First, modern houses are often constructed of materials such orientated strand board, and asphalt shingles that have limited lifespan⁸¹⁶. Also, there is little ability to reuse most of the materials modern houses are constructed of when compared with the materials used in older structures (stone brick, lumber etc) finally, most modern residential structures require near constant up keep to prevent them from deteriorating rapidly. When one considers the net effect of such methods of design and construction it becomes evident that the development of such approaches effectively limits the usefulness and lifespan of a product.

Implications

Now that some understanding of the state of contemporary planned obsolescence has been established, it is useful to explore the implications of the new planned obsolescence both relative to the economic theory that motivates such design trends,

⁸¹⁶ Ferguson, M. E., (1997). *Build It Right! What to Look for in Your New Home*. Home Use Press.

along with the greater societal and environmental implications of such approaches to product design and marketing.

The basic economic logic of planned obsolescence is rooted in a manufacturer, or seller orientated model of economic utility. As most theories of planned obsolescence state it is in the manufacturer's interest to produce a product that maximizes profit while being only of a minimum of quality both relative to performance of the product and its expected lifespan⁸¹⁷. Thus manufacturers are motivated to create the lowest quality product with the shortest life span that the public is willing to accept. In addition to this, the new planned obsolescence has elaborated on this basic concept through the development of highly specialized goods, proprietORIZATION and target consumer audiences.

In many senses the basic assumptions of the economics of planned obsolescence represent a bastardization of economic theory. On a general level planned obsolescence makes no assumption of an equality of information or rationality between producers and consumers⁸¹⁸. Also, planned obsolescence makes no assumption about the long term consequences of producing sub-par products on profits. Relative to the first criticism there are two primary reasons why the implementation of planned obsolescence can not be considered to follow a feasible economic logic relative to the consumer. First, one can

⁸¹⁷ Waldman, M., (1993). A New Perspective on Planned Obsolescence. *The Quarterly Journal of Economics*, 108(1), 273-283.

⁸¹⁸ Havlenaad, W. J., Holbrook, F., (1986). The Varieties of Consumption Experience: Comparing Two Typologies of Emotion in Consumer Behavior. *Journal of Consumer Research*, 13(3), 394.

make the case that if consumers were acting rationally in their consumption of such goods, it is reasonable to assume that the consumer is aware of the technical details of the product and thus making decisions about consumption based upon such information. In reality there is a significant body of research that suggests consumers mostly consider emotional motivations in purchasing goods⁸¹⁹. Second, it is possible to make a similar case relative to consumer's use of a cost benefit analysis relative to their decision to consume such products. It appears unlikely that most consumers make any type of deliberate calculation as to the balance between product quality cost and durability⁸²⁰. Third, we must question whether consumers have a viable choice relative to consumer goods that are intentionally deficient versus ones that maximize durability. Considering the constraints placed upon consumers based upon the viability of products and the ubiquity of planned obsolescence, to call a contemporary consumer market one of true choice may be somewhat questionable. It is reasonable to assume that if most consumers exhibited such behavior that they would show a strong preference for goods that attempted to maximize durability while existing within certain price limits.

Along these lines it is also possible to make the case that the economic logic of planned obsolescence often fails to provide the desired effects for the manufacturer of a product. Although consumers often buy goods that are limited by planned obsolescence,

⁸¹⁹ Bhat, S., Reddy, S.K., (1998). Symbolic and functional positioning of brands. *Journal of Consumer Marketing*, 15(1), 32-43.

⁸²⁰ Gilboa, I., Schmeidler, D., (1993). *Case Based Consumer Theory*. Discussion Paper, No 1025, Northwestern University, Center for Mathematical Studies in Economics and Management Science.

either out of lack of other options or ignorance, it is commonly accepted⁸²¹ that businesses that consistently produce goods only of the most minimal standards of acceptability often lose market share due to a loss in reputation. An excellent example of this can be found in the decline of the American auto industry when higher quality imports were introduced into the American market. However, destructive this practice may prove to be, since consumer behavior is not perfectly rational relative to assessing product quality, manufacturers have a perpetual incentive to endorse such practices even though it may eventually lead to failure.

In addition to questionable economic logic of planned obsolescence in consumers it is often argued⁸²² that planned obsolescence is beneficial to society as a whole through providing a constant demand for manufactured goods while ensuring obsolete or inefficient older products are eliminated from the market. Although there is some element of truth to these statements one can also make the case that such positions are more of a form of economic pseudo logic which fails to consider the greater impact of such behaviors of society and the environment. With this general criticism in mind it would be useful to further discuss the effects of planned obsolescence, especially the conglomeration of factors that can be considered the new planned obsolescence, on various aspects of society. However, before we can understand the impact of planned obsolescence of society it is first necessary to discuss some background relative to the assessment of sustainability.

⁸²¹ To substantiate this point one need only consider the competitive disadvantage experienced by American automobile manufacturers.

⁸²² Slade, G., (2007). *Made to break: Technology and Planned Obsolescence in America*. Harvard University Press.

There two prominent aspects of sustainability those are applicable to this discussion. The first is the idea that true sustainability occurs within the context of an entire system rather than relative to relative one aspect of a system. Although many things have primary or direct effects on one aspect of a social, economic, or environmental system, it is also the case that these activities inevitably have secondary repercussions through out the system. In the instance of planned obsolescence the primary focus of analysis usually relates to the economic dimensions of the situation. However, planned obsolescence also has social and economic effects. The second aspect of sustainability theory we can use in an analysis of the impact of planned obsolescence on society, is the notion of total cost accounting. Total cost accounting is similar to the idea of incorporating the broad effects of a certain activity on the sustainability of a system⁸²³. More specifically, this idea of accounting for the total cost of an activity can be related both to the relative and absolute impact of that activity. Relative to an assessment of planned obsolescence we can concern ourselves both with the enumerable effects of such activities on the present system (that is relative effects) along with assessing the impact of planned obsolescence relative to a theoretical system that is designed to maximize sustainability and equity. The latter can be seen as representing an absolutist measure of impact since it compares the present reality to a plausible hypothetical situation.

⁸²³ Russell, W. G., Skalak, S. L., Miller, G., (1994). Environmental cost accounting: the bottom line for environmental quality management. *Environmental Quality Management*, 3(3), 255 -268.

One of the more direct negative effects of planned obsolescence is on the consumer of such goods. We find that planned obsolescence and, in particular the multi layered new planned obsolescence has created a situation of significant economic and social consequences. In terms of the economic effects of planned obsolescence on the consumer, it is possible to hypothesize that planned obsolescence creates a situation of dependence and waste relative to the consumer. Considering that planned obsolescence entails creating products that are known to fail, it is reasonable to presume that such products mandate consumers rely on manufactures to periodically sell them products to replace the ones that have ceased functioning. Also, relative to the idea of new planned obsolescence consumers must depend on the manufacturer or related industries to maintain their products since they have either been proprietORIZED or designed to require constant maintenance. In addition to this, the stylistic or lifestyle specific aspect of product design effectively mandated that individuals be perpetually consuming goods to meet the social requirements of their group. In any of these three instances we find that the new planned obsolescence mandates perpetual inputs from the consumer either as a consequence of issues of style or mechanical functioning. In any of these instances the net effect of such patterns on the individual is that they are required to expend more economic resources than technically is necessary to exist at a certain standard of living. Although it is difficult to conceive of modern consumerist lifestyle with out planned obsolescence one could only speculate on the tremendous amount of money or time saved by consumers if goods were made more durable and standards of fashion more constant.

The social implications of the new planned obsolescence parallel this logic. One could make the case that planned obsolescence, especially relative to stylistic aspects of goods, has contributed to the creation of set of social values that rewards the conformist and perpetual consumption of good and little else. Relative to the idea of the new planned obsolescence, we can relate the hyper sophisticated and all encompassing nature of product design to Herbert Marcuse's⁸²⁴ theory of the one dimensional man. Marcuse in his existentialist critique of modern consumerist society makes the case that consumerism causes a narrowing in the definition of value to only predefined criteria such as manufactured products. This narrowing, especially relative to the idea of creating both economic and social dependence upon certain goods, can be seen as have extremely negative consequences for the individual. Specially, if we view the effects of the constant economic activity required to support the consumption patterns mandated by planned obsolescence the inequity of such systems becomes apparent. Thus, we can relate such things as over work, divorce, social isolation and various social-psychological problems experienced by individuals to the mandates of system which perpetuate planned obsolescence. In either the social or economic realms the effects of planned obsolescence on the individual can be seen as mostly negative. Although individuals do possess some choices relative their involvement in the economy the preponderance choices available to most people mandate that they are perpetually tied to the economic and social mandates of planned obsolescence.

⁸²⁴ Marcuse, H., (1964). *One-Dimensional Man: Studies in Ideology of Advanced Industrial Society*. Beacon Press.

On the societal level the new planned obsolescence has similar effect as it does with individuals. Specifically, the new planned obsolescence can be seen as contributing an inefficient economic system that also produces social, technological and environmental side effects. Although the economics of the new planned obsolescence and individuals is more explicit in terms of its cost to individuals, the effects of planned obsolescence on society are less direct. In particular if we view the inputs necessary to maintain a consumption pattern that is based upon planned obsolescence, relative to the potential allocation of those resources elsewhere in the economy, it becomes evident that the cost of perpetuating a system based upon planned obsolescence is quite significant. Although exact data relating to this proposition is difficult to come by the absolute economic cost of planned obsolescence can be demonstrated through the following thought experiment. Consider for a moment the resources required to the manufacture, distribute and purchase one item with a limited lifespan, then consider what would occur if such a product were designed to be significantly more durable or repairable. Let's assume that this new product lasted three times as long, did not require proprietorized maintenance and was not subject to the whim of artificial style manipulation. In the instance in consideration the overall cost of such an item would be one third that of the item that was designed using the principals of planned obsolescence. In addition to the cost associated with the product itself it is also possible to assert that planned obsolescence has a net negative effect on the entire economy. Using the hypothetical example discussed above, the 66% savings gained through not having to replace a product that breaks prematurely could then be used to invest in some other type of

economic activity such as raising the standard of living, investing or having more discretionary time. In any instance one can conceive of a much more efficient economic system if planned obsolescence were eliminated. Also, if we weight the merits of this ideal system versus some aspect of the one American society is presently involved in, the inefficiencies of the present system become strikingly apparent. It appears likely that much of our economy is devoted to the rat race of continuously replacing and maintaining the same products rather than actually improving the standard of living and financial solvency of the populous.

In addition to the economic deficiencies caused by planned obsolescence on society we must also consider the environmental repercussions of such activities. There has been much commentary about how products that incorporate planned obsolescence are wasteful and have a negative environmental impact because of their built in inefficiencies⁸²⁵. Most of the environmental criticisms of planned obsolescence focus on the waste created by products that are prematurely obsolete along with the resources required to create such product. However, if we view planned obsolescence's impact in broader terms it becomes apparent that the environmental impact of planned obsolescence is most likely far greater than initially conceived. For instance, if we consider how the resources used to produce a product that fails prematurely could be saved and used towards other ends, one could make the case that negative effects of such practices are effectively multiplied when viewed relative to the entire system. Thus, a pound of coal burned to produce a product that last only half as long as it should equals

⁸²⁵ Cooper, T., (1999). Creating an economic infrastructure for sustainable product design. *The journal of sustainable product design*, 8, January.

an additional pound of coal that must be expended in some other part of the economy. Also, on a more theoretical level no part of the new planned obsolescence makes any substantive attempt to create a sustainable balance between the production of goods and needs of the environment. Even when products are produced to be “efficient” or superficially environmental since their design is incorporates some element of planned obsolescence such products are inherently unenvironmental and inefficient. An excellent example of this would be hybrid automobiles. Although hybrids have certain advantages relative to fuel efficiency if one considers their environmental and social impact in broader terms their infeasibility becomes apparent. Specifically, a hybrid embodies a number of prominent aspects of the new planned obsolescence. First, it is designed to last only a certain period of time with out expensive proprietary maintenance⁸²⁶. Second, it value at the time of such maintenance is less than the cost of repair. Thus, hybrids are not compatible with the secondary and tertiary markets that many low income Americans depend upon for personal transport. Third, the level of complexity of a hybrid makes it nearly impossible to maintain by any except a manufacturer trained technician. Forth, the target audience of hybrids is general typified as being environmentally conscious individuals who are willing to pay a premium for an automobile with an environmentally friendly image⁸²⁷. When we consider how these four factors can contribute to a product that is resource intensive, socially incompatible, and relatively short lived when compared with conventional cars the net affect any claims of efficiency or

⁸²⁶ CNW Research (2007). *Dust to Dust' Automotive Energy Report*. Retrieved: June, 10, 2007. Website: <http://cnwmr.com/nss-folder/automotiveenergy>.

⁸²⁷Smith, L., (May, 19, 2008). Eco-friendly claims for ‘hybrid’ cars dismissed as gimmickry. *The Times*. Retrieved: June, 16, 2008. Website: www.climateactionprogramme.org/news/article/eco_friendly_claims_for_hybrid_cars_dismissed_as_gimmickry/

environmentalism is effectively negated. As this and other examples depict a product that adheres to the ideology of planned obsolescence can claim a narrow or limited amount of efficiency or environmentalism however such claims tend to neglect the forest for the trees.

The new planned obsolescence can also be seen as contributing to a certain pattern of technological development. One can view the development and progress of technological innovation as being complementary and self complicating relative to planned obsolescence. As some of the examples given above depict design that emphasizes the goal of the new planned obsolescence effectively limit the performance of such products in terms of their functionality, maintainability or durability. Considering how these products will likely be integrated into the social structure, one could make the case that planned obsolescence effectively creates social structures which result in the development of similar technologies. Therefore, products designed to not to be maintained will result in a social structure that does not support repairing such goods. Alternatively a product designed to last only one year will result in an implicate expectation on the part of consumer that such good should only last one year. Under such conditions the development of technology becomes directed not at improving the product in a truly tangible way but instead designing products that will meet the adverse system of incentives mandated by planned obsolescence. Such a trend can be seen as being counter productive to true progress and efficiency. Much like planned obsolescence's effects on the economy, planned obsolescence can be seen as having a similar hindering effect on technological progress.

Finally, we should consider how the new planned obsolescence has affected our social norms. As noted above planned obsolescence artificially constrains individuals and societies economic and technological options. The general effect of this constraint can be viewed negatively when the broad implications of the situation are considered. The social consequences of the new planned obsolescence can be viewed in a similar negative light. However, the social effects of planned obsolescence are rooted a system of normative and economic values that neglect perspectives which value efficiency, sustainability and social consciousness. In general we can view the social ramifications of planned obsolescence as coinciding with the greater social forces of consumerism and materialism. As many social commentators have noted a materialist/consumerist society focuses primarily of monetary and status related considerations. Planned obsolescence in many senses represents a more specific manifestation of such thinking. Specifically, planned obsolescence places value only on the economics and the superficial qualities of many products while neglecting the more fundamental aspects of such things. Ultimately, the new planned obsolescence can be seen as helping to create a society that does not value pragmatism, efficiency or craftsman ship but rather places an emphasis on ignorance, superficialities and a self centered worldview.

Aside from values we must also question how planned obsolescence affects society's ability to adapt to adverse situations. In particular is the issue of resiliency both in terms of social institutions and technological flexibility. Arguably, planned obsolescence contributes to neither. Relative to social institutions as noted above the

wide spread acceptance of planned obsolescence in products results in an willfully ignorant populace that is dependant upon complex social and economic systems for their day to day functioning. In terms of the technical aspects of this situation it is relatively easy to make the case that planned obsolescence in products makes society extremely vulnerable to environmental or social disturbance. To further understand what is implied by this statement, consider the following example. If American society were to slip into an economic situation similar to the great depression most people could not afford to replace or repair products that have failed due to some type of planned obsolescence. Thus, houses would disintegrate, computers fail and automobiles breakdown beyond the point of repair. In any of these instances most people would be left with little recourse to deal with such situations since the products in question were not designed with durability, maintenance or flexibility of use in mind. Although an extreme example it highlights precarious positions that planned obsolescence has place modern society in. As history teaches us⁸²⁸ societies that overspecialize and neglect to address common sense issues of planning and resilience often fail catastrophically as a result of their lack of foresight.

Implications for Policy

Now that some understanding of the contemporary dilemmas of the new planned obsolescence and its relationship to sustainability has been outlined, it would be useful to discuss the ramifications of this situation relative to public policy. An analysis of policy's role relative to these issues mostly consists of addressing two separate issues. First, is the

⁸²⁸ Diamond, J., (2004). *Collapse*. Viking Adult.

matter of how policy has systematically contributed to the development of an economic and social system that is dependant upon planned obsolescence. Second, is the issue of how policy can address the negative aspects of planned obsolescence while stile maintaining a degree of equity for all actors involved.

The development of planned obsolescence relative to policy can be viewed as occurring either in a facilitative or restrictive context. Generally speaking, we find that policy related to the macro economic environments with in which planned obsolescence has developed has implicitly facilitated planned obsolescence while certain more direct polices such as consumer protection laws have hindered its progress. Aside from the differing scopes of these policies they can be seen as representing conflicting value systems. On one hand most economic policy is geared towards maximizing economic growth and a certain conceptualization of “productivity”. While on the other hand many consumer protection laws are geared towards assuring a certain minimum of quality in a product. Although quality standards for products along with other types of regulation have achieved a certain degree of success, it appears likely that the prevailing economic policies have created an environment that is fundamentally in conflict with producing truly durable products while maintaining a sustainable society. To justify this ascertain we need only examine a few typical policies from the above mentioned areas.

One method of documenting economic policy is to look at the indicators used to measure economic progress. Considering that GPD, GDP growth, income and consumer spending have been considered primary measures of economic progress for the past 60

years it becomes understandable how planned obsolescence has flourished in society. None of the above mentioned indicators gauge the overall efficiency of an economy or its impact or social or environmental conditions. So long as abstract economic progress is being made it is assumed that an economy is being functional. However, as proponents of the Genuine Progress Index have noted when one compares these indicators to more through measures such as the GPI index it is evident that traditional measures of economic progress do a woefully inadequate job of measuring tangible progress⁸²⁹. However, since these traditional measures are the ones used to evaluate the success of various policies, many policies that may not address the actual functioning of an economy get a free pass. Over time the perceivable effect of this relationship between indicators and policy that economies develop in ways to satisfy the measure of progress rather than develop in ways that address more systematic issues in an economy. Thus, indicators such as consumer expenditures do not note whether a consumer is spending his money on high quality durable goods or spending money replacing or repairing prematurely dysfunctional products. The relationship between indicators of economic progress and subsequent policy is not only evident on the scale of an entire economy but is also evident in the system of incentives that govern business. Since net profits is considered the primary measure of business success, there is little incentive for businesses to maintain equity in other areas above the bare minimum required by the

⁸²⁹ Redefining Progress (1999). *"Gross production vs genuine progress"*. Excerpt from *the Genuine Progress Indicator: Summary of Data and Methodology*. *Redefining Progress*. Retrieved: July, 16, 2007. Website: <http://www.rprogress.org/publications/index.htm>

market or via the law. Thus, as research on planned obsolescence has shown⁸³⁰ businesses have strong incentive to incorporate various forms of planned obsolescence into products on a level that is beyond what can be socially justified.

In addition to the questionable relationship that has developed between indicators of economic progress and various forms of policy we must also view the development of policy relative to the social and cultural values of contemporary society. It is reasonable to presume that most societies have a strong propensity to develop policy based upon prevailing values of the group in question. Policy related to planned obsolescence substantiates this assertion. In the instances in question social values such as materialism or consumerism can be seen as creating a certain set of norms that subsequently direct the development of policy. Neither contemporary consumerism nor materialism places a tremendous amount of value on efficiency, equity or quality⁸³¹. Thus, policy is not developed to cater to these objectives. Even relative to the areas where policy has addressed some aspects of planned obsolescence, such as in product safety and advertizing regulation, one generally finds that these values are absent from these policies. One excellent example of this is the found in the regulation of automobile manufacturers. Starting in the late 1960's consumer advocates such a Ralph Nader began lobbying the federal government for greater safety and reliability in automobiles. Also, during this time various environmental groups advocated an increase in automotive fuel efficiency and reduced emissions. Although the policies that resulted from such

⁸³⁰ Waldman, M., (1993). A New Perspective on Planned Obsolescence. *The Quarterly Journal of Economics*, 108(1), 273-283.

⁸³¹ Barber, B. R., (2008). *Consumed: How Markets Corrupt Children, Infantilize Adults, and Swallow Citizens Whole*. W. W. Norton.

legislative activities have improved certain aspects of the quality of automobiles they have failed to systematically address many of the design related issues that ultimately lead to an efficient automobile. For instance, policy related to the safety or emissions of automobiles fails to mandate a certain level of reparability while limiting the ability of manufacturers to proprietorize the maintenance of their products. The perceivable effect of this inadequacy of policy has been to create products that are so difficult and expensive to maintain that they are neglected and fail prematurely. Ultimately, we can conclude that although consumer protections have provided a certain amount of protection from the most adverse aspects of planned obsolescence and other adversely motivated designs methods these policies have failed to address the ever increasingly sophisticated methodologies used by manufacturers to ensure their products are somehow suboptimal.

Considering the pervasiveness and increasingly sophisticated nature of planned obsolescence along with the systematic failure of policy's ability to meaningfully address the issues created by it, we are confronted with complex question of how can policy deal with such issues. To accurately answer such questions we must address how the structure of policy on differing levels can address both general mentalities while also delving into the highly technical world of product design.

On the level of specific policies geared towards limiting the adverse effects of the various aspects of the new planned obsolescence in products it is necessary to develop policy the limits the ability of manufacturers to produce goods that are some how

suboptimal in their design while simultaneously preventing adverse effects for manufacturers and consumers. To achieve this goal, policy must be developed to address each separate aspect how design has been used to achieve the goal of planned obsolescence. As mentioned before, the new planned obsolescence does not merely consist of designing products with a certain life span in mind, but also includes controlling the maintenance of a product through proprietORIZATION of components, designing products to need constant maintenance, along with producing goods that are highly constrained in terms of their functionality. Although there are a diversity approaches to use for each of these instances, in general policy must deal with a specific aspect of product design while maintaining a certain level transparency. To help understand how effective policy might be developed to deal with these issues it useful to outline a few hypothetical policies.

Relative to the matter of product quality and durability one possible approach to dealing with this issue is to establish a federal agency similar to the Consumer Products Safety Commission⁸³² to assess the performance of good relative to one another and relative to other standards. Such an agency might set general guidelines as to the minimum quality standards for a product and the subsequently evaluate such goods. From a broader policy perspective one might take the position that such an organization is necessary since it brings technical knowledge and professional evaluation to a situation in

⁸³² Consumer Products Safety Commission (2008). Retrieved: May, 5, 2008. Website: CPSC.gov.

which does not inherently provide such. As many have noted⁸³³ one of the fundamental aspects of planned obsolescence is that consumers possess less information and technical understanding about products than manufacturers do. Since it is not reasonable to assume that consumers become experts in understanding the design and function of every product that they consume it seems reasonable that a government organization be developed to systematically evaluate products.

Dealing with proprietORIZATION of maintenance and construction require structures similar to that of addressing issues of product durability. Specifically, it is necessary for a third party to develop standards and evaluate products relative to their ability to be maintained. Thus, a policy geared towards addressing the issue of proprietORIZATION would most likely entail the creation of a federal agency or department geared towards such work. On a technical level policy related to this topic must address the issue of what should be uniform in products and what should be left the manufacturers design requirements. Arguably, each product must be evaluated on a per instance basis. The need for standardization in engineering is something that is not new considering that such situations were faced relative to measurement systems and the features of common engineered objects such as the pitch and size of various fastener threads. In the instance of proprietORIZED goods the product must be evaluated relative to its likely environment after the product is sold. If it appear likely that a product is designed exclusive in terms of its routine maintenance and operation that some type of action on the part of a regulatory body would be necessary. For instance, as noted above many automobile manufactures

⁸³³ Waldman, M., (1993). A New Perspective on Planned Obsolescence. *The Quarterly Journal of Economics*, 108(1), 273-283.

have removed the oil dipstick from the transmissions of their vehicles. Arguably such practices would be indicative of behavior requiring intervention since checking the transmission fluid level is a frequent and routine maintenance procedure. However, there are other instances where proprietORIZATION is merely a logical consequence of design. For instance a complex machine such as tractor might require a special tool to repair a part that is not routinely maintained, and if such a part were not designed in such a manner it would be unreliable. Ultimately, a certain economic calculus is necessary to evaluate products relative to the needs of the public, their performance and requirements of the manufactures. In addition to this it appear likely that policy makers must develop new standards for consistency in design as the nature of products evolve and as manufacturers attempt to influence the functionality of their products.

The third area that policy can address relative to the new planned obsolescence relates the broad issue of functionality in consumer products. As mentioned before functionality relates both to the intended use of a product, its target audience and potential uses outside of its intended use. Aside from this, functionality is dictated by two main factors one is the marketing of a product while the second relates to the actual design of the product. Relative to marketing, it is reasonable to assume that formal policy has little or no place dictating issues of taste and preference. However, it more likely that policy can be used to guide the design of product so that they are more versatile and can be used in a number of situations. Specially, policy geared towards addressing the issue of functionality might consider secondary and tertiary markets for a product. Such a policy might promote reuse of products through ensuring their ease of maintenance and

durability. Thus such a policy achieves a number of ends. First, it makes the product more efficient since it has a longer useable life. Second, more individuals benefit from the production of such goods. Third, by expanding the functionality of a product economic and physical resources can be directed towards other ends. Aside from policy geared towards enabling the development of secondary and tertiary markets for products functionality related policy might also address issues relating to the versatility of a product and its components. An example of such would be many contemporary building materials such as orientated strand board or asphalt shingles. In either instance, these goods are designed only to be used once for a set period of time. This is opposed to more traditional material such as stone or wood which can be reused. A policy that addresses the issue of versatility might consider standards for individual products that enables such products to be put towards difference uses. Although difficult to apply to all products such policy could lead to massive gains in efficiency since implementation of versatile products would eliminate the need for new products and certain categories of products in use today. In either the instance, of secondary markets or versatile products policy has some perceivable role. However, it must be noted that policy also possesses limitations relative to these activities since much of what dictates such consumption patterns are the economics of various systems. In general we can make the case that when systems are strained by shortages in resources or capital; markets develop to use what ever resource is available. For instance, it is common practice in third world countries for large numbers of people to devote their work to sorting through others trash⁸³⁴. Alternatively, many lower income people in the developed world rely upon used automobiles for their

⁸³⁴ Bromly, R. J. , Gerry, C., (1979). *Casual Work and Poverty in Third World Cities*, University of Michigan Press.

transportation⁸³⁵. Although such efficiency is often indicative of economic inequities such activities result in a high level of material efficiency. One could make the case that policy could be used to create situations which artificially facility such efficiency without mandating the negative social and economic aspects of existing circumstances.

Policy that addresses planned obsolescence not only needs to address specific technical issues relating to planned obsolescence but also broader trends that dictate various dynamics of the situation. Thus, policy must fit in to a greater conceptual framework that systematically addresses issues of sustainability through out society. It is imperative at this level of analysis that all relevant policy in society be structured to address pertinent issues in a similar fashion. One can make the case that any individual policy will be ineffective at addressing issue if other policy is not structured in a manner that is congruent with such policy. With this in mind is necessary to out line what is required in theory to further the goals of specific policies relative to sustainability. There are a few key features of sustainability are relabeling to this discussion. First, is the issue of comprehensive policy that fully accounts for the impact of individual activities. Relative to planned obsolescence arguably its greatest flaw relative to the sustainability is that it focuses merely on the economics of products relative to the manufacturers rather than emphasizing the need for social, economic and environmental equity. Thus, a useful policy that addresses the short comings of planned obsolescence must weight and balance the needs of actors involved in a situation. Aside from an integrative approach that

⁸³⁵ Mann, E., Ramsey, K., Lott-Holand, B., Ray, G., (2008). *An Environmental Justice Strategy for Urban Transportation, Urban Habitat*. Retrieved: July, 12, 2008. Website: <http://www.urbanhabitat.org/node/305>.

assesses all relevant consequences of planned obsolescence; effective policy must also strive to create absolute standards for progress. As noted before there are essentially two standards for assessing performance, relative and absolute. Although a relative standard for performance is the most convenient standard to use when assessing products, it often is that case that entire categories of products are suboptimal relative to their potential durability and overall performance. With this in mind policy must attempt to create structures both within government and society at large can ascertain a more absolute standard of efficiency. On a technical level such assessment might consist of a government agency geared towards developing absolute measures of product durability. Also, it is likely if the public develops enough awareness of the deficiencies of products that they will likely demand some type of private, third party certain, similar to the LED building certifications.⁸³⁶ Ultimately, the situation relative to planned obsolescence, policy and sustainability highlights the deficiencies in conventional methods of assessing impact and role of policy in mitigating behaviors that fail to serve most individuals and society at large.

⁸³⁶ U.S. Green Building Council (2007). *LEED Building Certification*. Retrieved: July, 16, 2007. Website: <http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>

APPENDIX B

Regional Colonialism: The Political Economy of Regional Migration in the Pacific

Northwest.

This paper explores the effects of inter and intra regional migration in the Pacific Northwest. It has been observed that the migration of certain groups in to various areas in the Northwest has altered the economic, social and political composition of these areas. It is hypothesized that these changes can be described as representing a form of colonialism in which the migrants to a region or certain groups within a region effectively alter the social, economic and political dynamics of an area through either their numbers or, through a process of gentrification that displaces existing residents. In addition to verifying the hypothesis that this migration can be described using the idea of colonialism, the likely long term effects of such migration on the region are also explored.

In recent decades many communities within the Pacific Northwest have experienced changes relative to the demographics of their inhabitants and character of their communities as whole. These changes have occurred both with in urban and rural settings. The trends observed can be typified as resulting from either gentrification, migration or a combination of both. Relative to gentrification, in most instances the observed changes have leaned towards higher costs of living and more exclusivity relative composition and function of the community. Depending upon the context, other defining parameters tend to vary based upon the specific area in question. For instance, in urban areas gentrification tends to occur in the context of professionals and higher income individuals displacing working class people and various ethnic groups⁸³⁷. However, in the instance of rural gentrification it has been commonly observed that gentrification occurs mostly as a consequence of wealthy amenity seekers displacing rural residents in the search for vacation properties⁸³⁸. Regardless of the specifics of any given situation, it appears likely that in areas where gentrification occurs, that not only is there a process of economic and social redefinition but also there is a redefinition of

⁸³⁷ Glass. R. (1964). *London: aspects of change*. MacGibbon & Kee.

⁸³⁸ Housing Assistance Council (2005). *They Paved Paradise... Gentrification In Rural Communities*. Retrieved, August, 19, 2008. Website: <http://www.ruralhome.org/manager/uploads/Gentrification.pdf>

power and values by the gentrifying class⁸³⁹. Additionally, various other trends can be attributed to the effects of migration from other areas within the Northwest or other regions. This process of redefinition in terms of power structures along with values can be described as representing a form of colonialism. Although the traditional understanding of colonialism focuses primary on topics of international relations and comparative politics, the basic concept of colonialism, and in particular dependency theory⁸⁴⁰, is readily applicable to the situation in question⁸⁴¹. Specifically, we can view the colonial power as being the group gentrifying and area while other inhabitants represent the indigenous group being “colonized”. With this basic concept in mind we can then understand various dynamics that have resulted from both migration and gentrification through out the Pacific Northwest. It is the primarily goal of this work to outline the general trends of what has occurred within various areas of the Northwest in terms of gentrification and migration. Once some understanding of what has occurred has been outlined an analysis of various sources of information is presented to substantiate the claim that gentrification and regional migration represents a form of colonialism. In addition to this, it is useful to engage in some discussion about the future of the region in terms of likely dynamics and policy.

Regional Colonialism in the Pacific Northwest

⁸³⁹ Atkinson, Rowland (2005). The evidence on the impact of gentrification: new lessons for the urban renaissance? *European Journal of Housing Policy*, 4(1), 107–131.

⁸⁴⁰ Amin S. (1976). *Unequal Development: An Essay on the Social Formations of Peripheral Capitalism*. New York: Monthly Review Press.

⁸⁴¹ Larrianm J. (1989). *Theories of Colonialism*. Polity Press.

In the later decades of the 20th century various areas within the Pacific Northwest have migration and other demographic changes that have altered the structure these regions both relative to the population and various aspects of their collective identity⁸⁴². In general, we can typify these changes as occurring within three basic frameworks: Urban gentrification, rural gentrification and, intra or inter regional migration which results in gentrification. Although the circumstances of each instance differ in terms of the actors involved and the process of gentrification, all three instances are fundamentally composed of one group of individuals with more resources than the existing population entering an area and using their resources to redefine the values of the area and subsequently marginalize or exclude the existing population.

The literature on both gentrification and colonialism provides a theoretical basis for an understanding of dynamics observed through out the Northwest. Although theories of gentrification and colonialism are distinct areas of study, they share much in common since both attempt to address the issue of what occurs when one group possesses disproportionate amounts of resources and authority relative to another group. On a higher level of sociological theory both the study of gentrification⁸⁴³ and colonialism⁸⁴⁴ are rooted in conflict theory and other class based analysis of social behavior. Although, conflict and other class based theories hold a position of prominence in understanding the topics at hand, we should not rush towards excluding other methodological approaches to

⁸⁴² Taylor, J., E. III., (2004). The Many Lives of the New West. *The Western Historical Quarterly*. 35(2).

⁸⁴³ Smith, N., (1996). *The New Urban Frontier: Gentrification and the Revanchist City*. Routledge.

⁸⁴⁴ Groening, S., (2004). Marxism, Modernity, and Postcolonial Studies. *Cultural Critique*, 57, 191-194.

our analysis. In particular economic or resource based analysis are particularly well suited for assessing the tangible impact of these processes on communities. Although class based analysis might answer questions of why communities have redefined what they consider to be important relative to values, an analysis of the economic functioning of community can reveal the impact of such forces on the economic standing of individuals and the community as a whole. For instance, using some type of economic analysis we might be able to calculate the economic impact of converting a rural community from one that was based upon the production of natural resources to one based upon recreation and vacation properties. Additionally, an analysis of physical resources of a community can reveal the environmental and social impact of gentrification on a community. In any of the instances in question, it is necessary to cultivate a comprehensive understanding these situations both relative to intangibles such as social values and culture in addition to the economic consequences of the situation.

Urban Gentrification

Urban gentrification is the most widely documented and understood form of gentrification. The field has developed from its origins in late 1970's when it was observed that various economically depressed urban areas were being populated by young urbanites who in turn were replaced with highly paid professionals.⁸⁴⁵ As most accounts note, the original low income and minority inhabitants of such areas were

⁸⁴⁵ Smith, N., (1996). *The New Urban Frontier: Gentrification and the Revanchist City*. Routledge. Wyly, E., Hammel, D., (1998). Modeling the Context and Contingency of Gentrification. *Journal of Urban Affairs*, 20(3), 303-326.

displaced by such groups since they could not afford to compete relative to rent and the overall cost of living. As a number of studies have noted when an urban area becomes gentrified the amenities associated with such areas change to cater to the population that is gentrifying⁸⁴⁶. Thus, if the original population is not displaced economically by an increase in the cost of living, there are additional cultural motivations to promote the non-gentrifying class to leave.

In addition to these basic undercurrents there are also a number of other dynamics that are applicable to urban gentrification within the Pacific Northwest. One instance in particular is a certain set of values that favor and are promoted by the class of individuals most likely to gain from the process of gentrification⁸⁴⁷. Most prominently amongst these belief systems is the notion of the creative class and its role in contemporary urban life. The idea of the creative class was originally developed by Richard Florida⁸⁴⁸ as a method describing what conditions are necessary for economic and cultural growth in a post industrial urban economy. Florida proposed that the driving force behind progress in contemporary urban areas is a group of young, professional and culturally enlightened individuals known as the creative class. People such as artists, homosexuals, members of technology and other “new economy” and knowledge based professions compose most of the creative class. Florida takes the position that policy must cater to these groups if a city

⁸⁴⁶ Smith, N., (1996). *The New Urban Frontier: Gentrification and the Revanchist City*. Routledge. Hamilton, S., (2005). *The Matter of Amenities and Amenities that Matter*. University of Washington.

⁸⁴⁷ Aktinson, R., (2004). The hidden costs of gentrification: Displacement in central London. *Journal of Housing and the Built Environment*, 15(4).

⁸⁴⁸ Florida, R., (2005). *Cities and the Creative Class*. Routledge.

to become economically and intellectually relevant. As many observers⁸⁴⁹ have noted Florida and others renditions of the creative class both facilitate gentrification while excluding entire segments of the urban population such the poor, minorities and members of the traditional working class. Ultimately, the creative class's rendition of a 21st century city is one that is almost exclusively focused on the upper middle class and artistic elite.

Relative to how theories of urban gentrification apply to the Pacific Northwest both Portland and Seattle provide excellent examples of urban gentrification. On an economic level we find that we find gentrification is most apparent in the cost of housing. As housing affordability statistics from the National Association of Realtors allude housing both in the Seattle and Portland area is mostly out of reach of lower income people with the median house price costing 31% and 28% of the median income respectively⁸⁵⁰. Relative to other city's level of housing affordability Seattle and Portland rank 39th and 31st out of 50 major U.S. cities surveyed⁸⁵¹. Also along these lines, many observers have noted the displacement various urban minorities such as blacks from neighbor hoods they have traditionally occupied⁸⁵². In addition to this, the political and social environment in both these cities has grown to reflect the power of the gentrifying

⁸⁴⁹ Peck, J., (2005). Struggling with the Creative Class. *International Journal of Urban and Rural Research*, 29(4), 740-770.

⁸⁵⁰ National Association of Realtors (2007). Values for major urban areas range from 11.4% for Detroit, MI, to 63.5% for Los Angeles CA.

⁸⁵¹ Sustainable Circles Corp (2008). *Rankings*. Retrieved: August, 18, 2008. Website: <http://www.sustainlane.com/us-city-rankings/categories/housing-affordability>

⁸⁵² Gibsona, K., Abbott, C., (2002). City Profile: Portland, Oregon. *USA Cities*, 19(6), 425-436. Harden, B., (June, 18, 2006). White Gentrification Hits Northwest Cities. *Washington Post*.

class in both politics and everyday life⁸⁵³. Relative politics and policy it is possible find a number of instance of how gentrification has effects these areas. In particular, there is a dynamic in policy that favors certain set of values over others. One instance is the value placed on environmentalism over issues relating to the cost of living for lower income individuals. Two prominent examples of would be the twenty cent per bag tax for plastic grocery bags proposed for Seattle⁸⁵⁴ along how Washington's Growth Management Act has been implemented. Relative to the Growth Management Act, the act set forth a number of objectives relative to planning in the state⁸⁵⁵. Amongst these objectives are environmental preservation and the promotion of affordable housing. However, as the statistics relating to housing affordability in Washington allude, little emphasis has been placed on affordability which much has been placed on growth management. As some literature on this topic suggests,⁸⁵⁶ smart growth policies when implemented a certain way will often lead higher more exclusive housing costs. Finally, the culture of various urban areas in the Northwest has shifted from symbols that are class neutral or working class to symbols that are indicative to the gentrifying trend. One particularly prominent example is the replacement of the Rainer Beer Company "R" with a "T" that represents Tully's Coffee next to Interstate 5 south of Seattle. Arguably Rainer Beer is pervasive symbol of the older working class Pacific Northwest, while Tully's symbolizes the gentrified newer mentality of the area.

⁸⁵³ Yung, L., Freimund, W., Belsky, J., (2003). The Politics of Place: Understanding Meaning, Common Ground, and Political Difference on the Rocky Mountain Front. *Forest Science*, 49(6), 855-866.

⁸⁵⁴ Seattle Bag Tax (2008). Retrieved: August, 19, 2008. Website: <http://www.seattlebagtax.org/>

⁸⁵⁵ Growth Management Act (1990). 36.70 RCW.

⁸⁵⁶ Booza, J., Cutsinger, J., Galster, G., (2006). Where Did They Go? The Decline of Middle-Income Neighborhoods in Metropolitan America. *Brookings Institution*.

Rural Gentrification in the Pacific Northwest

Rural gentrification follows similar parameters as urban gentrification in terms of general dynamics between indigenous groups and those responsible for gentrifying a given area. However, beyond this basic structure rural gentrification occurs for significantly different reasons and ultimately manifests itself in a manner that is unique. Specifically, rural gentrification tends to occur in areas that are perceived as possessing some type of recreational or scenic amenity⁸⁵⁷. Traditionally, these areas tend to be communities that are mostly reliant upon natural resources related industries such as fishing, forestry or various forms of agriculture. The communities themselves usually have developed to reflect this both in terms of the occupations of most inhabitants and in terms of the respective cost of living in such communities⁸⁵⁸. However, when an area is “discovered” in terms of its attractiveness for vacation and retirement housing the economic and social dynamics of such communities change. Relative to the economic changes that occur when a community undergoes gentrification, the defining feature of such processes is that the local economy and real estate market becomes redefined to reflect the economic needs and resources of the gentrifying class rather than those of the indigenous population⁸⁵⁹. Additionally, various aspects of the local economy, government and planning have grown to reflect the divergent value systems of the group gentrifying a

⁸⁵⁷ Housing Assistance Council (2005). *They Paved Paradise... Gentrification In Rural Communities*. Retrieved, Augst, 19, 2008. Website:

<http://www.ruralhome.org/manager/uploads/Gentrification.pdf>

⁸⁵⁸ Beyer, N. (1998). Contemporary Development Forces in the Non-metropolitan West. *Pacific Historical Review*, 67, 427.

⁸⁵⁹ Housing Assistance Council (2005). *They Paved Paradise... Gentrification In Rural Communities*. Retrieved: August, 19, 2008. Website:

<http://www.ruralhome.org/manager/uploads/Gentrification.pdf>

rural area. Specifically, traditional industries such as fishing, forestry or mining become increasingly marginalized in terms of their economic viability, especially relative to the value of real-estate⁸⁶⁰. Also, the community's willingness to support natural resources related industries tends to decline in favor of policy geared towards an economy based upon recreation and various amenities⁸⁶¹. The net effect of these forces on rural communities usually amounts to the indigenous people becoming increasingly marginalized in terms of its ability to afford the cost of living in such communities, combined with a shift in local employment towards service sector jobs that support recreation and or retirement related industries. Also, along lines similar to urban gentrification such communities tend to redefine their value systems to reflect the values of the gentrifying class. In particular those involved in rural gentrification in the Northwest maintain a strange pastoralist/environmental orientation which reflects their desire to exploit area in a way that is beneficial to their lifestyle⁸⁶². Thus, natural resource industries or social services such as primary and secondary education may be

⁸⁶⁰ Ryan, J. C., (2001). *A Strategic Scan of Smart Growth Issues in the Pacific Northwest, Funders' Network*. Retrieved: August, 15, 2008. Website: <http://www.fundersnetwork.org/> Swanson, L., (2006). *Growth Agriculture and Ag Lands*. Prepared for the Ravalli County Right to Farm and Ranch Board and Bitter Root Land Trust. Center for the Rocky Mountain West.

⁸⁶⁰ Beyer, N., (1998). Contemporary Development Forces in the Non-metropolitan West. *Pacific Historical Review*, 67, 427.

⁸⁶⁰ Cronon, W., (1995). *Uncommon Ground: Toward Reinventing Nature*. W. Norton Company.

⁸⁶⁰ Warde, A., (1991). Gentrification as Consumption: Issues of Class and Gender. *Environment and Planning*, D9. September.

Swanson, L., (2006). *Growth Agriculture and Ag Lands*. Prepared for the Ravalli County Right to Farm and Ranch Board and Bitter Root Land Trust. Center for the Rocky Mountain West.

⁸⁶¹ Beyer, N., (1998). Contemporary Development Forces in the Non-metropolitan West. *Pacific Historical Review*, 67, 427.

⁸⁶² Cronon, W., (1995). *The Trouble with Wilderness or, Getting Back to the Wrong Nature*. W. W. Norton Company.

marginalized in favor of institutions that reflect the demographics and economic resources of those capitalizing upon a community's amenities⁸⁶³. Also, it has been observed that the notion of the “New West “ provides an ideological basis for much of the rural gentrification in the Northwest. As discussed in Joseph Taylor’s article “*The Many Lives of the New West*” the New West ideology is predicated on an idealized conception of rural life. Ultimately, however the New West mentality serves as more of a justification for rural gentrification, in a fashion similar to those of the Creative Class, than an actual theory of social behavior. One final dimension of rural gentrification is that the resources that drive such gentrification are not indigenous to the communities where gentrification occurs. Usually, those gentrifying a community move to that community from an urban area where economic opportunity and resources are more prevalent⁸⁶⁴. These groups which have commonly been referred to as “equity refugees” bring a disproportionate amount of resources to these areas along with a lifestyle that is often at odds with the local population. One excellent discussion of this can be found in Dave Carty’s *Born Again at the Laundromat* in which he discusses the differences between the glorified New West culture of the gentrifying class and the more humble aspects of the indigenous population.

The process of rural gentrification through the Pacific Northwest is prevalent both on a community level and on a regional level. Specific, communities such as Mc Call

⁸⁶³ Warde, A., (1991). Gentrification as Consumption: Issues of Class and Gender. *Environment and Planning*, D9. September.

⁸⁶⁴ Housing Assistance Council (2005). *They Paved Paradise... Gentrification In Rural Communities*. Retrieved: July, 28, 2008. Website: <http://www.ruralhome.org/manager/uploads/Gentrification.pdf>

Idaho⁸⁶⁵, Port Angeles Washington⁸⁶⁶, Missoula Montana⁸⁶⁷ amongst others have considered epicenters of this phenomenon. Additionally, various rural regions such as North Idaho and Western Montana are generally perceived as experiencing rural gentrification. Relative to specific data, there is an abundance of information that substantiates this assertion. Specifically, data relating to the cost of living⁸⁶⁸, housing affordability, migration⁸⁶⁹ and the decline of traditional industries⁸⁷⁰ in these areas all substantiate the assertion that gentrification is has occurred these areas. Additionally, there is substantial anecdotal and non-statistical data that substantiates this claim. One notable instance the economic effect of gentrification on a rural communities is the town McCall's subsidization of housing for it's school teachers and police officers⁸⁷¹. Incidentally, McCall's policy of promoting affordable housing was challenged legally by local developers and realtors on the grounds that a municipality has no authority to regulate development in such a fashion. When considered in the context of this work, the litigation of these groups appears to substantiate the assertion that gentrifying groups have little concern for the well being of a community. In addition to the housing

⁸⁶⁵ Dougherty, C. (January, 18, 2008). The New American Gentry, the wealth are colonizing rural areas, bringing cash, culture -- and controversy. *The Wall Street*. A1.

⁸⁶⁶ Dietrich, W., (2005). Port Reform, *Pacific Magazine*. May.

⁸⁶⁷ Ghose, R., (1998). *A Realtor Runs through It: Rural Gentrification and the Changing Cultural Landscape of Missoula, Montana*. University of Wisconsin Press.

⁸⁶⁸ ACCRA (2008). *Cost of Living Index*. Retrieved: August, 18, 2008. Website: www.coli.org.

⁸⁶⁹ US Census (2008). *Domestic Migration for Regions, Divisions and States, 1995-2005*. Retrieved: July, 12, 2008. Website: www.census.gov.

⁸⁷⁰ Pierce, J. (2008). The Winds of Change: The Decline of Extractive Industries and the Rise of Tourism in Hood River County, Oregon. *Oregon Historical Quarterly*, 108.(3) 41.

⁸⁷¹ Volkert L. (November, 20, 2006). McCall ordinance stirs up controversy, 'Community housing' push results in lawsuit; Boise city officials await outcome. *Idaho Business Review*.

situation in McCall, a number of large land owners such as the Potlatch Corporation have sold of land traditionally used for forestry or farming to individuals for the purpose of vacation home and other real estate development.⁸⁷² In any of the instances mentioned the dynamic appears to be consistent with the theory of rural gentrification consistently of a disproportionately powerful group using its resources to redefine a community to fit their needs while marginalizing other groups.

Migration With in the Pacific Northwest

In addition to rural and urban gentrification intra and inter regional migration exhibit features consistent with the model being presented here. Migration both with in the Pacific Northwest and from other regions contributes both to urban and rural gentrification. Migration can typified as occurring from primary regions that possess higher levels of economic and cultural power towards secondary areas which are comparably weaker. For instance, during the period of 1995 to 2000 some 51,000 people moved from California to King County Washington⁸⁷³. In the instance inter regional migration into the Pacific Northwest much of this migration stems from California and other major urban areas that posses comparatively high real estate values. As the table below notes the median home value for most areas in California is significantly higher than in even primary areas in the Pacific Northwest such as Seattle and Portland⁸⁷⁴.

⁸⁷² Dey, K., (September, 14, 2007). Potlatch buys Chunk of Idaho land. *Source: IdahoStatesman.com.*

⁸⁷³ Washington Office of Financial Management (2008). *Migration Between 1995 and 2000 Based on County Population in 2000 and Residence in 1995*. Retrieved, August, 18, 2008. Website:<http://www.ofm.wa.gov/pop/migration/default.asp>

⁸⁷⁴ National Association of Realtors. (2008). Retrieved: August, 16, 2008. Website: www.NAR.org

Additionally data on inter regional migration suggests that a large number of people have move from areas such as California to the Northwest.⁸⁷⁵

Table 1. Relative Median House Prices

Location	Median Home Price, 2004
California	\$450,000
Seattle Washington	\$354,00
Portland Oregon	\$237,000

From an economic standpoint, immigrants to the Northwest from California on average possess more economic resources when compared to individuals of similar background from within the Northwest. Additionally, migration into the Northwest from other regions can also be seen as contributing to rural gentrification, since various individuals seek to either retire or possess a second home somewhere in the rural Northwest.

In addition to migration from regions outside of the Northwest, migration within the region represents a similar dynamic. Specifically, intra-regional migration tends occur when individuals migrate from primary urban areas such as Seattle or Portland and move to either secondary urban areas, such as Spokane or Boise, or, to rural areas within the

⁸⁷⁵ Washington Office of Financial Management (2008). *Migration Between 1995 and 2000 Based on County Population in 2000 and Residence in 1995*. Retrieved: August, 18, 2008. Website:<http://www.ofm.wa.gov/pop/migration/default.asp>

Northwest. Although the resources of those who migrate within the Northwest are most likely fewer than those who migrate to the region the relative economic power of those from primary regions still allows them the ability to gentrify or colonize secondary areas. Although intra and inter-regional migration in the Northwest primarily has economic consequences it would be shortsighted to ignore social and cultural consequences of such activities. Although it is difficult to assess the exact impact of this migration, arguably any individual that moves from one region to another inadvertently transports the socialization of the original environment. Thus, a Californian moving to the Northwest brings with them the values of California, and a person from western Washington who moves to the inland Northwest brings with them the values of western Washington. One prominent example that substantiates this assertion is migration between King and Spokane counties for the years between 1995 and 2000.⁸⁷⁶ During this period of time migrants to Spokane County from King county comprised 3% of the total population of the country whereas migrants from Spokane County comprised roughly .1% of the total population.

Regional Colonialism

The patterns described above cannot adequately be described in terms of merely gentrification or simple economically motivated actions. Although theories of gentrification and analysis of the differential economics of various regions contribute to

⁸⁷⁶ Washington Office of Financial Management (2008). *Migration Between 1995 and 2000 Based on County Population in 2000 and Residence in 1995*. Retrieved, August, 18, 2008. Website:<http://www.ofm.wa.gov/pop/migration/default.asp>

the discussion they fail to note the inter-related nature of both economic and social forces. Additionally, these explanations fail to note the consistency across instances with which these processes occurs. With these criticisms in mind it is proposed that a model of “regional colonialism” be applied to explain the process observed. Specifically, a theory of regional colonialism, much like its nationalist counterparts, is based upon that presumption that a group with disproportionate resources occupies an area for its own use while systematically marginalizing groups that are indigenous to that area. Ultimately, the power of the occupying entity reshapes the areas to favor its ideological and economic agenda while it subjugates indigenous groups maintain this new social and economic order. In the instance of urban environments we find this pattern mostly occurs when one class of individuals redefines the importance of their economic niche while trivializing other sectors of the economy⁸⁷⁷. Relative to rural environments the occupying class is more concerned to with redefining the entire community in terms of its economic and social preferences⁸⁷⁸. Finally, migration within or between regions demonstrates that regardless of an individual’s position within their group of origin when they move from a region with more resources to one with less, they assume a position of dominance over the their peers in the area they inhabit. Regardless of the context, urban or rural, intra or inter regional, the colonialist dynamic remains consistent.

⁸⁷⁷ Hill, E. W., (1994). Neighborhood reinvestment, service factories, and commercial gentrification: a policy solution that will not work. *Environment and Planning*, 2(4), 484–489.

⁸⁷⁸ Growdy, D., (1998). Urban Immigration is Another Word for Cultural Genocide. *Colorado Magazine*, 56, October.

The phenomenon of regional colonialism has both immediate and long term consequences. Through the study of both the effects of migration and gentrification we can hypothesize about the likely impact of this situation on the Pacific Northwest west along with exploring how policy may either mitigate or facilitate various aspects of regional colonialism.

The Future Course of Regional Colonialism

The question of how the trends discussed above will play out is primarily determined by whether or not prevailing conditions and consensus continue, or whether some intervening factor alters the situation. Regardless of the exact path that any given area may take, there is some information available as to the likely course with in which various areas will progress. Relative, to urban areas the economic pressure created by gentrification, combined with certain class centered myopia in policy can be seen as self complicating process of exclusion. As data relating to the cost of living and acquiring certain services in various gentrified urban areas allude⁸⁷⁹ one of the consequences of gentrification is that the cost of basic services rises due to an increase in the cost of labor and real estate. Thus, the more gentrified an area becomes the more likely the cost of services rise which in turn excludes more people who either must raise prices for the services they provide or leave the area. If this pattern continues eventually an area will become so exclusive that it will cease to be attractive to new investment. Additionally,

⁸⁷⁹ Aktinson, R., (2004). The hidden costs of gentrification: Displacement in central London. *Journal of Housing and the Built Environment*, 15(4). Hill, E, W. (1994). Neighborhood reinvestment, service factories, and commercial gentrification: a policy solution that will not work. *Environment and Planning*, 12(4), 484–489.

the high cost of operating in such areas will limit the standard of living that can be afforded by even high income individuals. To some extent this is already apparent in various urban areas in the Northwest when one considers the cost of living⁸⁸⁰ and the various industries that have relocated themselves due to the high cost of operation⁸⁸¹.

In addition to the exclusionary effect of gentrification in urban areas gentrification can also be seen as contributing to the economic homogeneity of an area. Since certain industries such as manufacturing are both aesthetically and economically undesirable in gentrifying areas they have an incentive to leave⁸⁸². Additionally, the cost of operation for certain industries may promote their exodus. Considering the preference for knowledge based and high tech industries gentrifying regions provide strong incentives to create homogenous economies. Although, there are few perceivable issues with this arrangement when economic times are good, when economic conditions change for the worse the economic homogeneity of such areas may prove to be a liability since such areas are dependent primarily upon one type of industry. In any scenario it appears likely that the long term consequence of unchecked gentrification in urban areas is that such areas ultimately become more costly and vulnerable to certain types of economic decline either as a consequence of the high cost of living or as a result of various dominant mentalities which systematically make a gentrified areas susceptible to macroeconomic disturbances.

⁸⁸⁰ ACCRA (2008). *Cost of Living Index*. Retrieved: August, 18, 2008. Website: www.coli.org.

⁸⁸¹ Milken Institute (2006). *Cost of Doing Business, City Index 2006*. Retrieved: August, 19, 2008. Website: http://www.milkeninstitute.org/pdf/cost_of_doing_business_2005.pdf

⁸⁸² Salazar, D. J., (1996). Environmental Justice and a People's Forestry. *Journal of Forestry*. 94(11), 32-36.

The long term effects of gentrification in rural areas mimic those of urban areas on a general level. However, on a more specific level gentrified rural areas appear likely to experience different outcomes over time. Specifically, gentrified rural areas are defined primarily by the external nature of the finances that dictate gentrification within a rural community. Gentrified rural communities often become defined solely in terms of their utility to the gentrifying class. Thus, it is likely when a gentrified community is deprived of external sources of money such communities decline since industries other than those related to gentrification have effectively been eliminated. Additionally, gentrified rural communities may compromise their long term economic viability through mismanagement and marginalization of natural resources⁸⁸³. Per se, it is quite likely that forest, mineral and other natural resources were considered economically marginal might once again be considered viable. One excellent example of this is the resurgence of local agriculture in various areas of the North East⁸⁸⁴. Although such areas were considered marginal for quite some time the increased cost of fuel has spurred renewed interest in their economic variability. In the instance of gentrified rural areas, gentrification can be generally considered to be a hindering force relative to the resurgence of natural resources related industries. This is the case primarily for two reasons. First, vacation and retirement housing in gentrified rural areas often consumes land used for lumber or cultivation. Second, as mentioned before, the industrial infrastructure for various natural

⁸⁸³ Salazar, D. J., (1996). Environmental Justice and a People's Forestry. *Journal of Forestry*, 94(11), 32-36.

⁸⁸⁴ Green Business News (2008). *Wal-Mart carries more local produce*. Retrieved: August, 16, 2008. Website: <http://www.greenbiz.com/news/2008/07/02/wal-mart-source-more-local-produce>

resources industries in gentrified rural areas is frequently neglected or abandoned. In addition to the economic aspects of rural gentrification, it has been observed that gentrified communities display a certain “unnatural” demographic distribution⁸⁸⁵. Thus, gentrified rural communities will often possess less nuclear families, younger people and other groups necessary for the process of social replication.

In addition to the likely course of rural and urban gentrification, certain dynamics are also perceivable at the level of inter and intra regional migration. In particular is the issue of various secondary areas’ dependence upon primary areas for both new residents and economic resources. Although there is arguably less dependence in secondary urban areas than in gentrified rural areas on primary areas for resources there still exists some level of connection. Specifically, if we view growth and economic progress in secondary areas as being contingent upon migration and input of capital from primary areas then such dependence may hinder secondary areas if conditions change in primary areas. Per se, if primary areas become more affordable or amenable to certain industries the incentive for migration is effectively limited. Additionally, improvements in affordability and the business environment in primary areas effectively places secondary areas at a comparative disadvantage.

In any of the scenarios discussed above an area’s dependence upon a primary area or a certain class of people within an area effectively dictates the nature of economic and

⁸⁸⁵ Housing Assistance Council (2005). *They Paved Paradise... Gentrification In Rural Communities*. Retrieved: July, 28, 2008. Website: <http://www.ruralhome.org/manager/uploads/Gentrification.pdf>

social existence with in such communities. As with most traditional manifestations of colonialism the key feature of a colonialist dynamic is the marginalization of indigenous populations combined with a dependence on the colonialist homeland for both economic resources and social authority. Regardless of the specific context, such dynamics appear to be ubiquitous through out the region. However, the parallels between nationalist colonialism and the regional dynamics observed here extend beyond this preliminary analysis. In particular is the relationship between theories of post-colonialism and the likely future dynamics observed in the region⁸⁸⁶. One area of discussion that quite relevant, is issue of community autonomy and sustainability. As most descriptions of colonialist rule allude, one of the key features of most colonies is the exploitation resources for the benefit of the colonists or the homeland⁸⁸⁷. In the instances in question such resources are mostly acquired at the expense of most of the indigenous population. As various analysis of post-colonial development note⁸⁸⁸, usually arises a point in the development of colonies where colonists assimilate with indigenous populations and eventually break ties with the homeland, or the indigenous population rebels and expels the colonists who refuse to integrate with the local population. In the instance of regional colonialism such descriptions allude to a likely future dynamic in terms of governance, policy and the general dynamics of communities.

⁸⁸⁶ Ashcroft, B., Griffiths, G., Tiffin, H. (1998). *Key Concepts in Post Colonialism*. Routledge.

⁸⁸⁷ Larriann J. (1989). *Theories of Colonialism*. Polity Press.

⁸⁸⁸ Ashcroft, B., Griffiths, G., Tiffin, H., (1998). *Key Concepts in Post Colonialism*. Routledge.

The likely course of the areas in question is rooted in the nature of the defining values of such communities. One could make the case that the dynamics of regional colonialism are rooted in a philosophy which values private interests over public ones and refuses to consider the long term effects of individual activities on the community and its' level of sustainability. Additionally, regional colonialism occurs within the context of a uniquely American mentality towards place and culture, one that from many vantage points, places little value on an area's culture or an individual's relationship to a certain community. Thus, the interest of individuals in terms of their own preferences and desires achieve a position of dominance over the needs of the community and future generations. As the both the study of post colonial societies and more traditional societies note⁸⁸⁹ such mentalities are an unlikely nor desirable ideology to maintain for any period of time.

Relative to the discussion at hand, one prominent question to ask is: How can the communities in question redefine themselves in a manner that balances the interest of certain groups or individuals with those of the community? Although it is impossible to make the interests of certain individuals completely compatible with those of the community, a few measures might be implemented relative to attitudes and policy that can help resolve such conflicts.

⁸⁸⁹ Amin S. (1976). *Unequal Development: An Essay on the Social Formations of Peripheral Capitalism*. New York: Monthly Review Press. Diamond, J. M., (2005). *Collapse: How Societies Choose to Fail or Succeed*. Viking Adult.

First, is the issue of noting the diversity of interests within a community and the need to maintain long term stability⁸⁹⁰. Arguably, gentrified communities have neglected the needs of groups outside of the gentrified class. Policy that addresses the issue of community wide equity must note the necessary role of all members of a community and provide for adequate recognition. Thus, policy must be developed to allow for a diversity of situations to occur within a community. Such policy might systematically limit the ability of one group to expand with out consideration to other groups, while simultaneously promoting the welfare of groups with marginal resources but necessary roles with in a community. Specifically, policy geared to affordable housing and economic diversity are particular relevant to this idea.

Second, in addition to a mentality that notes the necessary diversity of a community, it is also desirable to cultivate an understanding of self interest that includes the needs of the community.⁸⁹¹ Arguably, much of what has defined the dynamics observed here is a myopic and limited view of self interest. Specifically, the ill effects of much of regional colonialism can be rooted in individual's desire to exploit a resource or community for their own personal benefit. Although such activities appear to be beneficial to the individuals engaged in such actions they are often not productive for communities or the long term interests of individuals. At the center of this version of self interest is the notion that an individual is not dependant or accountable to the community that they are a part of. Additionally, self interest is something that is perceived in the

⁸⁹⁰ Levy, D., Comey, J., Padilla, S., (2006). *In the Face of Gentrification: Case Studies of Local Efforts to Mitigate Displacement*. The Urban Institute.

⁸⁹¹ Cairns, J., (1998). Excessive Individualism Today Threatens Liberty Tomorrow. *Population and Environment*. 19(5), 397-409.

short term. What this results in is a series of behaviors that contribute to a situation that pays little regard for the long term effects of individual's behavior on their community.

Relative to specific activities this is more than apparent in areas such as real estate. For instance, a property owner has little incentive to consider the long term viability of the natural resources of their property when it is valued as a recreational or aesthetic amenity. Also, a real estate developer has little incentive to consider the affordability of housing when the market is dominated by wealthy consumers seeking luxury housing. Finally, as noted before, America provides a unique environment in terms of values and individual behaviors. Specifically, Americans are highly mobile in terms of where they live⁸⁹². Thus, it is often the case that a person can move to a community, use it for what ever purpose they desire and then leave when conditions become unattractive. Relative to the issue of regional colonialism such behaviors are fundamental to the exploitive dynamic. For instance, a retiree who moves to a rural area need not worry as to whether their children or grand children can subsist in such areas. Thus, they have little incentive to maintain a sustainable community. Additionally, a group that profits from an unsustainable dynamic in one community can merely leave such communities for another more attractive area. Ultimately, such a rendition of self interest can be seen as being incompatible with the needs of communities and with more traditional and enlightened versions of self interest. Although, it is difficult to propose any one action to that can redefine self interest ultimately individual efforts at developing

⁸⁹² US Census (2008). Retrieved: August, 16, 2008. Website: <http://www.census.gov/population/www/socdemo/migrate.html>

policy to facilitate such orientations combined with what appears to be the inevitable long term outcome of such dispositions is likely to facilitate a reorientation in such views.

The notion that much of what has occurred in the Pacific Northwest in terms of gentrification and migration can be described using theories of colonialism adds a novel theoretical perspective that is not conventionally applied to such discussions. Such an analysis cultivates a unique perspective on many of the social and economic dynamics that the region has experienced. Additionally, it provides some perspective on the likely future course of various trends within the region. However, as much as the colonialist lens provides an overarching explanation as to what is occurring it raises as many questions in terms of how specific policies facilitate or hinder such perspective along with how the colonialist paradigm relates to the uniquely American experience. Ultimately, colonialist lens alludes to the notion that much of what is occurring can be described in terms of forces that are not commonly recognized as playing a role in American community politics.