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# Sustainability with Globalization: An Unsustainable Proposition

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SUSTAINABILITY WITH GLOBALIZATION:  
AN UNSUSTAINABLE PROPOSITION?

A Thesis  
Presented to  
The Faculty of the Department of Geography and Geology  
Western Kentucky University  
Bowling Green, Kentucky

In Partial Fulfillment  
Of the Requirements for the Degree  
Master of Science in Geoscience

By  
Daniel B. Reader

August 2006

SUSTAINABILITY WITH GLOBALIZATION:  
AN UNSUSTAINABLE PROPOSITION?

Date Recommended \_\_\_\_\_

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Director of Thesis

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Dean, Graduate Studies and Research    Date

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SUSTAINABILITY WITH GLOBALIZATION:  
AN UNSUSTAINABLE PROPOSITION?

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**Abstract**

Globalization is recognized as a world-encompassing phenomenon, even as its benefits are debated. Sustainability, the capacity to maintain high standards of living through generations, is at stake. This paper examines the problems of sustainability with globalization from several perspectives. High statistical correlation between indices of globalization and environmental degradation ( $r^2 = 0.977$ ,  $p < .001$ ) is found using multi-dimensional scaling software. The socially destabilizing, culture flattening effects of globalization are examined, and the terms 'nationalism' and 'terrorism' are defined. On the basis of its medial position among the indices of both globalization and environmental degradation, Chile is explored in a case study of the interaction. Conclusions regarding Chile's vulnerabilities are reached, and the country's environmental, social, and economic 'weak spots' are identified. The ethical positions of globalization and sustainability are considered, and the conclusion that there is very little that can be done to alter the nature of the interaction is drawn. It is suggested that globalization minimizes the prospects of success in efforts toward sustainability by maximizing vulnerabilities among sustainability's components.

## Chapter One

### Introduction & Background

History is replete with failed predictions of doom. Prophecies of imminent destruction run right through the earliest scriptural writings; yet, somehow, humanity has always managed to survive. Technological advances have enabled tremendous growth, and to all appearances, there is every reason to believe that such advances may continue to provide comfort to billions more for untold centuries to come. The world's Cassandras warn that there must, someday, be a limit to such unrestrained increase; until recently, there has been little to support such claims.

The idea of limitation is neither a familiar concept in the modern cultural paradigm, nor is it a particularly comfortable one. Only within the last few decades has there been any suggestion that technological advancement, and the resultant growth in the human population, has an impact on the earth and affects humanity's own ability to flourish. Rachel Carson (1962) was among the first to bear the bad news when she exposed the dangers of DDT use in her book *Silent Spring*. In 1968, Paul Ehrlich, a biologist at Stanford University, warned of the dire consequences of unrestrained population growth in *The Population Bomb*. In 1972, researchers at Massachusetts Institute of Technology issued the famous "Report to the Club of Rome" entitled *The Limits to Growth* (Meadows, et al., 1972, 1), wherein they concluded:

1. If the present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next one hundred years. The most probable result will be a rather sudden and uncontrollable decline in both population and industrial capacity.
2. It is possible to alter these growth trends and to establish a condition of ecological and economic stability that is sustainable far into the future. The state of global equilibrium could be designed so that the basic

material needs of each person on earth are satisfied and each person has an equal opportunity to realize his individual human potential.

If the world's people decide to strive for this second outcome rather than the first, the sooner they begin working to attain it, the greater will be their chances of success.

This definitive statement was received by scientists and policy makers as an ultimatum of sorts, and over the next few years began to be taken quite seriously in the global community. All concerned parties were interested in how to implement the proposed alterations (reductions in growth trends) toward a sustainable future, and used the report as their guideline. “Ecological and economic stability,” coupled with the satisfaction of “the basic material needs of each person on earth” such that there is “equal opportunity to realize his individual human potential” became the template for the project. *Sustainability* was suddenly more than a mere word, but had been transformed into a term representing a focused agenda of tremendous global significance.

The United Nations held its Conference on the Human Environment in Stockholm the same year that *The Limits to Growth* was published. In the course of the conference, the United Nations Environment Programme (UNEP) was established, and participating governments adopted a declaration containing a list of 26 guiding principles. Among the various principles cited were repeated affirmations and restatements of the three pillars of sustainability: ecological stability, economic stability, and social stability – just as prescribed by the *Limits* protocol.

Twenty years later, the United Nations met in Rio de Janeiro for its Conference on Environment and Development (UNCED). This conference, in conjunction with other UN conferences taking place at about the same time, was decidedly more specific with respect to the problems encountered in attempting to abide by the UNEP Declaration.

Regional disparities were of particular interest. It appeared that the more developed countries, generally of the northern hemisphere, with smaller populations relative to their levels of productivity, were consuming a disproportionately large quantity of resources, and producing an equally disproportionate quantity of waste, when compared with the less developed nations in the equatorial regions and in the southern hemisphere. Limited capacity for education (especially for women) and healthcare (especially in facing the threat of AIDS) were contributing to widening disparities in both economic and social stability for developing nations. With populations soaring, poverty widespread, and disease rampant, the developing southern nations were struggling merely to sustain themselves. Ecological impacts could be of little concern under conditions of such chronic strife; poor growing conditions in conjunction with base-level agricultural technology were resulting in massive environmental depredations. The developing nations could not possibly meet their commitments pursuant to the UNEP declaration without help. They appealed to the North for assistance – and were answered with a mixed message. The wealthy developed countries would be willing to provide financial assistance in the form of loans, training, and equipment to help the faltering developing nations. But the consensus among the developed nations, most notably the United States, was that limiting their own resource consumption and/or waste production was generally out of the question. Both the economic systems and the forms of government employed in the developed nations precluded any promise of formal, governmentally-imposed restraints. It would be left to the citizens of the developed nations to restrain themselves voluntarily, if they would. During those same twenty years, there had been a gradual increase in environmental awareness among the populace of the developed world.

Recycling centers sprang up everywhere; products became marketed with promises of biodegradability and as environmentally safe. Special interest groups lobbied for the preservation of individual endangered species, and more than a few major projects were placed under moratorium as a result. Natural fur sales plummeted, and conspicuous consumption of all kinds fell out of vogue. Luxury cars got smaller with each new model; fuel efficiency rose, and continued to rise. Manufacturers recognized the trend, and began promoting their products in “environmentally-friendly” terms. Dolphin-safe tuna hit the shelves, along with organically grown produce and free-range, no-hormone meat products. Consumer awareness was at an all-time high, population growth in the developed countries was relatively low – and the word *sustainable* lingered on everyone’s lips.

But other events of global significance occurred during those two decades. Ecological disasters became more frequent: massive oil spills threatened coastline after coastline, the Chernobyl nuclear facility suffered a cataclysmic meltdown, and species extinction rates made this period in Earth’s history among the greatest mass-extinction events ever. Global climate change was recognized as a reality, and was just as promptly denied. The Cold War abruptly ended with the collapse of the Soviet Union, with vast new markets in consumers, raw materials, and labor opening overnight. The forces of globalization converged at once, as these opportunities for huge commercial windfalls became available. Discussions concerning human rights were now regionally relative, abstracted almost to meaninglessness as sweatshop labor ballooned across Third World countries. Environmental considerations, too, became significant only with respect to local regulations, if any; attempts to resist the trend collapsed at the demands of the target

nations' own citizenry desperate for economic opportunity. Questions of sustainability could only be discussed relative to profit margins; implementation of sustainability measures had become a function of economic feasibility, and actually seen only when such might be exploited for publicity value.

As globalizing actors continue to reap financial rewards to this day, two of the three legs of sustainability are now completely dependent upon economic considerations. Even as sustainability is given lip-service in the context of global policy making, the bottom line decisions are primarily geared toward economic sustainability. Social instability is generally taken into account only when it leads to armed conflict or more generally impedes industrial growth, or otherwise limits profit taking by "stakeholders." Environmental considerations rarely offer an immediate positive effect on profit margins. Those cases where consumer attention may (briefly) be focused on a particularly disastrous development site may prompt some movement toward reparation, but by and large, environmental considerations are significant only in a negative sense. When limitations are imposed in the name of environmental sustainability, such considerations cost stakeholders money, and the stakeholders don't like that. Environmental stability is seen, when it is seen at all, as a potential to be realized only *after* the profits are taken.

Sustainability, as envisioned in the *Report to the Club of Rome*, is seemingly as far away as ever, and we are thirty years closer to the century deadline given therein.

## **Overview**

The first task of this research is to precisely define what is meant by the words sustainability and globalization. Assuming that sustainability does in fact mean any single thing, is it being practiced or implemented in any significant way, such that it is

sufficient to accomplish its nominal goal? And, if not, what is impeding its success?

Globalization has been recently acknowledged as a potent socioeconomic force, but is it really new? Is globalization the natural result of the end of the Cold War, or just as likely, the end result of the Peace of Westphalia? Is globalization a planned event, or an inadvertent effect? What, if anything, should be done about it? These questions must be addressed to reach an adequate understanding of the interaction between sustainability and globalization.

On the assumption that sustainability actually refers to some single tenet or principle, there must be consequences of novel import to humanity. The global effects that have given rise to the very notion of sustainability imply that in the event of failure in such efforts, either the nominal definition is wrong, or there are some radical reductions in humanity's population and productivity looming on the horizon. One must question the motivations for ignoring such manifestly dire warnings, and it may be reasonably supposed that economic considerations are the driving force behind such obliviousness. This paper examines the possibility that efforts at sustainability, at all levels, are being systematically undermined by the forces of globalization, and that sustainability may not be achievable in the face of such adversity.

### **Defining Sustainability**

The aforementioned primary factors to be considered in any discussion of sustainability are environmental stability, social stability, and economic stability. When initially introduced in the *Limits* report, however, there was no priority established among the factors, nor was any mention made as to the intertwined nature of the factors. While the significance of social stability, for instance, may be perfectly understood as

prerequisite to the overarching stability necessary to sustainability, the way in which social stability might be achieved in the context of variable economic or environmental stability is not as clear. Whether social stability is as important to the overall stability as, for instance, economic stability must certainly be assessed on a case-by-case basis. Further, it is no simple matter to characterize many issues within the sustainability arena as neatly couched within one or another of the three categories. To which category, for example, would the problems of sustainable agricultural practices be assigned? Is it a social issue, or an economic one? Some will insist, of course, that it is neither; considering the history of depredations with respect to forest clearing, sustainability in agricultural practices must be primarily seen as an environmental issue. In point of fact, *any* of these would be an appropriate assignation, depending upon the perspective of the respondent. Finally, under what circumstances might one factor trump another in order to achieve its own internal stability? Economic stability is seen by many economists as a state of steady growth; if such growth necessarily entails a diminution of environmental stability, which consideration should prevail? The difficulties in definition, prioritization, and categorization become apparent.

Another point of confusion is the common tendency toward the conflation of the issues of *sustainability* with those of *sustainable development*. The latter term begins with the premise that continued development can be a sustainable enterprise. Sustainability, conceptually, contains no such assumption. In fact, the strictures necessary to achieve an abiding sustainability may require an active effort to redevelop, or even ‘undevelop,’ certain areas. The concept of ‘sustainable development’ may prove to be an oxymoron, as further development in the way that it is currently conceived may



be entirely unsustainable. In no way should the two concepts be understood to refer to the same philosophy.

This paper will begin with two primary assumptions. It may readily be understood that there can be no stability in an economy if there is no stable society in which it might operate. By the same token, there are slim odds for a stable society within an unstable environment – e.g., Pompeii. Thus, the first assumption is that there is an implicit priority among the three legs of sustainability: environmental stability is of greater moment than social stability, which, in turn, is of greater significance than economic stability. The second assumption is that the interactions between the legs are at least as significant as any of the legs proper, and that the issues that arise for any of the legs should be applied to *all* of them. Further, it will become clear that it is these nonspecific issues are the most pervasive and, ultimately, the most threatening issues in the discussion of sustainability.

### **The Three Pillars of Sustainability**

#### *Environmental Stability*

The environment is the composite of ecosystems, highly complex systems dependent upon the nuances of the habitats available, and the diversity of species that occupy niches of potential. Each ecosystem is durable to the extent that it is redundantly supported by overlap among these hierarchically ordered niches across habitat gradients. Yet, due to an ecosystem's very complexity, it is subject to collapse when it is destabilized. It is rendered more vulnerable to such collapse when either habitat integrity is diminished, or biodiversity is reduced.

As it is commonly employed, the term “environment” is a little slippery, as it enjoys equal usage at any scale. In the context of sustainability, it is vital to grasp the scope of the problem, as obtaining the appearance of local sustainability may be futile if one’s quality of life is dependent upon a larger framework. In the context of globalization, therefore, it makes increasingly greater sense to employ the term *environment* in terms of ever larger scales, up to the global. This is not to exclude environmental impacts of a more local nature; on the contrary, it is assumed that any significant environmental disruption will contribute to an overall global instability. “Activities that impact the global environment take place locally” (Sanwal 2004, 20). It is the recognition of the global environment as a single, highly complex system, much like one’s own body. Injury to an extremity can have repercussions of a system-wide nature.

Environmental stability includes elements such as biodiversity, which affects resilience in a biome; natural resources, both in the method and extent of their extraction; and pollution resulting both from the extraction and utilization of those resources (Munasinghe 1992). By corollary, environmental instability is the result of not effectively managing the stresses on these systems.

Global climate change is increasingly threatening environmental stability for the entire world. One of the most devastating long-term effects of climate change is species loss. In conjunction with other anthropogenic causes, the massive extinctions that are occurring globally are of extraordinary concern. Through a combination of the introduction of foreign species and habitat decimation, biodiversity worldwide is suffering under a concerted assault (Diamond 1989). Estimates of extinctions *per day* range in the hundreds (Leakey & Lewin 1995). It is conservatively estimated that at

current rates, some 30,000 species are forever erased from Earth's genetic repertoire every year (estimates range from 17,000 to 100,000, the variability owing to sparseness of sampling vs. various extrapolation techniques) (Ehrlich & Wilson 1991). When compared to the average background extinction rate of about four species per annum, it becomes apparent why the current event is termed a *mass extinction*. This composite event is the sixth such mass extinction known to have occurred on Earth in its 4.5 billion years of harboring life (Wilson 1993, Kerr 2001). What renders this event unique is in the rapidity of its onset, rivaling even the Cretaceous extinction by meteor impact (the so-called "Dinosaur Killer") both in absolute terms, and in number of extinctions per unit time (Leakey & Lewin 1995). More significantly for our purposes, this event is unique in the fact that it is the first mass extinction to be brought about by one of Earth's own residents. It is estimated that half of the planet's species will be driven to extinction, at the hand of humanity, before the end of this century.

### *Social Stability*

Sustainability is, according to the *Limits* protocol, dependent upon social stability. Social instability is most often a bloody, strife-ridden condition and is a decidedly unsustainable state of affairs. The means to achieving enduring social stability are, however, notoriously elusive. History is rife with prescriptions for a stable society, ranging from the repression evident in Plato's *Republic* (c. 380 BCE) and Machiavelli's *The Prince* (1515) to the freedoms espoused in Thomas More's *Utopia* (1516) and John Rawls' *A Theory of Justice* (1971). It is difficult to assess the merits of most such offerings in a pragmatic sense, in that so few have been seriously attempted, and none successfully. Munasinghe (1992), in his presentation to the United Nations Conference

on Environment and Development (UNCED, also known as the Earth Summit) at Rio de Janeiro, cited three factors requisite to achieving social sustainability: empowerment, inclusion/consultation, and governance. The formula seems to have enjoyed some recent success in locations such as England, where civic tension incited in the course of regional planning meetings was alleviated by adopting a policy of becoming “more responsive to...the demands for improved engagement with citizens” (Haughton & Counsell 2004, 143). By intentionally employing methods based upon the tenets of sustainability, social stability has emerged from these unstable situations. There appears to be a recent global trend toward democracy as the best alternative both within and between nations. Whether and to what extent the adoption of such policies actually results in social sustainability remains to be seen. For the purposes of this discussion, the examination of social sustainability in conjunction with the other legs of sustainability may be the best alternative.

### *Economic Stability*

Economic stability is a particularly tricky goal, primarily because economies are dynamic, frequently volatile systems. This inherent instability is exacerbated by the opening of new markets and the continued development of technologies in production, communication, and transportation. Munasinghe (1992) calls for growth, efficiency and stability as factors contributing to economic stability and towards a sustainable economy. In order to ameliorate the negatives and improve efficiency, some advocate the implementation of “effective governmental frameworks... But such frameworks do not yet exist at the international level, leaving a vacuum of accountability and the potential for gross irresponsibility.” (Costanza, et al. 1995, 20). Others contend that economic

fluctuation is a naturally occurring facet of economies, and that regulatory interference is the worst medicine (Henderson 1995). While one advocates governmental regulation, and the other eschews regulation of any sort, these proponents of free-market economies insist that it is not the job of private business to take social responsibility for market fluctuations. Rather, “the most effective way to improve the business contribution to society is to extend the scope and improve the functioning of markets” (Henderson 1995, 198). Economic indicators can provide symptomatic evidence of success rates, as will be explored later in this paper. Whether such success may be deemed “sustainable” is not clear, and it may be advisable to look for economic sustainability as it occurs in conjunction with other factors.

### **The Links between the Legs**

Our attempts to isolate identifiable instances of sustainability by examining its primary components have met with mixed results. In each case, it has seemed advisable to look aside from the category proper, toward an interaction between the stabilities of sustainability. Ample study has certainly been devoted to these areas; a complete review demands an examination of the links between the legs of sustainability.

#### *Socio-environmental factors*

The interaction between social and environmental factors of sustainability, while inherently complex, is perhaps more easily understood than either of the two legs alone. A good example is in the concept and implementation of sustainable agricultural practices. By definition, “a sustainable agricultural system is one that can indefinitely meet demands for food and fiber at socially acceptable economic and environmental costs” (Crosson 1993, 38). The development and promulgation of the technologies

necessary to achieve this level of sustainability would seem to be reduced to a matter of simple logistics after cultural and regulatory hurdles are overcome.

The primary issue where society and environment intersect is human population growth. Cooper (1998, 19) notes that “as global population continues to mount, so does the strain on the environment, as people move into previously uninhabited areas and consume ever-increasing amounts of natural resources.” Hopfenberg and Pimentel (2001, 1) state that,

Of all environmental problems, rapid human population growth is arguably the most detrimental. In fact, escalating human population is fueling the acceleration of all environmental problems.... In many places, the number of humans exceeds the carrying capacity of the area in which they live.

However, people are made out of food -- and eventually a limit on the amount of food produced will stabilize population growth. Yet, this harshest of solutions to population growth need not necessarily be realized. Many developed countries have already reduced their fertility rates to or below replacement rates. Developing countries are following suit as their infrastructures are built and cultural norms overcome to the point where a meaningful social position for women is achieved. Timmer (1994, 262) confirms that “education of women is the dominant empirical factor associated with the decline in fertility ... over time.” It is not inconceivable that substantial contributions to stability in both society and the environment may be realized in the examination of the interaction of the two factors – a new study of socio-environmentalism (Lehtinen 2006).

#### *Enviro-economic factors*

In the 1970s, industry’s stake in environmental stewardship was on the decline, as there were fewer and less profitable motivations for maintaining environmental integrity.

Since then, interest has been renewed, particularly as regards the husbandry of biodiversity. This is not surprising, as it is estimated that sales of plant-based pharmaceuticals in the US reached \$15.5 billion in 1990. “Currently, some 25 percent of U.S. prescriptions are filled with drugs derived from plants” (Reid 1994, 49). In something of a turnabout, some specialists are calling for increased regulation governing the harvesting of biological specimens, or “bioprospecting,” as it has come to be known (Tan, et al. 2006, Koopman 2005, Lodge 2004). Highly biodiverse countries have ample incentive for such regulations as they to make large profits from regulated sales and licensing. It has also been suggested that “governments have a responsibility to invest a share of the national benefits of bioprospecting in rural development” (Reid 1994, 52; Timmerman, et al. 1999; Kursar, et al. 1999). Whether such development contributes to environmental stability and sustainability is open to question. There is little doubt, however, that the development of local bases of operation will facilitate bioprospecting ventures. This will in turn lead to economic growth, and thus contribute toward economic stability and sustainability. Economic considerations and environmental concerns make strange bedfellows, but such interaction is possible and offers potent new avenues for the establishment of sustainable practices in both fields.

#### *Socio-economic factors*

The major destabilizing socioeconomic factor is poverty (Timmer 1994, White 2002). The limited income of the world’s poor largely consists of “common property resources,” including such basic necessities as firewood and water, and even the community’s own children – factored as laborers. “In this paradigm, poverty, population, and the environment are closely linked, and common property resources are the central element

explaining externalities within each component” (Timmer, 261). Yet, concomitant with high levels of poverty are high birth rate, low birth weight and size, and ultimately, a further degradation of the meager common property income upon which survival depends. This downward cycle of poverty can, according to Timmer (*ibid.*), be broken only by firm governmental policies enforcing a four-step process. First, agricultural productivity must be increased, on the argument that “for a given level of per-capita income, a higher share of GDP originating in agriculture contributes to a more equal distribution of income” (*ibid.*, 264). Greater efficiency is demanded, in terms of technique and infrastructure. Second, overall domestic food production levels must be increased, as this historically has proven to be strongly correlated with success in alleviating poverty. Having established more efficient methods, there must be a corresponding increase in production. Third, economic and environmental sustainability must be achieved with respect to both agricultural productivity and production. This third requirement is somewhat curious. Timmer seems to be suggesting that greater sustainability is to be achieved by insisting that increases in efficiency and production themselves be sustainable. Perhaps he is simply reiterating the need to maintain a level of sustainability as one approaches a more enduring level. Fourth, government must be prepared to address market failures if the cycle of poverty is to be broken. Achieving and maintaining high levels of efficiency and productivity can still fail if the market in which the product is to be sold is unstable. The implementation of these steps should produce a stronger local economy, and improvements in health and standards of living generally, all while being sustainable. There may be a problem lurking in its strictly local approach, however. Further examination may disclose the conditions necessary to achieve a



measure of sustainability resident in the socioeconomic interaction at regional or global scales.

### **Meeting in the Middle**

In the course of the aforementioned recent regional development debates in England, it was determined that “a better quality of life” (Haughton & Counsell 2004, 143) would result from meeting four objectives:

- Social progress which recognizes the needs of everyone;
- Effective protection of the environment;
- Prudent use of natural resources;
- Maintenance of high and stable levels of economic growth.

While this may appear to be but a restatement of the *Limits* admonition, it is instead an example of the intersection of the three factors. The conclusion demands a comprehensive integration of all of the factors of sustainability, as any lesser attempt would diminish the effectiveness of the effort. Munasinghe (1992) identifies several factors that reside at the intersection of the three legs of sustainability, including poverty, equity, climate change, and, interestingly, sustainability itself. Of these, the looming menace of global climate change presents the greatest threat, and the greatest challenge, as it amplifies the problems attendant with all other considerations of sustainability. Any serious consideration of global sustainability must take this threat into account. Firm, enforceable policies must be emplaced to assure the reduction of greenhouse gas emissions contributing to the effect. Additionally, provisions must be made for the amelioration of those effects currently being felt, in addition to those anticipated in the near future (Töpfer 2004). The world faces staggering, incomprehensibly large, and

devastatingly frequent losses if the threat of global climate change is not immediately addressed. Under the circumstances, any question of sustainability must be given highest priority, lest it become inconsequential.

### **Defining Globalization**

The advent of the industrial era gave rise to increased efficiency in production, transportation and communication, facilitating the next step in humanity's conquest of the world. This process has become ever more streamlined with advances in technology, and has culminated in a condition wherein anything may be produced and/or sold anywhere on the globe, with little elapsed time. The fact that time and distance have all but ceased to be operant factors in the cost of doing business has transformed markets the world over. Raw materials & labor can easily be transported to physical plants, if convenient; otherwise, the plants can be relocated to materials sources or labor pools as the market of the moment dictates. Electronic media assure that the availability of goods and services are announced everywhere simultaneously. Goods and services can be shunted to points of sale the same day. The effect that this has had upon the behaviors of producers, consumers, advertisers, laborers, shippers... *all* parties in the supply and demand chains – has been transformative. The effect itself is pervasive, as it arrives wherever there is a market disparity to be exploited; new participants are often easily enticed with shiny new products or the promise of profits undreamed of. The overall socioeconomic effect has lately been given a name: *globalization*. In theory, this condition represents the ultimate consolidation of a single global economy; in practice, political and cultural boundaries have frequently posed a hindrance to this final economic homogenization. In fact, it is when the effects of globalization encounter such resistance that they are most visible.

The agents of globalization are many, and the economic rewards are tremendous. As new, formerly remote markets are opened, the prices of labor and raw materials rapidly fall. The resulting profit potential is huge and businesses *must* take advantage of the situation in order to remain competitive. Proponents of globalization contend that the efficiencies enhanced by the globalization effort will result in more than just profits, but in a multitude of benefits, especially for the world's poor (Dollar and Kraay 2002). Improved infrastructure, healthcare, and education are but a few of the promised benefits.

On the other side, opponents of globalization contend that the effects of globalization are not uniformly experienced, resulting in a polarization between globalization's beneficiaries and those marginalized in the process (Sen 2002). Further, loss of national and/or cultural identity results from the sudden immersion of a people or region in the global wash of products and media introduced by globalization (*ibid.*). With respect to the three legs of sustainability, these effects are not immediately of either environmental or economic concern; the social impact, however, is significant.

## **Interactions**

### *Sustainable Development*

Sustainability and globalization meet in the arena of *sustainable development*. The basic tenet is that resource utilization can continue indefinitely, if conducted in a "responsible," i.e., somehow sustainable manner. This protocol, it is supposed, can lead to a state of long-term, equitable economic growth and prosperity for all. The literature below provides a glimpse of some of the parameters that might lead to such a utopian outcome.

A brief sampling of recently published articles addressing studies in sustainable development provides an interesting overview of the general understanding of the concept and its importance. Energy is presented as integral to the sustainable development equation in Africa and the Middle East. Alanne & Saari (2006, 539) suggest more local coal- and oil-fired generation of energy as a key solution for sustainable development in Africa, as the use of fuel wood is becoming problematic, “particularly in the Sahel.” The development of renewable energy facilities (such as solar and wind farms) and more efficient distribution is *the* answer to sustainable development in Africa, according to Bugaje (2006). Van Buskirk (2006), limiting his study to Eritrea, insists that sustainable development in that country is solely a function of the extent of investment in energy efficiency and renewable energy. The contention is quite simple: the more money is spent on research and development of technologies for energy production, distribution, and use in Eritrea, the more sustainable will be that country’s development.

Other studies seem more interested in contributing to sustainable development than in actually achieving it. Saudi Arabia is energy abundant but can still contribute to sustainable development by implementing an energy conservation program (Al-Ajlan, et al. 2006). Alterkawi (2006) offers a FORTRAN-generated solution to the optimal placement of Riyadh’s bus stops, expressly citing the sustainable development aspects of the consideration. On a more global scale, Toledo & Burlingame (2006, 477) discuss the importance of a “link for sustainable development” in terms of the “use of biodiversity in programmes contributing to food security and human nutrition.” Specifically, they call for additional research to determine how much food is consumed by individuals of

various species of food animals. If cattle yield more food per pound of fodder than do pigs, for example, then cattle are the more efficient, and thus more sustainable, use of the available fodder. Likewise, genetically modified variants may be yet more efficient than their generic counterparts. Oudinet (2006, 278) suggests that “the establishment of a sustainable development in urban areas” would be “helped” by a study “considering global incidence of air pollution on asthma and on peripheral blood lymphocytes.” A greater understanding of the effects of certain air pollutants on these specific health indicators could, it is suggested, help in the direction of abatement measures toward a more sustainable condition.

One recent study uses a computer simulation to isolate a single, comprehensive solution to the problem of sustainable development. Kohring (2006, 214) reports on “Wonderland, a compact, integrated economic, demographic and environmental model.” In the study, various iterations of Wonderland are run, incorporating changes in variable values. Results from these runs establish a bi-phasic “parameter space.” Of the two phases, one “contains the property of long term, sustainable development.” The significant difference between the phases was that the sustainably developed iterations were achieved through the *levying of pollution taxes*. However else the input variables were modified, when this specific abatement measure was not imposed, the results were not sustainable. When such taxes were levied, “systems in an initially unsustainable region of the phase diagram” were moved “into a region of sustainability while ensuring minimal regret with respect to long-term economic growth.”

As a final example of the current work being done in the area of sustainable development, Mog (2006, 531) explains how *process* is vital to the effort (emphasis added):

As sustainability becomes an increasingly common goal of international development programs, the need to focus on processes in addition to outcomes in program design, management, and evaluation becomes more apparent. ...integrating development and research through adaptive management can help focus programs on process and sustainability. The case study programs were *found to be effectively contributing to sustainable development, not because of a commitment to any particular quantifiable outcomes, but because of a willingness to engage in an evolving, learning-oriented process* that is responsive to local people, integrates development with research, and is rooted in adaptive management.

A positive contribution to sustainable development is apparently achieved, not by any particular accomplishment, nor by attaining any goals or even committing to specific outcomes -- but with a simple willingness to participate in learning about the program.

There are thousands of references to *sustainable development* in recent literature, similarly scattered across a wide variety of topics and interests. In some cases, the purpose of including the concept appears to be to add weight to the importance of the project reported. In others, the goal genuinely seems to be the attainment of sustainable development – however that may be understood by the authors. In short, the idea of sustainable development appears to be applicable whenever there is a proposal that is intended to increase efficiency or improve quality of life.

When the literature specifically relates sustainable development to globalization, however, it becomes much more specific, and more pointed. Houghton (1994) examines the effects of land use on land cover, globally, over time. He attributes land-use changes to global forces, including economic development, international trade, population growth,

and environmental degradation, and concedes that “in the future, climatic change may also be important” (*ibid.*, 10). His conclusion is that a new definition of *development* is required, *such that the sustainable use of resources is attainable on a worldwide basis.*

Many popular articles appear to use the terms *sustainability* and *sustainable development* interchangeably. The conflation of the concepts appears to lie primarily with the assumptions of economists. One recent study examined “the conditions under which optimal growth might be sustainable, by assessing the costs and benefits of growth” (Islam, et al. 2003, 149). Their reasoning was interesting:

Currently, traditional development issues such as economic stagnation, poverty, hunger, and illness as well as newer challenges like environmental degradation and globalisation demand attention. Sustainable development, including its economic, environmental and social elements, is a key goal of decisionmakers. Optimal economic growth has also been a crucial goal of both development theorists and practitioners.

Note that the “development issues” that are cited as “traditional” are of a primarily socio-economic nature, and that the first of these is “economic stagnation.” Note also the misuse of the phrase “sustainable development” in place of “sustainability,” and the primary placement of “economic” among its elements. Finally, note that “economic growth” is cited as a “crucial goal” among the groups for whom the article was written, namely theorists and practitioners of development. The very focus of the study, “the conditions under which optimal growth might be sustainable,” emphasizes economic growth – and the method is to be a cost-benefit analysis. From the standpoint of economists, growth and development are assumed to be integral to the sustainability equation; by such reasoning, sustainable development and sustainability must be exactly synonymous.

Given the economic biases of the researchers, the study proves all the more interesting. The model (*ibid.*) plotted resource depletion, pollution, and “other environmental effects” as *independent* variables, factoring in irreversibility and uncertainty, against “savings, investment, technical progress, substitutability of productive factors, intergenerational efficiency, equity, and policies to make economic growth more sustainable.” Even in view of this rather novel approach, the results are telling:

The empirical results support growing concerns that costs of growth may outweigh its benefits, resulting in unsustainability. Basically, in a wide range of circumstances, long term economic growth is unsustainable due to increasing environmental damage... Further research is necessary to seek conditions under which alternative economic growth paths are likely to become sustainable.

In spite of a strong bias toward the primacy of economics among the pillars of sustainability, and the resultant conflation of sustainability and sustainable development, it is *still* concluded that sustainable development is difficult without sustainability (in the form of environmental stability).

#### *Sustainability with Globalization*

Globalization has recently been cast as the culprit in the destabilization of two of the three legs of sustainability. Environmental degradation is frequently laid at globalization’s door, as is social stability. Borghesi & Vercelli (2003, 77) summarize the interaction:

The recent process of globalisation of international markets has managed to sustain the economic growth of the countries that have actively participated in this process. The available empirical evidence suggests, however, that it has been accompanied by a world-wide increase in environmental degradation and economic inequality. Therefore, there is growing concern that these features of the globalisation process may jeopardise its social and environmental sustainability.



Falk-Rafael (2006) and Jorgenson & Burns (2004, 7) found nearly identical results. The latter report their findings relating to the effects of globalization in “less developed countries,” stating that globalization has a “significant negative impact on the environments” of such countries. Evidence of environmental degradation in the form of water pollution, and thus to infant mortality, is attributable to the effects of globalization in those locales. Leichenko & Solecki (2005, 249) reach similar conclusions with respect to suburbanization in less developed countries (LDC):

Two of the central concerns raised in many analyses of the impacts of globalization include the problems of accelerated environmental degradation and income polarization. Both concerns — which suggest that globalization in its present trajectory is neither environmentally nor socially sustainable — are relevant for understanding LDC suburbanization. The spread of suburban development and the shift to higher consumption lifestyles will have serious negative implications for the environment through effects on land-use conversion, water and energy resource demands, and air and water pollution levels.

In each of these cases, however, environmental and social stabilities have suffered at the expense of thriving economic growth in the places where they have occurred. Douglas (2006, 123) touches on globalization’s influence in terms of per-capita consumption among upper economic strata.

Economic globalisation has led to a huge increase in demand for food, goods and services by expanding urban middle class populations. These demands cause environmental changes that in turn feed back upon the urban environment and human population.

Economic instability due to globalization will appear in the current study as increasing gaps between the highest and lowest income tiers of society.

*Recursive Interaction*

Concepts in both sustainability and globalization have different specific foci of attention; it is not uncommon to see various viewpoints within either group at odds with themselves. For example, conservationists and alternative-energy proponents are currently in conflict over the employment of wind farms (Pasqualetti, 2004). The global insurance industry is mixed over its acknowledgment of the effects of climate change; it is variously projecting colossal economic losses unless immediate and drastic precautionary and ameliorative measures are taken (Töpfer, 2004), while its underwriters invest ever more heavily in globalization projects. The emphasis from Munich Re, the world's largest reinsurer, is as heavily placed upon the *business opportunities* afforded by the climate change-driven potential for loss as upon the losses themselves (Greiner and Wasserle, 2004).

### **Foci of the Research**

#### *A Statistical Basis*

In order to critically examine the question of the viability of sustainability in the face of globalization, it is first necessary to firmly establish a link between the two. Sustainability is a potential based upon three types of stability, whereas globalization is a socio-economic effect. The association sought in this case must be in the form of the globalization effect having a measurable impact upon some or all of the stabilities that determine the potential for sustainability. The association can be determined statistically by calculating the correlation between indicators of both globalization and sustainability. Specifically, the degree to which the variability in environmental, social, and/or economic stability can be explained by the indices of globalization is the determinant of the target association. In the current study, indicators are available for globalization and

environmental factors; statistical analysis provides compelling results. With globalization's ability to account for sustainability's variability thus confirmed, the research question will have been validated.

#### *Another Approach*

While there will have been established a clear statistical correlation between globalization and environmental factors, determining the effects of globalization on social stability requires a different approach. Social instability is generally indicated by instances of protest or violence in response to poorly implemented systems of justice, and/or perceived inequalities in the distribution of wealth, availability of goods and services, and opportunities for advancement. Social stability should thus be indicated (at least) by a lack of such protests and violence, presumably due to sufficient provision for these same amenities. It would however be tremendously difficult to establish a working measure of the absence of certain social behaviors for any reason, much less for the specific reasons mentioned. Even having established indicators of social satisfaction, the question would remain whether the operant lack of violence and protest is resultant, or due to suppression or some other cause. Another approach is indicated.

By examining the socioeconomic effects of globalization directly, it is possible to discern a causal link between them and the destabilization of organizational structure, in addition to a diminution of the cultural integrity that provides for social cohesion. When societies are impacted by globalization, boundaries are breached. These boundaries are found at the levels of state sovereignty and cultural identity. Such breaches are often perceived as threats, and resistance is offered thereto – sometimes violently. But even when (perhaps *especially* when) the effects of globalization are welcomed without

resistance, the efficacy of state sovereignty is diminished, and the values that determine cultural identity are diluted. While not easily measured, globalization's effects on society are frequently stark and clear, and the factors that lend themselves to social stability are threatened thereby.

#### *A Chilean Case Study*

A portrayal of the data sets used in this study displays countries arrayed according to their variable interactions. Chile is among the countries most medially placed in these arrays, and was selected for a case study to examine globalization's impact on economic stability, as well as its effects on environmental and social factors. Due to Chile's rather turbulent history over the last three decades, globalization has had a more rapid impact on the country than most others; due to the neo-liberal economic policies introduced during that time, globalization has had a more pervasive effect there as well. Five Chilean cities were visited, ranging from a small fishing village to a teeming metropolis of six million. Due to Chile's unique geography, a wide range of environmental, social, and economic patterns was observed throughout the study. This range of observation had the effect of rendering the effects of globalization glaringly visible in some cases, and seemingly absent in others – as might have been anticipated in the overall medial placement of the country among the indicators. The contrasts afforded in the study provided new insight on the overall viability of the study question as stated, as the examination of the various stabilities establishing sustainability falters in favor of a new paradigm.

#### *The Normative Question*

Having established a correlation between globalization and sustainability, the normative question of what should be done about it arises. The stakeholders in

addressing the question are more than simply the proponents of each of the variables, but their opponents as well. The ethical examination of globalization's impact upon sustainability is necessary to the extent that there is a strong interaction. If sustainability is sufficiently hampered under the influence of globalization, allowing such interference to continue is *ipso facto* not sustainable, as quality of life in general is threatened thereby. To the extent that the phenomena of sustainability and globalization are global events, the ethical question gains significance in proportion.

**Chapter Two**  
**Environmental Degradation with Communication:**  
**A Piece of the Sustainability Puzzle**

Sustainability refers to the idea that future generations might thrive in their environment to an extent equal to, or greater than, that enjoyed by the current generation. This concept is practicable to the extent that there is stability: specifically, environmental, social, and economic stability (Meadows, et al, 1972). Yet, it has been observed that the phenomenon of globalization may have destabilizing effects in precisely these same arenas (Sen, 2002). Worse, proponents of globalization counter such suggestions with contentions to the contrary, suggesting that globalization is actually good for sustainability (Dollar & Kray, 2002). Each side, of course, cites its own evidence, based upon different criteria.

In order to determine the effects of globalization upon sustainability, the immediate problem is in defining and quantifying the terms. As will be seen, the language of both concepts is slippery, meaning different things to various groups. The Center for International Earth Science Information Network (CIESIN) at Columbia University (2002), in conjunction with The World Economic Forum in Geneva and The Yale Center for Environmental Law and Policy, has compiled and maintains a massive amount of data relating to sustainability by quantified indicators, resulting in a composite Environmental Sustainability Index (ESI). The ESI enjoys significant popularity among policy makers, and is quickly becoming the standard measure in discussions of global sustainability. However, the methods employed in the compilation of the ESI have been seriously challenged (Jha and Murthy, 2003), and an alternative measure offered — the Environmental Degradation Index (EDI). Using similar indicator-based methods,

*Foreign Policy* magazine, in conjunction with A.T. Kearny, a management consultancy firm in Chicago, has compiled and maintains a Globalization Index (GI) (*Foreign Policy* and A.T. Kearny, 2004). The methods used appear to be sound, and the indicators appear to be both measurable and valid. The EDI and GI will be used in this study to determine the strength of the correlative relationship(s) between sustainability and globalization using multidimensional scaling (MDS).

Non-metric multidimensional scaling is described (Kruskal 1964) as a method for finding relationship between dissimilarities among items in a matrix and the Euclidean distance between them, such that the distances are ordered in a way that most closely matches the order of dissimilarity. The process is non-metric due to the ordinal nature of the data sets used in the calculations. Monotonic regression is used in multiple iterations to find the order of distances between points that best fit the order of dissimilarity. Once the best fit values are determined, the points are plotted in two or three dimensions, as opposed to the (much larger) number of dimensions determined by the number of attributes.

In the current study, the total data set consists of 14 attributes associated with 61 countries, arranged by rank order. Each country is represented by a point that moves within the matrix established by the attributes. A 'perfect fit' among the attributes, point by point, would result in a linear array of points. When the best fit results in a point being plotted at some distance from this optimal center line, or vector, the resulting disparity is referred to as "stress" (*ibid.*). Best fit is the result of a point configuration that results in the least total stress. Due to the large number of possible point configurations, there are frequently multiple best-fit arrangements of points.

## ***Methods***

### *Data:*

*Foreign Policy* magazine in conjunction with A.T. Kearny (2004) published a Globalization Index (GI) consisting of 62 countries ranked across 14 indicators. The indicators included trade; portfolio capital flows (portfolio); foreign direct investment (FDI); investment income; international telephone traffic (telephone); international travel and tourism (travel); remittances and personal transfers, including worker remittances, compensation to employees, and other person-to-person, non-governmental transfers (R&PT); internet users; internet hosts; secure servers; international organizations; UN peacekeepers; international treaties ratified (treaties); and government transfers. The indicators were selected based upon their ability to be grouped into four “baskets,” which could then be ranked separately. The four categories were economic integration (trade & FDI), technological connectivity (internet users, hosts, and secure servers), personal contact (travel & tourism, international telephone traffic, and R&PT), and political engagement (membership in international organizations, contributions to UN peacekeeping, international treaties ratified, and government transfers). The index’s authors (*ibid.*, 58) explain the details of its calculation:

For most variables, each year’s inward and outward flows are added, and the sum is divided by the country’s nominal economic output (as measured by GDP) or, where appropriate, its population. Two of the political engagement indicators remain absolute numbers: membership in international organizations and number of treaties ratified.... A country’s contributions to U.N. Security Council missions are measured as a weighted average of financial contribution divided by the country’s GDP and the country’s personnel contribution divided by the country’s population. As such, the indicator counts as a country’s contribution relative to its capacity to contribute, rather than the absolute size of contribution. This process produces data for each year, enabling comparison of countries of all sizes.



The Environmental Degradation Index (EDI) was created by Jha and Murthy (2003) as a preferred alternative to the popular Environmental Sustainability Index (ESI) created by the Columbia (2002) group. Jha and Murthy considered the ESI flawed due to its inordinately high reliance upon the Human Development Index (HDI) established by the United Nations Development Programme (UNDP 2006). The ESI is calculated based upon the assumption that environmental sustainability is directly proportional to social and economic stability, for which the HDI serves as proxy. Jha and Murthy consider this linear relationship suspect, and suggest that the true relationship follows a curve – a rather specific curve. Their EDI consists of 174 countries ranked by a composite of six indicators plotted on an inverse *Kuznets* curve, “an inverted U-shaped curve designed to explain the interdependence between levels of economic development and environmental degradation” (Jha & Murthy 2003, 3)<sup>1</sup>. The indicators included annual per capita fresh water withdrawals, fresh water withdrawals as percentage of water resources, printing and writing paper consumption per capita, per capita CO<sub>2</sub> emissions, share of world total CO<sub>2</sub> emissions, and rate of deforestation. The ranking was based upon a single composite factor, weights for each component variable having been established using principle component analysis (PCA) (see *ibid.*, 24-29 for further details of the factor’s calculation).

The intersection of *Foreign Policy*’s 62 countries and Jha & Murthy’s 174 countries was found to have 61 countries in common. The data was compiled into two lists with the shared countries and ranking for each list member within each set was adjusted to reflect the reduced sizes.

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<sup>1</sup> A similar relationship between income growth and income inequality was found by Kuznets in 1955.

*Analysis Tool:*

“PerMap” (Heady & Lucas, 1995) is an interactive, multidimensional scaling (MDS) program enabling the manipulation of large data sets, in upwards of 18 dimensions, in real time. Unlike principal component analysis (PCA) (which requires the use of interval or ratio scale data), MDS is designed to depict a relationship between dissimilarity (of attributes) and distance (between points) based upon any level of data. There are hundreds of examples in recent literature of the use of non-metric MDS, examining problems in such disparate fields as biology, psychology, sociology, and information science. Tapio et al. (2003) used PerMap in their analysis of protein variations among various breeds of sheep. In the current study, using ordinal data, PerMap *ordination* generates the display of a non-metric representation of the best fit between the order of dissimilarity and the order of distance contained in the point-attribute matrix. In this respect, it is similar to hierarchical cluster analysis. PerMap calculates a regression ‘scatterplot’ in the number of dimensions for which attributes have been input. By using any of several user-selected stress factors (allowing variable degrees of divergence from the centerline, or vector), the program generates solutions (of least stress, according to the stress factor selected) so as to be displayed along pseudo- x-y axes, according to best fit. (Various projections of the earth do the same when they attempt to portray three global dimensions on a two-dimensional map.) The resulting two-dimensional display is not truly Cartesian – the apparent axes along which the data are plotted cannot be labeled, in that they are not representative of two discrete variables but a composite of many. The PerMap display is not a graph; it is a projection (it may be helpful to think of it as the portrayal of a model, like a big molecule). Distances are calculated by any of several

user-selected methods, and then stretched or compressed to enable a two-dimensional projection. Best fit is determined by which orientation of data points produces the least overall stress on the projected set.

*A Note on Multi-Dimensional Scaling*

With traditional, two-dimensional scatterplots (aka “scattergrams”), “the strength of association between two variables can be determined by examining the amount of spread” in the distribution of points plotted (McGrew & Monroe 2000, 195). A perfect association between two data sets would result in a linear array – in other words, no spread across a range of values. No (zero) association between the sets would result in a randomly plotted, highly dispersed array with a nearly circular shape. A weak association would display a tighter distribution of points in the array, resulting in an oblate “football” shaped pattern, disclosing an axis. The stronger the association between the data sets, the tighter the constriction about the axis – resulting in less of a “football” shape, and more of a “cigar” shape. In a Cartesian scatterplot, the angle at which the axis of the array is incident to the axes (positively or negatively inclined) indicates whether the association is direct or inverse.

MDS arrays are similar to their Cartesian cousins, in that strength of association can still be gauged by the amount of spread in the scatterplots. Due to the potentially high number of dimensions being represented, however, MDS arrays may not display significant narrowing unless the overall degree of association is quite high, and/or the number of input variables is relatively low. Further, “angle of incidence” is a meaningless concept across multiple dimensions; thus, MDS arrays are displayed in angular configurations convenient to their authors (they are rotationally arbitrary). No

inference can be made as to positive or negative associations among multiple variables, as there may be any combination of both present, and no particular orientation is the “right” orientation (there is no “up”). Further, the multiplicity of dimensions precludes the use of labeled axes in displaying MDS arrays, as, in a cursory inspection, it is impossible to determine which variables are contributing what proportions to a best-fit display. The apparent axes in an MDS display are hybrids resulting from the input of multiple variables; they cannot be meaningfully drawn, much less labeled. Further, there may be multiple, equally-valid solutions to an MDS problem, resulting in displays that may have radically different orientations – yet little in the way of two-dimensional display differences<sup>2</sup>. Since the PerMap display is *not* a graph, however, none of the uses anticipated from a graph can be applied.

The advantages to using MDS are tremendous. In most cases, the total number of input variables will be but seldom used. Instead, the variable data sets can be used in a recombinant manner, in real time. In a simple illustration, data sets “apple,” “orange,” and “carrot” may be input using the attributes “fruit,” “vegetable,” “spheroid,” “red,” and “orange” (color). Using all of the variables simultaneously, the scatterplot would display a compressed, two-dimensional representation of a five-dimensional diagram constructed according to best fit among the three data sets. The display would indicate a weak association, as most of the sets would display but two and, at best, three of the five attributes. By reducing the number of attributes to three, however, say “fruit,” “red,” and “spheroid,” two of the three data sets (2/3) are similar in the “fruit” attribute, 1/3 in the

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<sup>2</sup> An interesting example in the current study finds solutions for the data set ‘Botswana’ equally balanced, or stressed, in two different locations. After two-dimensional rendering, Botswana may be plotted well ‘above’ the axial line in some cases, and well ‘below’ in others. The values for the plot, however, remain the same.

“red” attribute, and 2/3 in the “spheroid” attribute. Compressing but three dimensions to two, the resulting scatterplot would be a simpler reduction, and display a much tighter array, indicating a higher association than within the entire set. New combinations could be tried against each other, and pattern discerned with no further data input or calculation on the part of the operator. Internal (within-set) correlations can be discovered for the purpose of data reduction (as in PCA). Multiple between-set calculations can be performed in a fraction of the time required by other statistical tests (such as cluster analysis). Best of all, MDS accommodates nominal data, as in the above example, or ordinal data – the scale of data available for this study. Due to the ranked nature of our data set, very few statistical functions can be performed, especially inasmuch as there is no within-sample covariance, as over time. Using MDS, regression analysis is possible with monotonic data, as the multidimensional stresses on the links between points provide the means for statistical analysis in their own right.

In the current study, 61 data sets (countries) display 14 attributes related to globalization, and one (composite) attribute related to environmental degradation, by rank order in each category. Once the data are input, any number of attributes may be selected (by code designation) for calculation. The PerMap display demonstrates, in real time, the multiple iterations necessary to compute “best-fit.” As soon as the analysis begins, the data sets, represented as small circles, coalesce in the center of the display, and then begin a slow dance, bumping and jostling against each other, in search of the configuration that represents a condition of least overall stress (least variance from the mean). Once such a configuration is found, the group spreads out to a distance optimal for display purposes, while retaining proportionality. The overall stress values are

displayed thereby enabling a quick determination that the desired level of stable configuration has been reached. If the value is unsatisfactory (stabilization can occasionally occur at high stress levels, as in the partial collapse of a building, for example), or the operator simply wants to give the operation another chance, a “jiggle” button can be pushed to slightly reshuffle the sets, and allow for a new resettling. Once a stable solution is displayed, statistical data are available by point (e.g., by country) and by relation (such as Rsq), including stress values and outliers. An understanding of the solution’s “depth” is thus available according to the degree of stress induced in the links between any given pair of points. For the current study, the most useful of these tools is the coefficient of determination (Rsq) display, which determines the “fit” of each attribute against the field selected. The degree to which an attribute’s vector fits against the input field is displayed in its own window by means of a scatterplot.

The term *coefficient of determination*, represented in this study as  $r^2$  or Rsq, is the relative strength index for a regression relationship (McGrew & Monroe 2000). It is the ratio of the explained variation to the total variation in a variable:

$$r^2 = \sum y_e^2 / \sum y^2 = (\sum xy)^2 / (\sum x^2)(\sum y^2)$$

It is similar to the product moment correlation coefficient, but is used in different circumstances. McGrew & Monroe (2000, 217) explain:

Although closely related to the correlation coefficient ( $r$ ), the two indices have different purposes and interpretations. The correlation coefficient shows the direction and level of association between any two variables and does not imply a functional or causal relationship. The coefficient of determination, on the other hand, is used as a regression index to measure the degree of fit of the points to the regression line or the ability of the independent variable to account for the variation in the dependent variable.

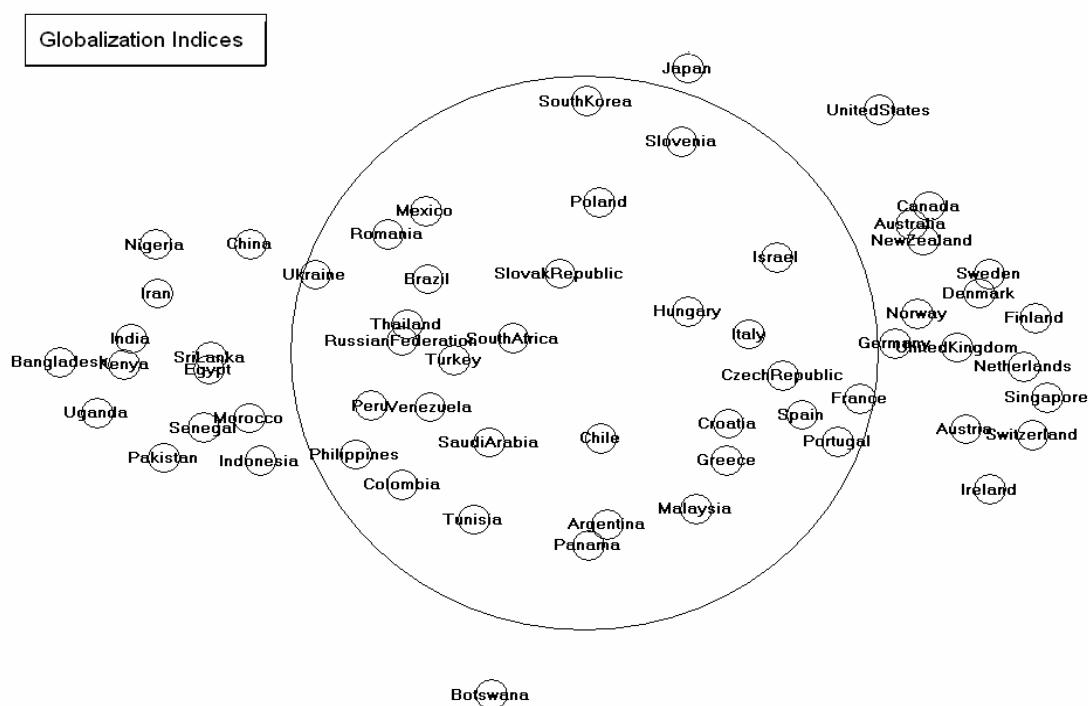
In other words, when used *within* the globalization variables of this study, the Rsq value for any given attribute against the remainder of the globalization data indicates the degree to which the variable tested fits with the rest of the group. High values (approaching 1.00) indicate a good fit; lower values (approaching 0.00) indicate a poor fit. Fitness, in this case, is a measure of how well any particular globalization index actually measures globalization, as compared with the remainder of those indices. When used *between* the globalization and environmental degradation index values, the Rsq value for any given globalization attribute indicates the ratio to which the degradation variability is attributable to the globalization attribute in question. When the Rsq value is high, the relative fraction of unexplained variability in environmental degradation is proportionately low. For the purposes of this study, Rsq values below 0.333 are deemed suspect, in that they indicate a substantial lack of fitness within group, and leave too much unexplained between-group variability. MDS generally, and in its PerMap application, is a particularly robust statistical test. It is conventional to provide the probability of error selected for a procedure when reporting statistical results; annotation usually appears as  $p = .05$ , or  $p < .01$ , etc. For the purposes of this study, all statistical reports may be assumed to have  $p < .001$ , unless otherwise noted.

An initial run on the full data set, including all of *Foreign Policy's* (2004) globalization index ranks (GIRr) and Jha & Murthy's (2003) environmental degradation index (EDIr) data, (the lower-case 'r' refers to the revised rank assignment to accommodate 61 countries) results in a relatively impressive correlation (Fig. 1), with





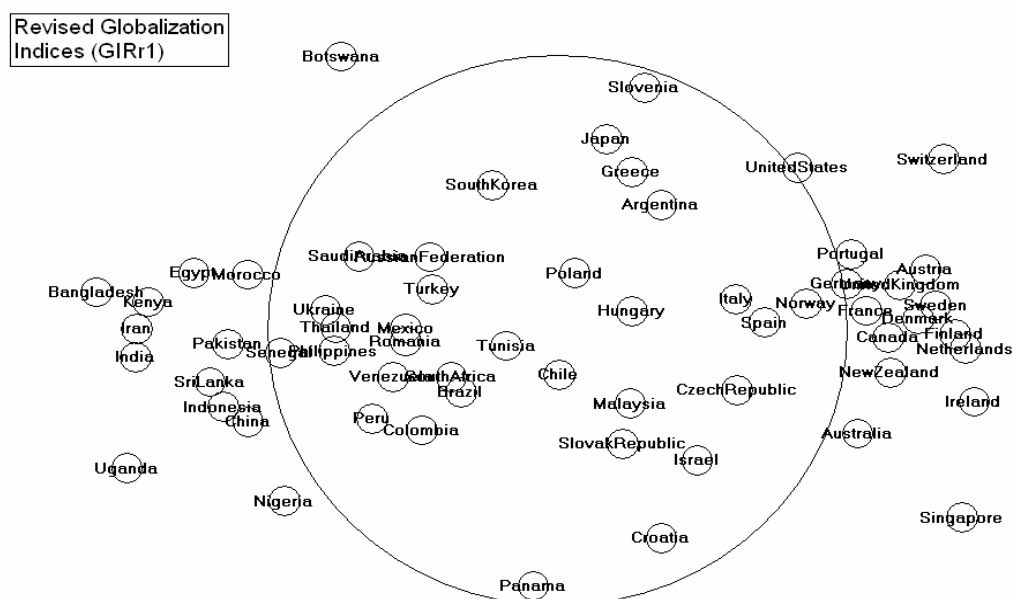
Calculations of coefficients of determination for each of the revised globalization rank indicators (GIRr) against the revised environmental degradation index (EDIr) disclosed a wide range (Rsq values from 0.056 to 0.850), as displayed in the program's "attributes" option under the "Map Analysis" tab. These figures would indicate either that some of the globalization attributes were far more accountable for environmental degradation variability than others, or that some of the globalization indices were less associated with globalization than others, or both. In order to determine which of the various globalization attributes were operant, a plot was performed for just the GIRr (Fig. 2). While there remains a slight linearity in this plot, it is definitely a weak correlation within the group as a whole. It was determined that four of the attributes had relative regression strength indices less than 0.333, and were thus not significant operators toward the



**Figure 2.** Correlation within the indices of globalization is tested. Four of the 14 tested had low strength indices ( $Rsq < 0.333$ ), and were rejected.  $Rsq$  for the remainder was greater than 0.500.

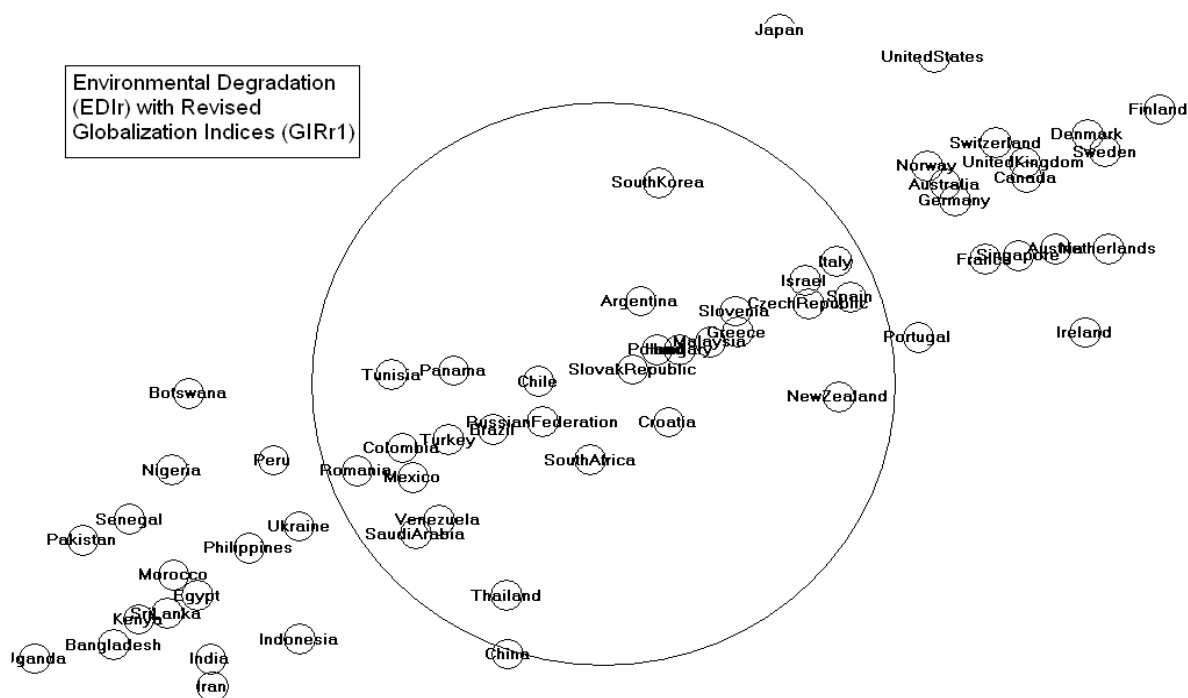
overall GIRr ( $p = .01$ ). The four attributes were “Treaties” ( $Rsq = 0.114$ ), “R&PT” ( $Rsq = 0.141$ ), “Trade” ( $Rsq = 0.153$ ), and “Government Transfers” ( $Rsq = 0.258$ ). These were removed from the database, as their “fit,” or relative contribution to the globalization trend established by the remaining 10 globalization attributes, was negligible. The remaining globalization indicators displayed significant relative regression strength ( $Rsq > 0.500$ ).

The new revision of the globalization index set (GIRr1), consisting of the ten remaining GIR globalization indicators, was then plotted for internal fitness (Fig.3). GIRr1 is a pseudo-value, as it is a single composite value of all the remaining globalization values. All values remained significant with internal strength index (GIRr1 against its components)  $Rsq = 0.986$ , and the plot was considerably tighter.



**Figure 3.** The remaining 10 globalization indices display higher internal correlation. The composite index, GIRr1, scored remarkably high ( $Rsq = 0.986$ ) against its components. All of the components are significant.

While the high strength index indicates a virtually perfect fit, a better solution was anticipated against the environmental index. A plot of GIRr1 against EDIr (Fig. 4) displayed even tighter correlation values.



**Figure 4.** Environmental degradation index with 10 indices of globalization display visibly strong correlation. The highest three correlates have very high regression strength ( $Rsq > .920$ ) – and are all related to communication.

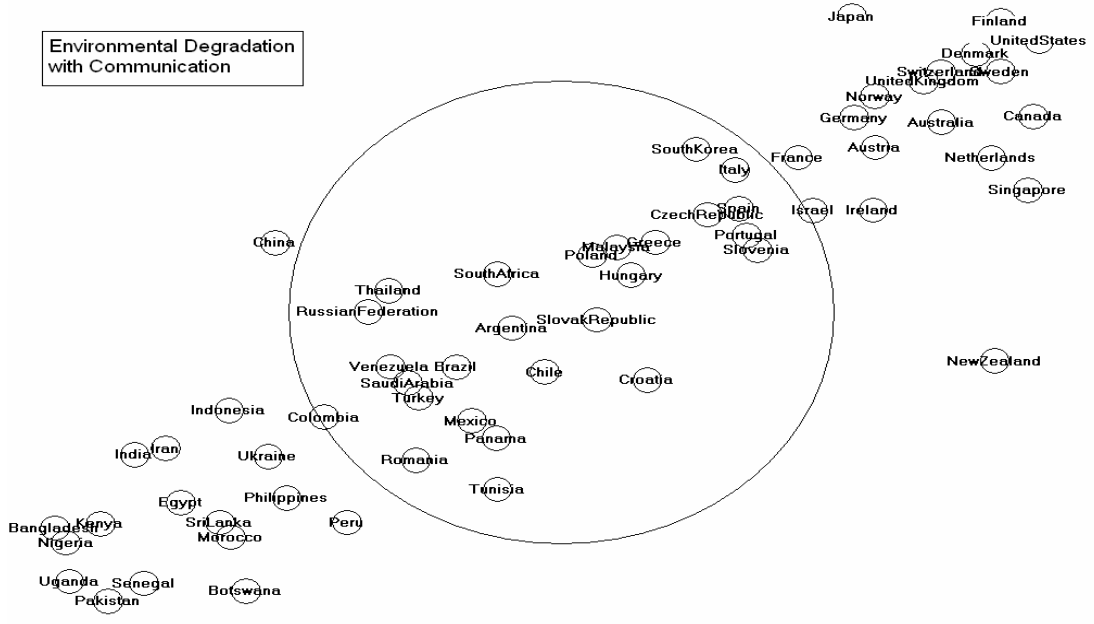
The display of internal fitness within the globalization indices has shown a range of values, even with the revision described above. The indices with the highest regression strength, however, were all related to communication (Telephone [ $Rsq = .917$ ], Internet Users [ $Rsq = .913$ ], Internet Hosts [ $Rsq = .922$ ], and Secure Servers [ $Rsq = .945$ ]). Further, these same indices also displayed the highest correlation to EDIr ( $Rsq = .844$ ,  $.921$ ,  $.931$ , and  $.948$ , respectively).

While it should be noted that these results are compelling in their own right, an additional exploration was conducted. (The following procedure and its results may be

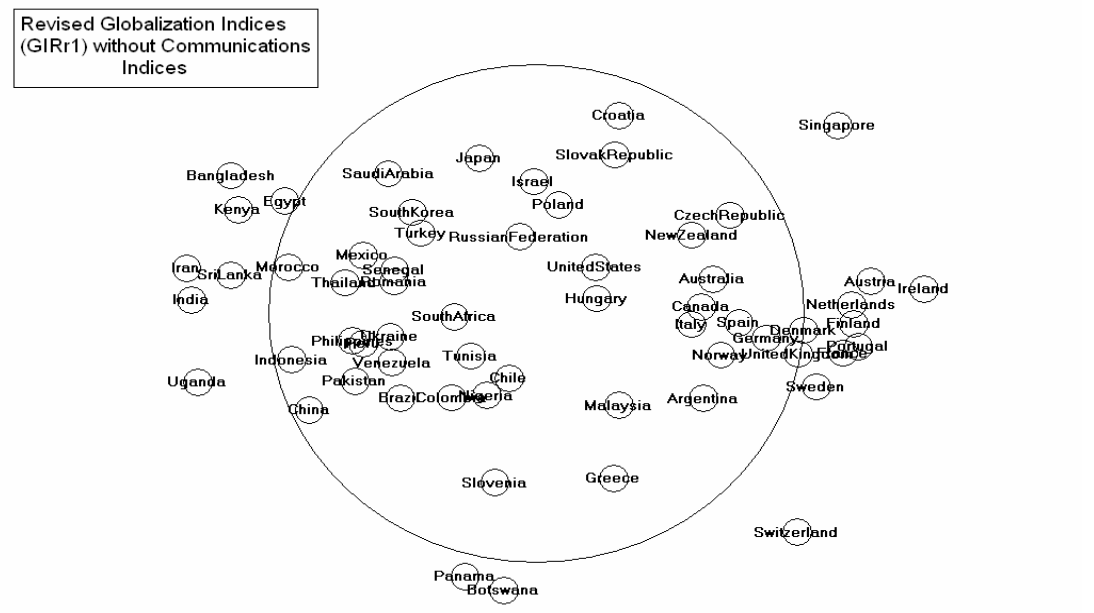
discarded without unduly affecting the outcome of the study). A slightly unorthodox approach<sup>4</sup> was used to determine just how operant these attributes were in the overall GIRr1, and in the aggregate correlation with EDIr. For all 61 countries, these four indices were summed, and a new ranked index was established, the Communications Index Ranking (CIR). The parameters under which summing ranked data might be permissible should be established. The author suggests that 1) there must be a high level of confidence that the intervals within data sets are regular [approximating a continuous scale], and 2) there is proportionality between sets whose members are to be added. The probability that these conditions are met is presumably high when the degree of correlation between the data sets in question is very high, as there is a correspondingly lower probability of significant stochastic variability. The plot of CIR with GIRr1 (Fig. 5) disclosed extremely high regression strength ( $Rsq = 0.977$ ). Further, the remaining six globalization indices, when plotted against themselves, and without the communication indices (Fig. 6), displayed substantially lower strength values. The most significant part of the GIR, and even GIRr1, is the CIR.

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<sup>4</sup> Strictly speaking, ranked data are not subject to summation. It might be anticipated that the rank orders in this example approximate a background continuity leading to regular interval proportionality (interval-level data *are* subject to summation). Given the high Rsq values displayed, identity is approximated, perhaps justifying the procedure.

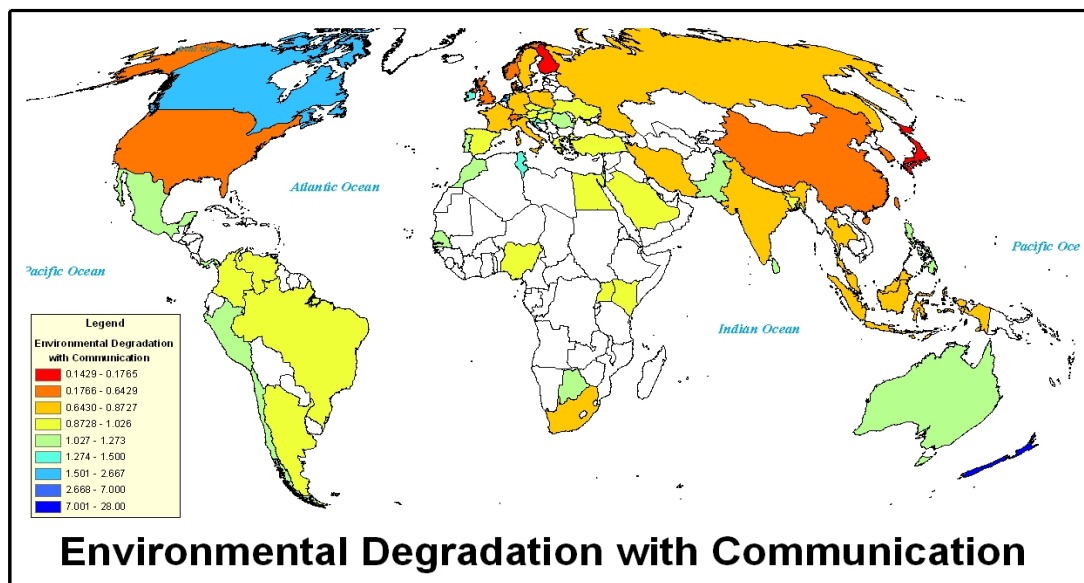


**Figure 5.** The attributes of globalization most responsible for the overall trend in globalization, and most attributable for variance in environmental degradation, are the four indices of communication. A composite communication index (CIR) is here plotted against EDIR. The regression strength ( $Rsq = 0.977$ ) in this relationship means that all but about 2% of the variability in environmental degradation, across 61 countries, is either causally or functionally related to communications technology



**Figure 6.** With the four communications indices removed from the globalization set, minimal residual internal correlation remains. This scatterplot is a near textbook example of minimal internal correlation.

In order to illustrate the relationship between CIR and EDIr globally, ArcGIS was used to generate a map depicting the ratio (Fig. 7). The attribute table used for this consisted of Country Name, CIR and EDIr. This table was joined to a World Map by Country Name. The ratio was generated by setting the display value to EDIr normalized by CIR. Nine classes were chosen to maximize range while preserving distinction, using natural breaks (Jenks). The numeric values calculated have no purpose other than to allow the generation of the map. Comparing the map with the display in Figure 5, it can be seen that many of the countries toward the red end of the scale are clustered to one extreme (the upper right) in the PerMap display. It might be expected that the mid-range interaction, represented by green countries, would fall in the middle of the display. In some case, such as Chile, this is the case. Many green countries fall to the extreme bottom left of the display, however, and many yellow countries are plotted in the middle of the PerMap display. China, an orange country, is well to the left of the display, while Canada, one of the few blue countries, is plotted very near the red countries in the upper right. The single dark blue country, New Zealand, is also plotted well to the right of the display. One clue to solving this puzzle is that the blue-end countries appear to be plotted “below” the centerline (*eigenvector*) of the plot, while the red-end countries tend to fall “above” the line. This is especially apparent in the extreme cases of Japan, South Korea, and China on the red end, and Tunisia, Canada, and New Zealand on the blue end.



**Figure 7.** ArcGIS plot of environmental degradation index with composite communications index across 61 countries. No data was available for the countries in white. Highest ratios appears in Japan and Finland; the lowest in New Zealand.

### *Conclusion*

While it cannot be assumed that there is a direct causal link between communication technologies and environmental degradation, the strength of the correlation indicates a common factor. Globalization is described as being impelled by the joint technologies of transportation and communication; if globalization contributes to environmental degradation, then its impellers will likely display high correlation with the effect. In conjunction with the remaining indices of globalization, the effect of globalization upon environmental degradation, and thus upon sustainability, is strongly indicated.

The focus of this study has been on but one of sustainability's three factors, environmental stability, and it has been shown that the strongest relationship is with but one of globalization's two facilitators. Further research should explore correlative relationships between globalization and social and economic stabilities (or, perhaps,

*instabilities*), and between each of the three facets of sustainability and transportation. Further, the data available for this study was ordinal in nature; much more compelling results might be obtained using higher-order data. The hope is to arrive at a level of understanding sufficient to establish a meaningful level of predictive power in the analysis.



## **Chapter Three**

### **Nationalism and Globalization: A Recipe for Terror**

#### **Introduction**

Nationalism appears to be part of the human condition; it may well be related to the human tendency toward tribalism. Whatever the case, nationalism appears to be a permanent feature on the global landscape. Globalization, while not a new phenomenon by any means, seems to be having a tremendous dilutory effect on the sovereignty of states; it now appears to be carrying the assault to the cultural frontiers of nationalism. Unlike the Westphalian constructs, however, nations will not so easily succumb. There is a greater inherent resistance to change in nations; the only historically effective method has been outright eradication – genocide, in many cases. This being the case, nationalist interests often resort to any means at their disposal to defend their existence. Inasmuch as nations have no recognition, pursuant to the Peace of Westphalia (and its successor agreements), nations have no consistent power base; such as may be gathered is transient, and usually quite weak by comparison to most states. Violence is thus often the only means available for nationalist interests to defend their positions.

Try to imagine the response if, in the hallowed meeting halls of the United Nations, a delegation of the Cherokee Nation were to arrive and take its seats. This scenario could never actually occur, of course; such a “delegation” would never be admitted entrance. The Charter of the United Nations makes no provision for such groups’ participation, as they have no recognition by other member states (Taylor 1989). This condition is the result of a long history of treaties and negotiations extending back to 1648, when the Peace of Westphalia was formalized. The treaty established the basis for sovereign states

with fixed borders, and spelled the end of feudalism in Europe. The Peace, and its successor agreements, have gone far to ensure that political clout, whether in the form of military might, economic influence, or simply by virtue of location, is the only accepted currency in the international arena. States' interests trump the interests of groups of people whose only identity is some arbitrary claim to strong cultural ties. Cries for international assistance are honored in such places as Haiti and Afghanistan, as these states enjoy international recognition. Yet, organizations with considerably greater capacity to effect change than either of those states, such as the IRA (through Sinn Fein, its political arm), for example, or the Tamil Tigers of Sri Lanka, are barely given the airtime to voice their grievances, much less granted relief. And the only reason they receive such transient recognition as they occasionally enjoy is because they have demonstrated the capacity to inflict grievous harm, consistently, over time.

This paper examines the interactions between the phenomena of nationalism, as a behavioral characteristic of humans; statism, as an institution that has grown from modest beginnings to dominate international relations; and globalization, the process of mobilizing the production and distribution of goods and services on a world-wide basis, often piercing political and cultural boundaries, for the sake of maximizing profit. We contend that cultural groups, whose identities are strong, yet have no voice in international discourse, are threatened by the piercing effects of globalization, and have little recourse but violence – terrorism – as a means to defend themselves politically. We will offer a new definition of terrorism following this line of thought.

## **A Global Context**

Before the phenomenon of terrorism can be examined, it is necessary to review the context in which it occurs. The relationships between the institutions or structures into which people organize themselves are of paramount importance to comprehending the motivation to this type of violence. Terms such as *state*, *nation*, *culture*, and *society* will be examined for the purpose, as these are often conflated, or otherwise misused, in ways that blur inherent distinctions.

A *state* is a legal construct, characterized by a territory with fixed borders, and sovereignty within those borders (Cohen 1996). The existence of states is, pursuant to agreement, contingent upon their mutual recognition *as* states. The conditions necessary to garner this recognition are complex, but most often require a stable government, a functional economy, and no substantive adverse claims by other states. The possession of a military force sufficient to defend the borders is often persuasive, but is not necessary. It is important, for our purposes, to understand that the term *state* does not refer to the populace that resides within the state's borders.

*Societies* are groups of people organized by codified rules, laws, or charter along with supportive structures. *Cultures* are systems of values, such as language, religion, cuisine, style of dress, etc., shared by groups of people in a common spatio-historical frame. *Norms* or what is normal are a by-product of these systems of values and are reinforced by needs of belonging, guilt, etc. Those bound by such common systems of values are a *culture group*. In the context of the differentiation of the concepts of culture and society, it is necessary that we “start from the premise that individuals have multiple identities and loyalties” (Ferguson & Mansback 1999, 79). For example, one population segment may particularly value its religion, while another may place particular emphasis upon its

cuisine. What is important is that individual members be able to identify themselves as such, and be able to recognize others that share these values. These are not exclusive groups by any means; it is often the case that the groups overlap, or that one group includes some, or even all, of the members of the second. A more relevant example is the case of the societal group that places particular emphasis on the state in which it resides. Members of such a group will likely have emotional ties to the geography, history, and cuisine characteristic of the state in which it resides, in addition to a commitment to the ideology and form of government found in the state. Members of such a subculture would have a sense of the moral rectitude of the actions of its state, and individual members may feel compelled to participate in, or at least speak out in favor of, such actions. Many states host such groups, including the US. Its members are called *patriots* (after the Latin *pater*, meaning “father” – a reference to the projective nature of the state). Many citizens of a state may share such sentiments regarding their state, yet have very different social classes, belong to different churches, and even speak different languages, any of which sets them apart as members of many different subcultures, while still sharing their co-identity as patriots.

The terms *nation*, *nationality*, and *nationalism* are more difficult to pin down. There is a wide variety of disparate definitions for these terms in the literature; a sampling may prove illuminating. When attempting to define *nation*, for example, some seem to point to some version of “shared myths and memories” (Smith 1999, 333), or “a common ideology, common institutions and customs” (Plano and Olton 1979, 119) in a way similar to how cultures are described. Others cite consanguinity as definitive (Snyder 1990), and yet others resort to sentimental (Weber cited in Hutchinson and Smith 1994)

or spiritual ties (“The nation is a soul, a spiritual principle.” [Renan 1882, 9]). One declares nations to be but products of the imagination (Anderson 1991), and some despair of the possibility of definition altogether (Seton-Watson cited in Anderson 1991; Birch 1993).

If anything, definitions for the terms *nationalism* suffer from even greater problems. One describes nationalism as a sort of shell, to wit: “Nationalism’s core doctrine provides no more than a basic framework for social and political order in the world, and it must be filled out by other idea-systems...” (Smith 1995, 150). Another takes a more existential approach: “Nationalism is not the awakening of nations to self-consciousness: it invents nations where they do not exist – but it does need some pre-existing differentiating marks to work on, even if...these are purely negative” (Gellner 1964, 168). Angell (cited in Snyder 1961, 771) doesn’t tell us what nationalism is, but categorically declares, “Nationalism is the most important thing in the world, more important than civilization, humanity, decency, kindness, pity, more important than life itself.” Clearly, finding a useful definition for nationalism is not to be a straightforward reach for the dictionary or a survey of the extant literature.

A review of the majority of the (more sober) descriptions of *nation* and *nationality* does yield some common themes. The terms seem always to refer, directly or indirectly, to values, or systems of values, i.e., *culture*. In virtually all instances, two of the more prominent cultural values cited are an attachment to the idea of a place, in conjunction with a common historical identity. The place may or may not refer to an actual geographic location; the significance of a “land of milk and honey” is in its ideation, and is not necessarily dependent upon its present existence. There is always a clear sense of

identity associated with the usage of *nation* and *nationality*; whenever one of these terms is employed, there is at least a tacit reference to an identifiable “us” and some variably-specified “them.” In most cases, the other-entity, the “them,” stands in opposition to “us;” there is an implicit conflict of interest. Further, there is often some reference to “sovereignty,” “self-rule,” “political authority,” or “will to decide upon their common political destiny” (Budge, et al. 1998, Guibernau 1996, 47). Finally, there is a consistent, if implicit, reference to nationalism as phenomenal; the nation is a dynamic social response – not a fixed entity.

We are now prepared to offer a synthesis of these commonalities. Cultures, or their component societies, are defined by the systems of values to which they adhere. Spatio-temporal continuity, expressed in terms of the conjoined ideas of place and history, bolster a commitment to a coherent, *valuable* identity (“the most important thing in the world”). Members of these cultural groups will urge, and be urged by, each other to help maintain the integrity of their defining systems; the systems are, after all, the very things that establish the groups’ identities. In order, then, for the group identity to maintain itself, any system of values that threatens to dilute, corrupt, or otherwise diminish the defining system must be perceived as a threat. *Nations* form when the value system(s) of a society or one or more of its component culture groups, is threatened, potentially or in fact, by external influences. Due to the nature and post-feudal origins of states, their very existence means that there is always a potential adversary, perhaps several, immediately adjacent to home territory. Societies existing within a state may well feel threatened by this perpetual condition, and a national identity may arise as a result. It is, thus, not surprising that the terms *nation* and *state* are so frequently conflated, in spite of their very

different meanings (Connor cited in Hutchinson and Smith 1994). By corollary, the terms *nationalism* and *patriotism* suffer from a similar conflation, yet should be generally understood to refer to distinct phenomena – that is, until they coincide.

Stabilization of socioeconomic relations between societies and cultures has been given a tremendous boost with the increasing formalization of statism. Neighboring peoples are no longer threatening to expand into home territory as in feudal times; commerce has been greatly facilitated, as has cultural exchange. Advances in technology, particularly in the areas of transportation and communication, have enabled an ever-greater flow of information, goods, and services to reach ever-further abroad. Likewise, these same technologies have enabled the movement of ever-larger armies across those same distances, faster than ever before. Peace, when it happens, has been increasingly beneficial; war, in turn, has become more devastating than could ever have been previously imagined. In recent decades, the potential for *mutually assured destruction* (MAD) has, in fact, become a recognized factor in international policymaking. Treaties and agreements have been frantically signed to forestall such destruction, and open, all-out warfare has become far less frequent than in the age of feudalism. Paradoxically, under the aegis of such threats, the world has actually become – relatively speaking – a safer place. Accordingly, the capacity to promote one's products and ideas in previously inaccessible markets has increasingly brought a gleam to the eyes of the world's merchants. While the meeting of cultures is by no means a new phenomenon, the evolution of radical statism, in conjunction with technological advances in transportation and communication, has ushered in a new age of *globalization*.

Increased commerce between rival cultural groups – nations – has led to an increased mutual sharing of cultural values. This sharing has necessarily had a hybridizing effect on the cultural value systems it has involved. In many cases, the variety has been, seemingly paradoxically, welcomed. “Worldliness” has often become a value in its own right, as the wealthiest are able to enjoy, and ostentatiously display, the prized fruits of foreign lands. The learning of foreign languages has historically been the hallmark of a good education, and is, to this day, often requisite to high social standing. Foreign, “outlandish” works of art are rare (or not-so-rare) treasures in the new, international marketplace. Insidiously, glamorously, globalization is having its way with the cultural value systems of its target societies.

Further, the profit available to marketeers has come to represent, in aggregate, a formidable political force in its own right. The economies of states have become increasingly dependent upon foreign commerce, and have necessarily to cater to economic pressures. Individual merchants and, more recently, corporations have become so powerful a presence on foreign soil that policy is frequently, and increasingly, based upon their preferences. The practical ability of states to chart their own destinies has been, often with their own acquiescence, steadily degraded. State sovereignty is quickly becoming subordinate to market sovereignty (Giroux 2005).

The hybridization of the values of cultures is, of course, not always perceived as a boon. In some cases, cultural values are deeply entrenched, especially when there has been a long internal rivalry *within* the culture, e.g., Islam. Defenders of these value systems are often militant in their insistence that their cultures remain pure. These fundamentalists deplore the influences of other cultures, perceiving such to be a threat to



their way of life. France, for example, is notoriously protective of the linguistic homogeneity of its culture, resisting translations even of its daily news publications into other languages, in spite of the potential for a more widespread international audience. Furthermore, fundamentalists view members of their own culture who embrace such alien values as weak-kneed at best, and perhaps traitorous. But the true evil is seen in those cultures that offer the greatest temptation away from the pure cultural ideology. For the fundamentalists of Islam, this evil is Western culture, most pointedly exemplified by the United States. A few, a handful, of extremists may see the threat to their way of life as so dire that they choose to take the battle to the enemy, violently. Indeed, as is the case in Islam, the mores of the cultural system may actually reward them for doing so. And this is the general case; time after time, “globalization has ignited identity as a source of conflict” (Cha 2000, 394). In response to this threat, states identified as being instrumental as “forces of globalization” will necessarily implement tighter security measures in self-defense. How this will manifest is anyone’s guess, but it is clear that “the ‘new’ security environment in the 21<sup>st</sup> century will operate increasingly in the space defined by the interpenetration between two spheres: globalization and national identity” (*ibid.*, 392).

### **Nationalism & Globalization**

As discussed above, nationalism occurs when cultural/societal values are perceived as being threatened. When the perception is an enduring one, it may well become institutionalized as a value in its own right. As national responses are appended to the value system, fleshing it out, a people’s self-image may gain sufficient coherence, as a cultural icon, to become a representative emblem of its adherents. In other words, a

people have identified themselves *as* a unitary body; they have a newfound identity in the face of an adversary—a name. When this happens, a nation is born. There may be considerable political pressure exerted on recalcitrant members to join the national fray; rallies, demonstrations, and propaganda – manipulating “symbols of group identity” – are typical tools of the national effort to fan its own flame (Bhagarva 2002, 73). Nationalism can, thus, be seen as a dynamic response to the perception of threat. When a nation loses its adversary, it may begin to lose its own identity, and may require a new enemy to sustain itself. The lack of an effective “them” renders the idea of a discrete “us” moot; “at the beginning of the third millennium, one senses the coming of a new identity crisis” (Franck 1997, 151).

Following the collapse of the Soviet Union in 1991, the United States had no effective adversary; for ten years, American national identity flagged. Then, on September 11, 2001, America was attacked on its own soil. The news coverage following the attacks promptly and efficiently cast the events in terms of the Manichaeian extremes of good and evil (Anker 2005). An analysis of but one hour of prime time reports on the attacks, and various responses thereto, demonstrated the capacity for broadcast media to shape the reality of millions of people *en masse*. The texture of the reports was carefully crafted to produce a maximum of pathos, bolstered by voyeuristic prompts to empathize with victims, with precisely intertwined images of Osama bin Laden and the collapsing towers of the World Trade Center portrayed in excruciating slow motion. The heroes were well defined: fire fighters, police, and other rescue workers were cast in iconographic grandeur, as was President Bush. The towers were themselves portrayed, not as the symbols of economic strength and virility that they might have been on September 10,

but recast as the symbols of American freedom, democracy, and all virtuosity, cruelly attacked in their proud repose, murdered in a horrific display of disdain for human life, liberty, and happiness. In every conceivable way, the presentation was painstakingly choreographed to extract a maximum of melodrama. The end result of this type of news coverage, in conjunction with speeches given by various prominent figures, solidified the effect. The American people now had a clear enemy, thousands of victims, and an impressive array of heroes – their very own President chief among them. Even more significantly, the American people now had specific, concrete examples of heinous attacks on American civilians, ostensibly in the name of hatred and envy of the American virtues of freedom and democracy. The end result was a composite of the ingredients sufficient to, as Anker (2005, 22) puts it, “produce a specific type of American national identity”. The new identity was that of a people whose state *and* way of life had been attacked; the paired responses of patriotism and nationalism would prove sufficient to grant the Bush Administration unprecedented power.

The state is a complex organism. One may be tempted to see the state as a legal framework staffed by legions of public employees. But the state embodies social, political, even cultural frameworks as well. The net effect is to delimit the scope of public interest, and, more significantly, to “establish meaning, and define and naturalize available social identities” (Nagengast 1994, 116). With the coordinated state/media propaganda following the September 11 attacks, American options for a new global identity were firmly established: the United States was to become a security state with a global reach. As a result, the world’s options were defined as well; to paraphrase the 2001 decree of President George Bush, states and all sub-state entities were now, by

definition and by default, either part of an identifiable “us,” or else be recognized as a part of an evil “them.” As long as the atmosphere of threat could be maintained, some sense of American identity should follow in response.

But these sorts of remedial measures, no matter how elaborate, cannot long stave off the deteriorating sense of identity among the world’s societies. Ferguson and Mansbach (1999, 78) conclude that

Contemporary trends...are seriously eroding the state and the state system and ushering in significant shifts in human identities and loyalties. Citizenship and nationality no longer suffice to define who ‘we are’ or where ‘our loyalties’ lie, and ‘sovereign’ borders no longer constitute the sole, or even the main, indication of who is ‘inside’ or ‘outside’ the boundaries of civic and moral obligation.

Devetak and Higgott (1999, 489) echo this idea when they say that we live “in an era of fraying social bond at the state level, and the absence of alternative focuses of identity at the global level...” This is not to suggest, however, that the days of statism are over. The state “does not end; it is just less in control. Activity and decisions for the state increasingly take place in a post-sovereign space” (Cha 2000, 392).

The disintegration of cultures into more specialized societies has become a modern trend. "Any number of what were previously considered essentially stable countries are experiencing religious, ethnic and other internal conflicts with increasing numbers of separatist movements trying to carve up larger countries into smaller and more tightly focused ethnic areas” (Staten 1999, 1). The effects of modernity are not, however, only being felt at the state level; local and even individual identities are being impacted as well. Once again, Ferguson and Mansbach (1999, 85) describe the condition:

As the sources of governance become less sharply defined...there is a backlash in which individuals seek psychological refuge in smaller, more proximal polities, trying (and usually failing) to isolate themselves from

forces they only dimly understand. For example, the growing impact of both alien cultures and related threat of cultural homogenization produce localizing hostility to ‘outsiders.’ Local government, religion, ethnicity, profession, and even urban street gangs may offer places of refuge and revitalized identity... Such polities can slake the thirst for intimacy, tradition, autonomy, and control in the midst of bewildering change.

As systems of values succumb under the pressures of “modernization,” people lose their sense of cultural continuity; confidence in group identity is badly shaken.

“Modernity...disrupts settled ways of life, casts doubt on old principles and meanings, and imposes thoroughgoing uncertainty on social, religious, and even interpersonal life” (Purdy 2004, 28).

If the process were to end at this point, one might anticipate either a blithe acceptance as people habituated themselves to the condition, or an overwhelming despair of global proportion as they failed to do so. Cultures, however, are – by definition – valuable. Further, cultures are the stuff of history; they are *resilient*. Whenever state authorities have demanded that a cultural group integrate itself into a new cultural matrix, there has almost always been resistance. “The more compulsion was involved, the less likely it was that anticipatory socialization to the new environment had taken place. In such contexts ethnic or transnational communities will persist or be recreated” (Cohen 1996, 518). With the advent of a new era of weakened sovereignty, in conjunction with a general loss of identity at all sub-state levels, cultures will naturally re-assert themselves. Taylor (1989, 172-173) explains, “The origins of today’s ‘nations’ are to be found in yesterday’s ‘tribes.’” It is, thus, not overly surprising that the devolution of states results in a return to the former value systems and ways of life, especially when those underlying

systems previously enjoyed a long history of success<sup>5</sup>. “The revival of old ethnic and tribal memories and identities, and the divorce of nation from state, necessitate new approaches in [International Relations Theory] that start from the premise that individuals have multiple identities and loyalties” (Ferguson & Mansback 1999, 79). Far from becoming a homogenous global culture, the world’s peoples are scrambling to regroup into whatever cultural collections most strongly resonate with them, individually, or in local groups. And when the resonance is particularly strong, when the identification with the new group is solid, resistance to further change is the more violently staunch. “The danger of interstate wars appears to have declined significantly, while that of postmodern war has grown, contributing (in its ‘ethnic’ and ‘tribal’ manifestations) to a rash of ‘failed states’” (Ferguson & Mansback 1999, 84). While this reasoning may be putting the cart before the horse, the association between weakening state authority and a resurgence of localized identity is strong. Finally, the phenomenon of cultural fragmentation and reformation, while facilitated by weakened central authority, itself furthers the process. States cannot long withstand such a multiplicity of divergent interests, and *patriotically* react against it in order to protect their *own* identities. Purdy (2004, 40) names the condition:

[There] is an incapacity to tolerate the plurality of cultures, religions, and forms of life that one encounters in a modernizing society, in which traditional divisions, whether into neighborhood, region, or caste, have broken down... There is no choosing between the virtues and the vices of modernity, of which globalization is the vector...

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<sup>5</sup> More significant than the actual degree of success of a historic culture is the *belief* that it was successful. Such values are of an inherently subjective nature, and the social ties they engender are emotionally based. This is precisely the reason that such values are so adamantly adhered to, even when that might appear to be an ill-considered or irrational course of action.

The term *globalization* generally refers to “a spatial reorganization of production, industry, finance, and other areas” (Cha 2000, 392) resulting from technological advances that “sharply reduced [the] cost and time requirements” of transportation and communication (Jackson 2003, 784). In this sense, it is a purely economic phenomenon. Sociologists, however, offer a broader construction, suggesting that “globalization involves both capitalist markets and sets of social relations *and* flows of commodities, capital, technology, ideas, forms of culture, and people across national boundaries via a global networked society” (Kellner 2002, 287). While it might be argued that the spatio-economic phenomenon will naturally lead to the cultural interactions cited by sociologists, the end result is the same. “Today’s world is organized by accelerating globalization which is strengthening the dominance of a world dominated capitalist economic system, supplanting the primacy of the nation-state with transnational corporations and organizations, and eroding local cultures and traditions through a global culture” (*ibid.*, 285).

Globalization is the topic of much heated debate, in terms of its purported advantages and drawbacks, short- and long-term effects on global economy, government, environment, and on culture. Much of the discussion is couched in terms of the “winners” and “losers” of globalization; there is, however, much disagreement as to whom these are. “Globalization has become the most over used and under specified term in the international policy sciences since the end of the cold war. It is a term that is not going to go away...” (Devetak & Higgott 1999, 483). For our purposes, representative statements from both proponents and opponents of globalization will adequately illustrate its relationship to nationalism.

Proponents of globalization see it as an unmixed blessing, one that results in a condition where everyone profits, the only differences arising from degrees of benefit. “Globalization marks the triumph of capitalism and its market economy. Some theorists see the emergence of a new transnational ruling elite and the universalization of consumerism” (Kellner 2002, 285). From a nationalist position, this outcome is most disastrous; such a position would prefer to emphasize the effects of “global fragmentation [through] ‘the clash of civilizations.’” Defenders of globalization lash out at such attacks, suggesting, “the antiglobalization forces are united only in what they oppose. The reality is that all these groups seek a post-enlightenment form of tribalism. As ideas matter, this ideological Molotov cocktail is dangerous for the survival of an open society” (de Quiros 2004, 382). It is not clear that the author isn’t here actually referring to an open *market*; perhaps there is no effective difference to him. At any rate, his reference to tribalism, while clearly intended as disparaging, is quite telling in light of our discussion of nationalism thus far. Some opponents of globalization, like its proponents, typically focus strictly upon the politico-economic aspects of the debate. “Its critics see globalization as harmful, bringing about increased domination and control by the wealthier overdeveloped nations over the poor underdeveloped nations, thus increasing the hegemony of the ‘haves’ over the ‘have-nots’ (Kellner 2002, 286). Others, however, begin to describe the inherent problems in a world undergoing globalization. They see it “as generating new conflicts and new spaces for struggle,” and describe globalization’s processes as “highly turbulent and [having] generated new conflicts throughout the world” (*ibid.*, 291-292). There is a glimmering of a condition of strife, and of social instability in such descriptions. It has been observed, “globalization involves both a



disorganization and reorganization of capitalism, a tremendous restructuring process, which creates openings for progressive social change and intervention” (*ibid.*, 294), a rather positive take on what could only be described as catastrophic changes in a global economy. In practice, many of the agents of globalization, apparently having faith in the doctrine of market liberalization, spare but scant attention to the actual effects of globalization. Devetak and Higgott (1999, 497) explain:

For many in the developed world, liberalization has become an end in itself with little or no consideration given to its effect on prevailing social norms and values within societies and polities. Consequently, the consensus over how society is organized within the spatial jurisdiction of nation states is strained and the continued process of liberalization is threatened. Globalization is unraveling the social bond.

It may readily be seen that, regardless how one views globalization, its effects upon cultural stability are unquestionably severe, even if one counts them as positive.

States appear to be particularly powerless to resist globalization; this is but a reiteration of the discussion concerning the diminution of state sovereignty. But the effect that a state’s impotence has upon its citizenry is significant. Devetak and Higgott (1999, 488) again elaborate:

Globalization makes it harder for government to provide the compensatory mechanism that could underwrite social cohesion in the face of change... Free markets and the reduction of, or failure to, introduce compensatory domestic welfare is a potent cocktail leading to radical responses from the dispossessed.

Further, not only are states not able to shield citizens from the buffeting effects of globalization, states instead “appear far more anxious to offer incentives and remove obstacles to having their national economies fully integrated into the global economic system” (Ferguson & Mansback 1999, 94). Yet, many states appear unable to accomplish even this. Instead, “globalization has come to be associated with financial

collapse and economic turmoil... Neither markets nor the extant structures of governance appear capable of providing for all three [Keynesian conditions of economic efficiency, social justice, and individual liberty] at once” (Devetak & Higgott 1999, 483). It is little wonder that state sovereignty is on the wane; statism is proving wholly inadequate to respond to the challenges of globalization.

The instability foisted upon states by globalization is, as previously discussed, affecting global cultures in unprecedented ways. Cohen (1996, 517) explains,

In the age of globalization, the world is being organized vertically by nation-states and regions, but horizontally by an overlapping, permeable, multiple system of interactions. This system creates communities not of place but of interest based on shared opinions and beliefs, tastes, ethnicities (where these are trans-state), religions (again, where these are trans-state), cuisine, the consumption of medicines, lifestyles, fashion, music, etc. Unlike those who argue that a single homogenized global culture is emerging [it has been suggested] rather that multiple cultures are being syncretized in a complex way.

This is, perhaps, stating the case at its mildest. The goals of the globalization effort are to reduce barriers between markets, so as to enable the smoothest, most efficient trade possible. The barriers in question are political and social, or, more specifically, state governments and cultural resistance. It has been seen that states are impotent to resist effectively the effects of globalization; cultures, conversely, are proving to be far more resilient. The net effect is fascinating, from a sociological perspective. State control has been diminished by globalization, freeing up formerly suppressed cultural expression. At the same time, those same forces of globalization are busily attempting to wear down the very cultural identities they have only just enabled. Cha (2000, 394-395) elaborates,

Globalization has ignited identity as a source of conflict... However, it [the elevation of conflict] is also a function of globalization. The process of globalization carries implicit homogenization tendencies and messages,

which in combination with the ‘borderlessness’ of the globalization phenomenon elicits a cultural pluralist response.

As cultural integrity fragments and reforms in unpredictable ways, there is a growing sense of valuelessness emerging on a global scale, while local subcultural groups consolidate their identities. The overarching effect is one of radical bouts of passionate resistance against a backdrop of general cultural malaise. Purdy (2004, 34) describes the function:

Mobility, individualism, and skepticism toward tradition put in motion two dynamics, one of which sustains and enhances the tendency toward liberty, while the other undermines that tendency by producing intense and sometimes violent countermovements in culture and politics.

The proponents of globalization and the neo-liberal agenda place a great deal of emphasis on such values as democracy and liberty. From a strictly economic perspective, these twinned values, when properly implemented, produce an environment that most successfully curtails state interference in the international marketplace. This condition is, naturally, of paramount importance to the free flow of goods and capital; globalization is at its most efficient when such impediments are rendered impotent. Cultural resistance, however, becomes more intensely focused as new, or renewed, group identities rear their collective heads in defiance of the effects of globalization.

Kellner (2002, 294) summarizes the condition:

Against capitalist globalization from above, there has been a significant eruption of forces and subcultures of resistance that have attempted to preserve specific forms of culture and society against globalization and homogenization and to create alternative forces of society and culture, thus exhibiting resistance and globalization from below. Most dramatically peasant and guerrilla movements in Latin America, labor unions, students, and environmentalists throughout the world and a variety of other groups and movements have resisted capitalist globalization and attacks on previous rights and benefits.

It is clear, however, that globalization is not an entity; it has no address, nor a board of directors. Globalization is a process; it cannot be localized to a particular state or organization. There are, however, forces and agents of globalization that *can* be identified. Robinson (1996, 633) makes the call, “The agent of the global economy is transnational capital, managed by a class-conscious transnational elite, based in the center countries and led by the United States.”

Resistance to globalization can take many forms. One might rally a boycott against foreign products, for instance. But such efforts are doomed to failure, in the long run, if the products in question are cheaper, of better quality, or more accessible than domestic competition. Consumers look out, first and foremost, for their own interests. Economic competition is, after all, the first, best tool of globalization. Resistance might come from political pressure for state-sponsored protection of local production (e.g., tariffs); but, as we have seen, such efforts are never successful in the long run. In desperation, resistance might take the form of protest marches, demonstrations, or walk-outs. But globalization seems to smoothly and easily accommodate such transient statements; it simply waits until tempers have died down, and erstwhile grumbling protesters resume their status as hungry consumers. Only the staunchest, most entrenched movement can find the commitment necessary for a sustained program of resistance. This degree of focus requires a target, some place or thing upon which to fix a gaze. A dedicated resistance movement requires an identifiable enemy. A strong “us” demands a formidable “them.”

And so it is that the world is divided by globalization. From a cultural perspective, globalization weakens state sovereignty, introduces diluting factors to extant cultural bases, and results in a fragmented society, the shards scrambling to find identities into

which to reorient themselves. Globalization meets with resistance at every step, and gently rolls over every effort. Kellner (2002, 290) reports, “The disclosure of powerful anti-Western terrorist networks shows that globalization divides the world as it unifies, that it produces enemies as it incorporates participants.” Threats to group identity galvanize coherent resistance; nations are born as a result. Nationalism can, thus, be seen as the greatest threat – or *counterthreat* – to the globalization agenda. Cha (2000, 393-394) explains,

Agents of threat can be states, but can also be non-state groups or individuals... With globalization, terms such as global violence and human security become common parlance, where the fight is between irregular substate units such as ethnic militias, paramilitary guerillas, cults and religious organizations...

Nationalist groups form in an effort to resist extinction due to cultural dilution. Nations fight to retain their identities. But, because they are not formally recognized, they have no official existence; they have no voice. “Violent nonstate actors take it upon themselves to use violent means to help achieve their goals because they often feel shut out of the process and not able to use political means such as negotiating” (DiPaolo 2005, 167). Effectively powerless in the face of globalization, and bereft of effective states to which to turn, they resort to violence as the last desperate means at their disposal. As long as globalization persists in destabilizing established social order, as long as cultures are increasingly threatened, the response will continue to grow. Nagengast (1994, 110) spells it out,

The potential and reality of additional ethnic and nationalist violence are enormous as dissidents challenge the prevailing and approaching order and existing states struggle to implement new distributions of power and capital to suppress internal movements for political change, especially autonomy and self-determination...

When a substate or nonstate actor engages in violence, the typical response of the state in which the act occurred is to treat it as any other criminal act. Some individuals may be arrested, or even shot in the process. But these organizations are large, diffuse, and non-localized. They cannot be threatened with retaliation; they cannot be targeted at all (Cha 2000, 400). And this effective immunity is the measure of their success. As they continue not to be “caught,” as they persist in brazenly claiming credit for their acts of violent resistance, they take on a certain legitimacy. They become stronger, better supported, and better organized. Their names become known. They become political entities with which to treat. In a way, they become much like states, and, in many cases, become as militarily powerful as states (DiPaolo 2005, Watkin 2004). Unlike states, however, these entities are not bound by territories with fixed borders. Ferguson and Mansbach (1999, 79) offer an explanation,

Various factors account for the current upsurge in nonstate identities, not least of which is the declining importance of territory as a source of power and prosperity. The proliferation of transnational and global networks of de-territorialized communities has further reduced the relevance of territory in global politics. After all, territory is no more essential to identity than the barnacle is to a boat. Identities demarcate psychological rather than territorial space and – like cultural, economic, and coercive boundaries – can overlap and intersect, and only rarely are exclusive.

Identity is at the heart of nationalism, and its goal is persistence of identity; it is an expression of the will to survive. It is no surprise, then, that many of these groups do not seek independence in the traditional sense; rather, it is autonomy they seek (Ferguson & Mansback 1999, 95). In many cases, they have demonstrated military might on par with that of states; what they truly desire is commensurate political power. They want a voice.

**UNPO**

The Unrepresented Nations and Peoples Organization (UNPO 2006) was founded February 11, 1991 at the Hague. Representatives from such peoples as the Crimean Tatars, the Australian Aboriginals, Iraqi Kurdistan, and Tibet<sup>6</sup> – 15 in all – met to establish “an organization that would embody, promote, and affirm the value of democracy, tolerance, non-violence and the right to self determination” (*ibid.*, np). Each had had a long history of difficulties in finding redress among the Members of the United Nations, and “were struggling to preserve their cultural identities and protect basic human rights.” By their own statement, they were attempting to “find non-violent ways to make governments listen to their concerns.”

The organization’s mission statement (*ibid.*, np) effectively identifies many of the problems of globalization faced by national groups:

The Unrepresented Nations and Peoples Organization (UNPO) is a democratic, international membership organization. Its members are indigenous peoples, occupied nations, minorities and independent states or territories who have joined together to protect their human and cultural rights, preserve their environments, and to find non-violent solutions to conflicts which affect them. UNPO provides a legitimate and established international forum for member aspirations and assists its members in effective participation at an international level.

Although UNPO members have different goals and aspirations, they share one condition – they are not represented in major international fora, such as the United Nations. As a result, their ability to participate in the international community and to have their concerns addressed by the global bodies mandated to protect human rights and address conflict, is limited.

The NGO was established to provide the venue so desperately needed by peoples with no other opportunity to voice their grievances, or make their demands. Its stated purpose is to pressure governments to respond to their needs, without the necessity to resort to violence.

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<sup>6</sup> The Tibetan representative was HH the Dalai Lama; he continues to serve in that capacity today.

For the past 15 years, UNPO has enjoyed considerable success. It been active in enabling these national groups to gain access and effectively use the various United Nations bodies, including the (former) UN Commission on Human Rights (and now the UN Human Rights Council), the Permanent Forum on Indigenous Issues, and the Working Group on Indigenous Populations. Access to such bodies has proven difficult for the individual groups, as making the arrangements to be heard “is often a complex and costly undertaking” (*ibid.*, np).

The organization has grown substantially. It now represents about 60 national groups in six regions – a total of over 150 million people (*ibid.*). It is interesting that the key to UNPO’s success may lie in the fact that all of these peoples are bound in a common cause, liked by a common *identity* – they are all victims of oppression. The very fact of the existence of other groups in similar plights lends credence to each individual member’s cause, bolstering the strength of purpose in each, and in the organization as a whole. UNPO members whose cause may have seemed lost but a few years ago might now feel a new, collective sense of purpose. In this, UNPO might well be congratulated on its achievements.

For all of its successes, however, UNPO still fails to address the grievances of the most severe cases, i.e., those national groups that have already resorted to violence to achieve their goals. In order to qualify for membership, national groups must (among other things) renounce violence as a means of policy (*ibid.*). Perhaps, when a group reaches the depth of desperation necessary to resort to violence, it may harbor some skepticism that talks of the sort UNPO offers are sufficient. It may be the case that certain more radical elements among UNPO’s member nations feel this way as well. It



remains to be seen how effective UNPO will be in bringing about the changes necessary to satisfy the demands of cultural identity.

### **Globalization's Response**

UNPO has garnered considerable success in bringing disparate threatened nations together in a common cause: the preservation of cultural identity. The neo-liberal agenda, however, cannot tolerate such syncretism in the global marketplace. Globalization can withstand individual acts of resistance, or even group efforts such as protests. Globalization has consistently put sovereignty to heel; statism is no longer an obstacle to untrammelled free trade. Cultural syncretism, however, cannot be bought. It is immune to the coercive effects of economy. Nationalism, by the very fact of its persistence, is winning in the war against globalization. "The failure of neo-liberal development policies in countries such as Indonesia and Argentina, and the new prominence of elite and popular nationalism and fundamentalism whose most vivid expression is terrorism, have together shown the insufficiency of the neo-liberal program" (Purdy 2004, 1). "Terrorism will remain a major transnational problem, driven by continued ethnic, religious, nationalist, separatist, political, and economic motivations" (Staten 1999, 1[citing Hughes]).

It is perhaps ironic that, in a practical sense, the successes of nationalist resistance movements are empowered by the very forces of globalization they seek to resist. Without the benefits of cheap transportation and communication, these groups could not hope to achieve the levels of success they consistently enjoy. Cha (2000, 399) explains,

The measurement process is no longer one-dimensional in the sense that one cannot readily draw linear associations between technology, capabilities and power. For example, what gives local, economically backward states regional and even global influence in the 21<sup>st</sup> century is

their ability to threaten across longer distances. Globalization facilitates access to select technologies related to force projection and weapons of mass destruction...

## **Terrorism**

Authorities on the topic of terrorism frequently have difficulty in determining exactly what terrorism is. "Terrorism more perhaps than most concepts has generated widely divergent interpretations" (Laqueur 2004, 232). This is a problem. "It is difficult to get a grip on this issue when we cannot agree on what terrorism is and who is a terrorist" (Robey 2004, 244). "An author writing in the 1980s listed more than a hundred definitions, and since then there have been numerous additions" (Laqueur 2004, 232). Proposed definitions "sometimes show a preference for limiting it to the criminal sphere or nonstate activity" (Watkin 2004, 6). Yet, "it has been acknowledged that illegitimate acts of terror can occur during armed conflict or otherwise be carried out by and on behalf of states" (*ibid.*). Pearlstein (2004, 244) addresses this by differentiating between legitimate and illegitimate acts of terror, "Terror... differs from terrorism in that terror is the official act of a government body where as terrorism is the rebellious act of a discontented nongovernmental organization." That the discourse could have reached this level of absurdity is indicative of how frustrating the identification of the phenomenon has become.

Attempts to find a definition of terrorism go back to 1937 with the League of Nations, "all criminal acts directed against a state... and intended to create a state of terror in the minds of particular persons or the general public" (Laqueur 2004, 233). Unfortunately, this definition includes the actions of many states; naturally, states would like to be able to point to aggressors against themselves, without the possibility that they themselves

might be so labeled. This condition is vital to the “us” versus “them” nomenclature inherent in the cultural framework. States are as reliant upon patriotic support as any other value system is reliant upon its particular nationalist group.

"The European Union proposed a draft according to which terrorism was considered an act aimed at seriously altering or destroying the political, economic, and social structure of member countries, a rather clumsy attempt [at] definition because a social revolution could be peaceful as well as violent" (*ibid.*, 234). The other, perhaps unstated problem with this description is that this is precisely the effect that globalization has on many countries. Once again, this definition has the potential to be recursive, and must be rejected for the same reasons as the League of Nations offering. According to title 22 of the United States Code, “terrorism is premeditated, politically motivated violence perpetrated against noncombatant targets by sub-national groups or clandestine agents, usually intended to influence an audience" (*ibid.*, 233). This definition seems to grasp much of the meaning we have found in our discussion; it also renders the US susceptible to the problem of recursivity we have encountered, inasmuch as “clandestine agents” such as the Central Intelligence Agency may be implicated. DiPaolo (2005, 170) defines terrorism as “(a) the use of violence as a means of diplomacy and (b) the effort... to imitate the structure of the state in their attempts to seek local change.” This definition, too, captures much of the meaning gleaned from our discussion, and has the benefit of shielding states from the possibility of recursivity. The problem with this definition is that it describes the condition without explaining it; the definition is not prescriptive. It isn’t possible to appropriately address the problem of terrorism unless we understand it, and further, share a common understanding.

One possibility to explain the extraordinary difficulty in reaching consensus on the matter of this elusive definition is that states do not *want* a definition. Nagengast (1994, 115) suggests,

As for terror, academics, politicians, and popular pundits usually reserve the label for political opposition movements or figures, only rarely applying it to states. Violence and terror are highly politicized terms, embraced and elaborated by victims, and avoided by perpetrators, especially if the perpetrator is a state. In fact, state leaders everywhere claim respect for universal human rights, and deny that their acts constitute torture, violence, for terror, preferring to characterize them as necessary measures to ensure order and respect for the law. Nonetheless, the state is often the instigator of cycles of violent human rights abuses as it seeks to suppress change and prevent opposition movements from undermining its legitimacy.

Rather than contend with the possibility that an officially adopted definition of terrorism might turn around and bite them, many states apparently would prefer to avoid the problem by avoiding a definition altogether.

Another, darker possibility is that the agents of globalization realize that nationalism and terrorism are the natural result of their efforts, and, thus, regard these phenomena as necessary evils – part of the costs of doing business in the global marketplace.

Sunhaussen (2004, 6) observes,

All we are doing is fighting terrorists but hardly any thought is given to how to solve the problems which lead to terrorism in the first place. In the few instances when people raise the question of why terrorism occurs, the answers, as we shall see, are so silly that they have to be considered intended misinformation. In other words, no-one seriously intends to eliminate terrorism from our lives.

Laqueur (2004, 238) seems to agree that definition is problematic, allowing that a failure to reach consensus on this important topic is acceptable:

With all these misunderstandings, deliberate and involuntary, it is still true that... people reasonably familiar with the terrorist phenomenon will agree 90 percent of the time about what terrorism is, just as they will agree on

democracy or nationalism or other concepts. In fact, terrorism is an unmistakable phenomenon, even if the search for a scientific, all-comprehensive definition is a futile enterprise. Many years ago I wrote that any definition beyond 'the systematic use of murder, injury, and destruction, or the threat of such acts, aimed at achieving political ends' will result in controversy, and arguments will go on for ever.

At the risk, then, of contributing to a perpetual state of controversy, we are prepared at this point to offer a definition for terrorism. We must first, however, review the underlying concepts a final time. Culture is a behavioral characteristic of human populations. Cultural groups form when members of population segments identify themselves and each other as adherent to specific cultural systems of values. These identities are based in a subjective sense of history and continuity, yet serve as a very real basis for the lifestyles of their members. When a threat, or the perception of a threat, confronts the continuity or integrity of the group's system of values, the group identity is threatened. The group responds in defense of itself in whatever ways it can. Nationalism is a culture group's defensive response to the perception of threat to its values or identity. The tools at a nation's disposal are limited, however, by the political constraints of states, and the economic constraints of the global market. Registering grievances with state authorities is often ineffective, whether because the state has no interest in rendering assistance, or, more commonly, is powerless to do so. Appealing directly to the agents responsible for the cultural imposition, even when they can be identified, is all but futile. Without a voice, and impotent to effect social change geared toward preserving their way of life, the nationalists become desperate. They resort to violence. *Terrorism is the violent, last-ditch effort by nationalist groups to defend, and/or gain the attention of whomever may assist them in protecting, the continuity of their culture-group's identity, system of values, and way of life.*

This definition is not limited to non-state or sub-state actors, nor does it insist that terrorists be clandestine, covert, or in any way obscure. States, however, cannot be terrorists, in that they not only already have a voice in the international arena, but also states have no cultural identities! (Warfare, and other “legal” forms of state violence, can be truly horrific—but such activities are not terrorism.) Instead, culture groups within states respond defensively, nationalistically, when their state-based values are attacked. These are patriots, and patriots are *not* exempted from the definition. Thus, it matters not at all what cultural values a national group is defending when it resorts to violence. Terrorism is terrorism, of whatever stripe. This definition has the advantage of applying to any circumstance. For example, pursuant to this definition, participants in the Boston Tea Party were unquestionably terrorists. To the extent that Timothy McVeigh identified himself with a threatened cultural group – a nation under siege – he, too, was a terrorist. Conversely, if there was no such identification, then he unequivocally was *not* a terrorist, but merely a psychopathic murderer. Finally, the extent to which a national group defends itself may well extend to an aggressive posture. For a nation may well believe itself to be threatened if there exists any potential opposition. When this is the case, nationalism is at its virulent worst, for any other culture, in fact, *all* other cultural systems of values are perceived as threats. Under these circumstances, these national extremists may well adopt violence as a way of life, under the aegis of exterminating anyone other than themselves.

The discussion concerning globalization, thus, plays no intrinsic part in the definition of terrorism. Rather, globalization has been seen to facilitate the circumstances wherein terrorism is most likely to occur. Globalization does not directly cause terrorism or

nationalism; it is merely the vehicle whose payload is designed to flatten cultures. Globalization's 'payload' consists of the goods, services, religious agendas, languages, philosophies, ethnicities, music, cuisine, styles of dress and dance, television and radio broadcasts, etc., that impact and dilute the cultures which it targets. While many offer considerable resistance, no culture, no nation on earth appears to be immune to its impact.

### **Conclusion**

We contend that this explanation sufficiently defines, and isolates the sole source of, terrorism. Further, the explanation is thoroughly normative, as there is an apparent solution. Nations resort to violence only in extremis; it is their *last* resort. Given the opportunity to voice their grievances in another, effective manner, nations would clamor for it, rather than resort to terrorism. Thus, the only potentially viable solution is for nations, or some of them, to be formally recognized, and granted true, palpable power in global discourse. It might be suggested that the United Nations be transformed into a bicameral entity, such that a representative umbrella group (such as UNPO, for example) be granted some legislative authority in the functioning of the organization. In this way, otherwise unrepresented peoples might have true representation in the UN, in a way similar to the House of Commons in parliamentary systems, or the House of Representatives in the US system. However, we contend that, short of some sort of viable representation in matters of global discourse, as long as nations feel impinged upon, terrorism will remain an ongoing threat.

## Chapter Four

### Sustainability with Globalization: A Chilean Case Study

The effects of globalization on the relative sustainability of societies are tremendous, and yet little study has been devoted to the subject in terms other than from the perspective of development. This section is a case study examining these effects in Chile. The intent is to determine to what extent various interactions between sustainability and globalization are visible. The concept of sustainability as a measurable quantity is reviewed and set aside; in its stead, the concept of vulnerability is suggested as a more viable alternative.

Among the various developing countries of the world, Chile stands out as the global model of successful entry into the international marketplace. Coming from the economic doldrums of the early 1970s, and with GDP more recently increasing at phenomenal rates (6-7% per annum) (CIA 2006), Chile has undergone an extraordinary transition over the past three decades. Only now is Chile coming into its full economic bloom (Collins & Lear 1995). Therefore, the country represents an excellent, time-compacted study of the effects of globalization on sustainability without parallel anywhere on earth.

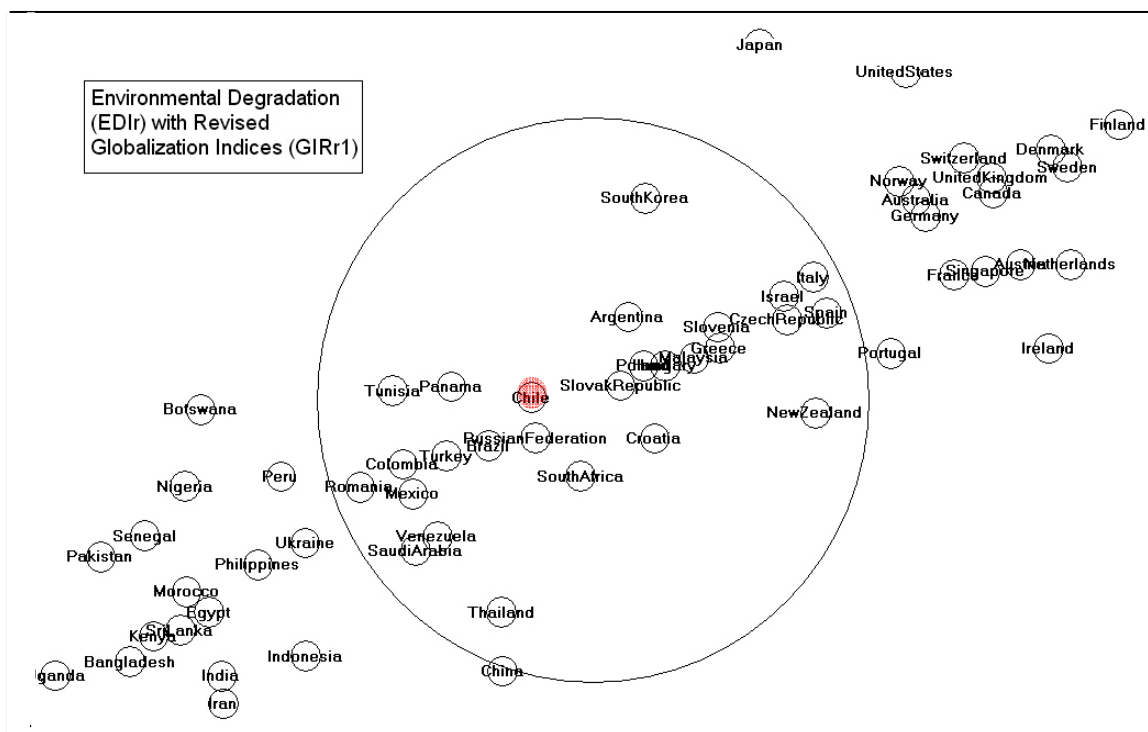
The sustainability of a given region is defined in terms of the relative stability of that region's environment, society, and economy. In practice, these gauges of stability are difficult to measure; levels of degradation or *instability* appear simpler to ascertain (Bourette & Reader 2005), and indices have been established along these lines. In an open system, globalization's indicators include the relative volumes of communication and transportation into and out of the study area. These are the factors that facilitate increased volumes of trade, cheaper extraction of raw materials, and the migration of



labor and/or physical plants. They are also the means by which pressure may be exerted upon recalcitrant markets, states, or culture groups.

Multiple dimensional scaling indicates a strong correlation between the global composite indicators of environmental degradation and globalization (see Chapter 2). “PerMap” (Heady & Lucas 1995) is an interactive, multidimensional scaling program enabling the manipulation of large data sets, in upwards of 18 dimensions, in real time. The program, used in this study, calculates an isotonic regression ‘scatterplot’ in the number of dimensions for which attributes have been input. Solutions are generated so as to be displayed according to best fit. The display is non-metric, and non-axial. Distances are calculated, and then stretched or compressed to enable a two-dimensional projection. (Various projections of the earth do the same when they attempt to portray three global dimensions on a two-dimensional map.) Best fit is determined by which orientation of data points produces the least overall stress on the projected set. Data from 61 countries were used in this calculation (Fig. 8).

Chile’s globalization indicators place it at the middle of the range, rising from near the bottom in a mere 20 years. Given the rapid rate of globalization, environmental degradation of several sorts should be in evidence. If globalization is a comprehensive threat to sustainability, signs of social and economic instability should be in evidence as well. Prior to visiting the country, consideration was given to potential outcomes of rapid globalization.



**Figure 8.** PerMap display showing strong correlation (max.  $r^2 > 0.975$ ,  $p = .01$ ) between indices of globalization and environmental degradation. Chile falls near the middle of both ranges. (Color highlight added. PerMap run by author.)

### *Environmental Degradation/Destabilization*

Chile's economy is primarily export-driven, with its three major products including copper, lumber products, and farm-raised salmon (Pietrobelli 1998). Produce is a fourth export product worthy of note (Collins & Lear 1995). With the advent of economic reforms, much of Chile's developing industrial economy began a slow swing toward service economy, largely centered in Santiago. While the national population has largely leveled off, GDP is on the rise; Chilean individual consumption and waste production are quickly reaching parity with advanced industrial nations. Based upon this information, and clues provided by Jared Diamond (2005), the following environmental problems were anticipated:

- Deforestation, with attendant soil erosion, and perhaps desertification;

- Diminished soil quality due to monocropping;
- Diminished or depleted water sources;
- Diminished water quality in some areas due to agricultural fertilizer, herbicide, and pesticide runoff; mining runoff; and industrial and domestic effluents,
- Eutrophication along shorelines due to aquacultural feeds and fecal matter from fishstock.

### *Social and Economic Destabilization*

Globalization is often manifest by large infusions of cash to improve specific areas that have become dilapidated. Worn down, blighted structures and districts are replaced with vast new infrastructure, and such projects are frequently insulated against the effects of resumed degradation. The result often is marginalization, characterized by an expulsion of undesirable elements, and the emplacement of barriers or other deterrents limiting access to the renovated area (Keeling 2004). Income- and consumption-tier disparity resulting from the marginalizing effects of globalization in Chile may be evident.

The process of de-culturation, a hallmark of globalization, should be apparent in the day-to-day activities of urban populations. Former cultural mainstays, such as an hours-long lunch period, may be minimized or absent. Clothing styles, especially among women, may provide further evidence of the dilution of formerly strong cultural values. Language degradation, whether by introduction of increased jargon, or the increased use of a second language (e.g., English), would indicate an acceleration in the de-culturation process. Lowered church attendance would be another likely indicator, if such was the case. A people without a cultural identity lose group coherence, and are primed for socially unstable behavior. Crime rates may have increased, particularly violent crime,

and violations of personal property and spaces have become widespread. Likewise, a people whose culture is threatened may offer strident resistance, often becoming a nationalist movement (Bourette & Reader 2006).

The format of the reported research is to be one of observation, as opposed to sampling. It has been anticipated that certain conditions will prevail, situationally, if there is an interaction between globalization and sustainability. Observations will be organized according to category of sustainability.



**Figure 9. Cities observed.** (Map by author)

Five Chilean cities were visited for the purpose of making the observations (Fig. 9). Temuco, the first, is located near the midpoint of this longitudinally-oriented country. This geographic position has had the effect of rendering Temuco the gateway to the more temperate southern regions from the densely populated Metropolitan Region to the north. Temuco's population is about 300,000, and it is the fastest growing city in the country. Temuco's region is also home to

the indigenous Mapuche people, and Temuco is the Mapuche's primary contact with Chile and the world. The Mapuche are, historically, a proud, fierce people; they are the only indigenous group to have resisted both the Inca *and* the Spanish in their respective bids for dominion. Today, the Mapuche continue to resist, as their tribal lands are regularly encroached upon by the fast-growing city/region.

The second site visited was Ancud, northernmost settlement on the large southern island of Chiloé. Ancud has a rich heritage as a fishing village, and is the site of the last holdout of the Spanish in their losing campaign against the Mapuche. Assisting the embattled Spanish were the Mapuche's longtime enemy, the Huilliche; the remnants of this indigenous people continue to reside throughout the island. Chiloé is famous for its rich folklore, in which many residents of Ancud still participate.

Third visited were the adjacent coastal cities of Valparaíso and Viña del Mar. Dating from early in the 16<sup>th</sup> century, Valparaíso has a long history as a bustling port town. While the city's defenses were increased (to stave off piracy) through the next three centuries, the town proper grew but little. With the discovery of gold in California, Valparaíso began expanding in earnest, and has since grown to a population of over 300,000. It was the first city in South America to have gas lighting and, in turn, electricity. It was the first to have telegraph and telephone, and the second to be connected to its capital city (Santiago) by rail.

Viña del Mar (or simply "Viña") was originally an *encomienda*, a rural plantation site, set in grape vines. Observing its beauty, Francisco Álvarez, a wealthy Portuguese merchant, purchased the site in its entirety – over 172 square kilometers – in 1840. Over time, the settlement grew as a wealthy suburb of Valparaíso, and, under the influence of politician Benjamín Vicuña Mackenna, Viña gained a reputation as a posh seaside holiday resort. The district's population continued to expand, and it requested independent municipal status in 1879. Due largely to the demands of a large sugar refinery, the burgeoning city established its need for electricity, and was connected (concurrently with Paris) in 1882. Viña del Mar has retained its status as tourist

destination and suburb, has established its own business district, and has grown to a city of over 330,000.

The fourth stop was Ovalle, a farming community north of Santiago (pop. 100,000). Its primary products include *pisquera* (varietal grape juices destined to become wine), table grapes, olives, avocados, artichokes, and goat cheese. It is the capital of Limarí province, and boasts a nearby tourist attraction, the Valle del Encanto. Recent climate changes have taken a toll on the agricultural focus of Ovalle (Diaz, et al. 2004).

The final destination was Santiago, Chile's capital city. With a population over 5.3 million, metropolitan Santiago is home to fully one third of Chile's citizens. Santiago, like many other large cities, suffers from variably severe air pollution born primarily of automotive exhaust. The city is served by three rivers; two of them are severely polluted by domestic and industrial effluents, in addition to agricultural runoff. The third is entirely desiccated, as its contents are used for irrigation and domestic consumption. Overall, Santiago ranks among the most polluted cities on Earth (EIA 2002). The city has grown rapidly with the country's economy, and marginalization effects are overt, having had little time to have been masked or ameliorated.

### **Findings: Environmental Degradation/Destabilization**

#### *Effects of Monocropping at Tree Plantations*

Plantation farming of trees, primarily pine and eucalyptus, is ubiquitous across central Chile. No road excursion failed to include an encounter with at least one logging truck laden with freshly-cut wood. While traveling between cities, a glance out the window at any given moment was certain to be met with one or more plantation sites.

Neither of the species being raised on the tree plantations is indigenous to Chile; the pine species (*Pinus radiata*) favored for production is native to California, and eucalyptus (*Eucalyptus globulus*) is a species imported from Australia. These species are economically attractive in that they both thrive in poor soil in moderate climates, are very fast-growing, and readily marketable (as wood chips or pulp) with little processing. Plantation sites are generally cleared of native vegetation prior to planting, often including mature stands of native timber (*alerce* [larch] and/or monkey puzzle). Upwards of 300,000 acres of native, primary forest are replaced by plantation tree farms annually (WWF 2005). (As a historical note, the *alerce* has been heavily logged throughout the 19<sup>th</sup> and 20<sup>th</sup> centuries. Some specimens have been dated as greater than 3600 years in age... the species is now endangered, and is protected in national parks.)

It is difficult to classify the plantation method as simply *deforestation*, in that



**Figure 10: Vertical terracing near Ancud.** (Photo by author)

*reforestation* is the primary goal. Thus, many of the effects of simple deforestation have not been widespread in Chile. Soil degradation has certainly occurred as a result of monocropping; this practice, however, is of little direct consequence to either of the

crops. Soil erosion has been largely avoided, in spite of the fact that tree rows are often planted vertically along hillsides (as opposed to erosion-resistant horizontal terracing) (Fig. 10). Moderate soil erosion was evident at one site (outside of Ovalle), as the crop was failing – probably due to insufficient rainfall



**Figure 11: Dying plantation trees near Ovalle** (Photo by author)

(Fig. 11). The dying trees are unable to provide adequate anchorage for the loose, dry topsoil; at the same time they are incapable of producing sufficient density of stem or foliage to provide an effective windbreak. It is certain, however, that the densely planted, monocropped stands of alien species of trees harbor little in the way of native ecosystems. From the perspective of biodiversity loss, Chile's deforestation has been catastrophic (Grez, et al. 1998).

Over a third of the world's remaining primary temperate forest is in southern Chile; this area has, quite recently, proven a tempting target for Boise-Cascade (Langman, 1999). The company had planned to build the world's largest chipping facility in Puerto Montt – the project to be dubbed *Cascada Chile*. Local citizenry (including the mayor of Puerto Montt), however, objected to the project on environmental grounds. Local fish farmers, who worried that effluent from the plant would harm water quality for their stocks, likewise objected to the project. In conjunction with “Chileans for a Sustainable and Equitable Society,” a local NGO, action was taken to stop the project. Boise-Cascade withdrew its bid in 2001.

At current rates of degradation and deforestation, all of Chile's unprotected native forests will have been affected within 20 years. The implementation of the *Cascada* project would have cut that time by more than half. The Chilean people are, perhaps, to be lauded for their resistance to this sort of exploitation; yet, it is clear that there remains much to do if the forests are to be spared.

#### *Effects of Fishing and Aquaculture*

Chile owes its unique geography to the fact that it is located on the margin between two continental plates. The oceanic Nazca Plate is pushed, or subducted, under the South



American Plate (on which the continent rests) along Chile's coast, resulting in a deep trench immediately offshore (and, incidentally, also resulting in the ongoing creation of the volcanic Andes Mountains). This trench serves as a channel for cold Antarctic waters (the Humboldt Current) to flow much further north than they otherwise might have. The cold waters, in conjunction with the rich runoff from several temperate rivers, have provided for some of the best fisheries in the southern hemisphere. Commercial fishing has a long history along the entire coast of Chile, particularly in the southern archipelago region. The town of Ancud, located on the northern shore of Chiloé, the archipelago's largest island, subsists almost exclusively upon its fishing revenues.

The fisheries have, however, come under considerable stress over the past few decades, and have begun to collapse. "The total landings during 1998 reached 3.8 million tons, which is about 39% lower than the landing observed during 1997 and about 47.9% inferior to the mean of the period 1994-97" (UNFAO 2000, np). Regional limits on fishing have been imposed to curtail the losses, providing for a one-month per year fallow period to allow for some regeneration of depleted stock<sup>7</sup> (Muñoz 2005). Yet the demand for fish has steadily increased, as Chile has established eager markets in Japan, the US, and Norway. For the most part, the waters of the archipelago remain suitable for supporting fish; it is the fish stocks that have been depleted. In order to meet the demands of the global marketplace, fish farming, or *aquaculture*, has become a booming industry throughout the archipelago. The "crops" consist primarily of salmon and trout (71.9%), but also include certain seaweeds (18%), and mollusks, primarily mussels (9.2%) (UNFAO 2000). The farms are of all scales, ranging from subsistence farming to

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<sup>7</sup> This one-month moratorium has resulted in social problems of its own, as otherwise unskilled fishermen annually become derelict, often lapsing into alcoholism and homelessness. It may take the better part of the next year to recover, at which time the next month-long "vacation" rolls around.

full industrial production; there were over 830 such facilities in operation during 1998. Chile's aquaculture industry has since grown to place it second only to Norway in annual production.

Fingerlings are raised in freshwater ponds, and released into cages of floating nets upon maturity (Fig. 12). This change happens rather quickly, as these fish are genetically



**Figure 12: Chilean fish farm**

(Source: Geneglance)

modified for rapid growth. The density of fish within the containment will be very high when, in a few weeks, the fish reach harvest size. In order to stave off viral infection, the fish are individually inoculated prior to release. Bacterial

infection and parasite infestation are treated *en masse* with antibiotics and pesticides.

The fish are so weakened that, in the wild, their mortality rate would be 50 times greater than their wild cousins. Before the fish are harvested, they will have consumed 20 times more food (in the form of fishmeal pellets) than they ultimately produce in meat (Diamond 2005). Once harvested, the meat will be dyed an appropriate color prior to ice glazing and shipping.

Fishmeal pellets are distributed by hand, resulting in a flurry of activity as the fish battle for access (Fig. 13). The water appears to boil. The pellets slowly sink through the containment, the majority being consumed in the descent. In order to assure that all (or most) of the fish get enough to eat, however, it is necessary to slightly overfeed them. Some excess invariably sinks through the bottom of the cage. This overflow, in conjunction with the fishes' own waste,



**Figure 13: Feeding time**

(Source: Eurofish)

produces a region of nitrogen-rich nutrient solution immediately below each cage. Algae and phytoplankton thrive in such conditions, and algal blooms are the persistent bane of the fish farmer (Diamond 2005). During such blooms, the waste products produced by the algae and decomposing phytoplankton render the water extraordinarily toxic, and reduce available oxygen to the point where the captive fish are simultaneously poisoned and suffocated. The stench of eutrophication is often disruptive to coastal towns, depending upon the wind conditions. The water is treated to minimize the more prolific blooms, but such treatments further weaken the fish, and can only be temporary measures in an open system. Further, due to the movement of the Humboldt Current, it is as likely that the bloom affecting any given farmer was generated by farms further south as by his own actions. The blooms he generates may well end up affecting farmers further north.

The weakness genetically instilled in these fast-growing fishes, exacerbated by a lifelong barrage of chemical abuses, does not always remain confined to the cage. Escapes happen, and interbreeding with wild strains weakens the gene pool, doing damage over and above that inflicted by the chemical pollution. Conventional, capture fishing has suffered as already depleted fisheries are further stressed by sickly fish (Diamond 2005).

Further, as mass production of farmed fish drives market prices down, commercial fishermen must now increase their catches to make the same profits (Diamond 2005). The fisheries are further stressed, and fishermen must range ever wider to find marketable hauls. Territorial disputes are becoming more frequent along the border waters of Chile and Peru. Long-respected treaties are being increasingly violated with respect to incursion, sizes of catch, and protected species.

*Fresh Water Issues*

Chile's Region IV – Coquimbo – is home to three main watersheds: The Elqui, The Limarí, and The Choapa. The primary economic activity in the region is agriculture, and as this is the case, it has a growing problem. The region's water supply is utilized at maximum capacity – and it's drying up.

Ovalle, at the center of the region, is a city of 100,000 that has, in recent years, experienced tremendous growth and prosperity. The transformation is readily apparent in a cursory tour of the city; rather than renovate older sections, Ovalle has simply built an adjunct city next to the original. There are two city centers, with two city parks (Figs. 14a & 14b), located a scant six blocks from one another. Yet the prosperity is not equally distributed, as longtime resident Humberto Ruiz (2006) explains. “Many people are very



**Figures 14a & 14b: Two parks in Ovalle.** (Photos by author.)

poor now.” He indicates a dilapidated neighborhood, on the outskirts of the old section of town. Its houses appear broken down, with makeshift repairs. Fences and walls are covered with graffiti; groups of men mill about in the dusty street. Some of the families make cheese now, from small herds of goats. Many have left, seeking work in factories. “It’s the water,” he explains. “They sell it.” Sr. Ruiz is not referring to municipal supplies, and is not talking about utility bills. Rather, he is describing Coquimbo’s version of privatized water.

Water rights along the Limarí are historically by allotment, meaning that certain rights holders are entitled to a set share of the water in the river. Quantities are carefully gauged by meters set in gates along the main canals. These rights have been divided and redistributed over some five centuries, such that independent farmers could scratch out a living on relatively small farms. With the economic reforms of the last few decades, however, much has changed. Water allotments are now bid upon as shares, much like shares of stock. The market is not entirely open, as the equivalent of a trader's license is required for entitlement. When the reforms were emplaced, most independent farmers had no means with which to participate, and



**Figure 15: Goat farmer's residence, near Ovalle.**  
(Photo by author)

lost their irrigation rights. Their lands, now dry, have been slowly purchased at sharp discounts by the holders of water rights. Many such plots lie dusty and fallow. Some few plots still have goat farmers in residence, tenaciously holding on, their homes little more than hovels (Fig. 15). Sr. Ruiz claims that all of the water rights are now split among seven families in Ovalle (this claim could not be independently verified). One of the owners is Casa Tamaya, SA (René Merino, Exec. Dir.), of Santiago, proprietors of the only vineyard in the Limarí watershed. Overall, the tax base has increased, explaining the boom in Ovalle. Yet, many appear to have suffered as a result.

This system has been lauded as the best way to assure the most efficient utilization, and to minimize waste. Efficiency measures are especially important, as rainfall in the region has been in steady decline. Sr. Ruiz (2006) claims that the change occurred some twenty years ago; records, however, indicate that the decline has been taking place for much longer. In fact, mean precipitation in Coquimbo has declined steadily since about 1905, from 170 mm annually to about 60mm (Diaz, et al. 2004). For rain fed crops, this decline has proven disastrous. Ovalle once had a thriving wheat crop. Fields



**Figure 16: Desertification outside Ovalle.**

(Photo by author)

formerly devoted to wheat are now utterly desiccated, barely able to support cacti. Soil accumulates against fences in drifts. Poor residents range across the land, scavenging scarce bits of wood for their cooking fires as they watch over their goat herds. The land is becoming a desert (Fig. 16).

The desertification process has been documented since the mid 1990s; several projects have been funded to help with education geared toward remediation (IUCN 2001, UNDP 2002, Diaz, et al. 2004). The causes of the process are well understood; raising crops on increasingly marginal land has depleted soil nutrients, and irrigation has contributed to salinization. Deforestation has altered local precipitation patterns, resulting in sharply diminished rainfall; patterns are further disrupted by ENSO effects. The raising of goats has been the final blow, as goats are inordinately destructive of dry, marginal grasslands, both in their browsing methods, and with their sharp hooves.



**Figure 17: Lucia Glacier receding.**  
(Source: NASA)

Long-term planning indicates more problems in the years to come. The Limarí is fed by the confluence of the Río Grande and the Río Hurtado. Each tributary has its own reservoir (Paloma and Recoleta, respectively). The reservoirs help ease the difficulties associated with drought years, but are becoming

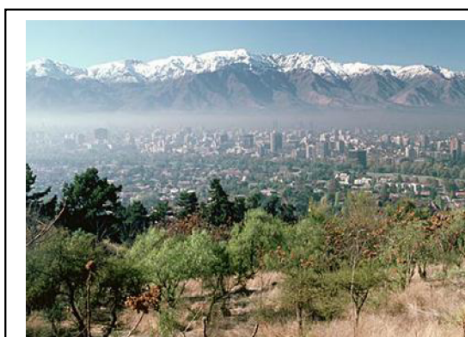
increasingly strained as precipitation continues to wane. Both tributaries are fed by runoff from glacial melt in the Andes. The glaciers, however, are rapidly retreating (JPL 2003) across the entire range. Paradoxically, this change has generated an increase in runoff for most watersheds. Yet, when the glaciers have sufficiently melted, annual runoff will be governed by the previous winter's snowfall. The true reservoirs are the glaciers – and they're going away (Fig 17).

#### *Air and Water Pollution*

Chile is a country of environmental extremes. It encompasses a greater continuous latitudinal range than any other country. It has the driest desert on the planet (the Atacama), yet is home to one third of the world's remaining temperate forests. It reaches further south than any country, and has one of the longest continuous coastlines of any country. Indeed, the coastline of Chile is, perhaps, its most significant feature. The Andes range forms a continuous natural boundary along the entirety of Chile's eastern border; yet that range averages only 100 miles from the Pacific coast over Chile's entire length. Chile's average population density is just over 21 persons per km<sup>2</sup>, less than half of the world's average; yet one third of the population lives in one city (Santiago), and



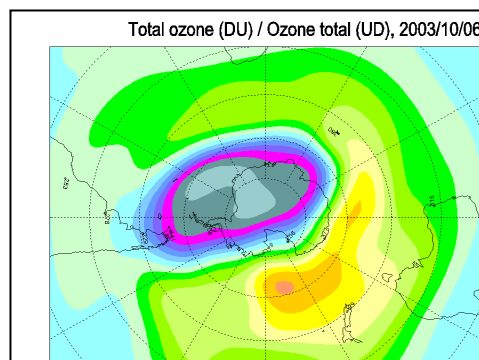
90% of Chile's 16 millions reside in the middle third of the country (IAEA, 2006). It is impossible to characterize Chile's environment in any single way – it is comprised of extremes.



**Figure 18: A haze of pollution over Santiago, 5/06** (Source: Santiago Times)

Some of Chile's environmental problems are quite severe. Santiago ranks among the most severely polluted cities on Earth (EIA 2002). With its eighth air quality alert just called (*Santiago Times* 2006), Santiago has already broken its 2005 record for the most such alerts in a single year – and the season is just beginning (Fig.18). Santiago's foreign-owned sewage treatment facilities, which only began operation in 2003, have been repeatedly fined for spills and other failures and violations. At this point, there is but a small pilot project in operation, treating 4% of Santiago's wastewater, with the remainder being dumped directly into the Mapocho and Maipo Rivers (NRTEE 2005). The Mapocho, which bisects the city, runs quite rapidly – yet the water is thoroughly opaque and milky brown in color, as it is choked with raw sewage and industrial effluents. The Maipo, immediately south of Santiago, is in a similar state. Regulations passed in 2002 (US Dept of Commerce 2006) require that all wastewater in the country be treated by September of 2006; it remains to be seen whether that goal will be reached.

Stratospheric ozone depletion continues to put southern Chile at risk of hazardous levels of ultraviolet exposure. In recent years, advisories

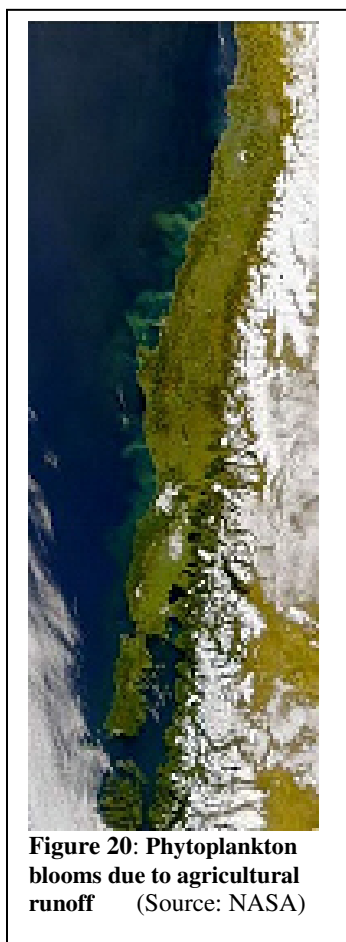


**Figure 19: Ozone "hole"**  
(Source: Environment Canada)



have been regularly issued in the southern regions (Fig. 19). In 2000, a “yellow” alert (sunburn in as little as seven minutes of exposure between the hours of 11:00 am and 3:00 pm) was announced for Punta Arenas.

While these, and a host of other, environmental problems continue to mount in Chile



(as nearly anywhere), and make sustainability a more complicated issue, it is often difficult to find an association with Chile’s globalization. Agricultural runoff, primarily in the form of fertilizers, reduces water (and soil) quality across entire regions (Diamond 2005). Effluents from drainage basins regularly produce phytoplankton blooms off Chile’s central coast (NASA 2005) (Fig. 20). But the fact that there is a global market for Chilean produce is, at best, only indirectly associated with problems resulting from Chilean agricultural methods. The fact that Santiago’s sewage treatment is being contracted out to a European consortium is of little consequence; Santiago’s waste treatment problems long pre-existed such arrangements. Ozone depletion is

readily attributable to the production and release of chlorated fluorocarbon compounds (Wolfson & Schneider 2002) and other chemicals by most industrial nations – it is a problem truly global in scope. Yet, that has little to do with globalization – in Chile, or anywhere. Thus, the fact that environmental degradation is taking place, and is, indeed, visible in its effect, cannot be construed as a positive indicator of globalization.

Certainly, much the same may be said for problems of social or economic destabilization.

Still, the evidence of the strong statistical correlation between globalization and environmental degradation persists. One explanation might be that globalization is but one of (perhaps) several socio-economic phenomena contributing to environmental degradation. In that sense, evidence of globalization may rightly lead one to expect adverse environmental effects, without the reverse necessarily being true. Another explanation might be that there is no direct causal relationship at all; rather, that both environmental degradation and globalization are attributable to some common cause(s). Yet another possibility is that the scale is inappropriate – that attempting to isolate either environmental degradation or globalization *by country* is misleading, indices notwithstanding. It may well be the case that either or both environmental degradation and globalization are unitary global events; visible at many scales, perhaps, yet measurable only in their totalities. Under such circumstances, attempting to get local measurements of the phenomena, or either of them, may be misleading – or simply not valid.

The environmental effects of globalization in Chile are not truly destabilizing. In each case, market and societal pressure are but pushing ecosystems to their respective brinks, rendering them vulnerable to collapse – without ever quite pushing them over the edge. A dead, sterile lake or stream is a stable ecosystem if nothing lives there for a long time. If an ecosystem is stressed to a point, and *held* there, the system may be “brittle” from an ecological standpoint, yet can usually stabilize if there is a new balance struck between the remaining constituent species. If it sufficiently reduced, the brittleness of the system renders it vulnerable to even small changes, and the likelihood of its collapse is magnified proportionately. From the standpoint of sustainability, the ability to maintain a

given standard of living across generations, the *vulnerability* of the supporting environment is the crucial indicator. Environmental stability is not measurable in any terms but duration, and says nothing about the level at which stability has been maintained. Environmental degradation is measurable in many ways, as has been seen in Jha and Murthy's (2003) study. Environmental vulnerability, however, may ultimately be a better approach to estimating sustainability. If quantifiable indicators of environmental vulnerability were established, a meaningful measure expressible in terms of probabilities would result. From this, and equivalents relating to society and economy, it would be a simple matter to frame the likelihood of sustainability in probabilistic terms.

### **Findings: Social Destabilization**

#### *Culture Loss*

Globalization has a tremendous impact on peoples' values (Bourette & Reader, 2005), and, thus, on culture. In many cases, value systems can be so diluted or distorted by globalization's effects that the cultural system is all but lost. In many cases such losses are actively sought by certain segments of society. Young people may don novel, foreign styles of clothing, for example, or take up listening to the latest foreign pop music, at the expense of traditional patterns. In other cases, there is active resistance to the incursion of foreign values; France maintains an ongoing national effort to retain the exclusive use of the French language in its media, business dealings, etc. In either case, society is destabilized, as conflict is generated within and/or between the value systems of various segments of society. This phenomenon (culture loss and/or resistance thereto [CLR]) has been the root cause of considerable social strife through history, and has been suggested as one of the primary causes of contemporary terrorism.

Chile provides (at least) two good examples of CLR – one of culture loss and the other of resistance thereto. The Huilliche (sometimes spelled “Huillice” or “Williche,” meaning “people of the south”) have, through historical circumstances that have been quite irresistible, lost all but a tiny vestige of their former culture. The Mapuche (meaning “people of the land” or “people of the earth”) have succeeded in retaining considerable integrity in their culture, by maintaining a fierce vigilance against all interlopers, at any odds. The histories of these indigenous tribes are at once proud and tragic – for very different reasons.

The southern temperate regions of Chile, from Valdivia to the island of Chiloé, are the ancestral home to the *pueblo* Huilliche (Gordon 2005). They are known as a peace-loving people (Muñoz 2005), and this noble trait may have been part of the reason for their split from their warlike cousins, the Mapuche, many centuries ago. The two tribes were in a chronic state of dispute; a low, smoldering war. When the Spanish conquistadores arrived in 1540, they were immediately set upon by the Mapuche. The Huilliche sided with the Spanish (presumably on the theory that the enemy of my enemy is my friend), at least to the extent of providing supplies and intelligence. The Spanish were overwhelmed nevertheless, and forced to retreat to Huilliche-held Chiloé, where they were besieged for three years. Spanish reinforcements and colonists soon followed, however, and the conflict with the Mapuche continued for 100 years. In 1641, the Treaty of Quilin was signed with the still-undefeated Mapuche. The Huilliche remained *de facto* allies with the Spanish throughout this period.

The Mapuche arrived in the Southern Cone about 12,000 years ago, and spread to occupy much of the temperate range of the continent – from about 33° to 44° South, from

coast to coast (UNPO 2006). The Maule River was established as northern boundary of the Mapuche range in (what was to become) Chile – the tribe resisted repeated efforts by the Inca Empire to expand further south. The Mapuche resisted over two hundred years of Spanish attempts to suppress them, as described above. And, in spite of ongoing efforts to integrate them, the Mapuche continue to resist the Chilean government. By their standards, the Mapuche have never been conquered.

However rich the Huilliche culture might once have been, to what degree their lifestyle diverged from that of their Mapuche forebears may never be learned. By integrating themselves with the Spanish, they assured the demise of their own cultural values. Raúl Molina (1987) of the Chilean Office for Chilote Development summarizes the process:

With the penetration of the Spanish conquistadores into Huilliche territory, the natives subjugated and enslaved themselves, abandoning their traditions, customs, beliefs and the use of their own language, as in many of these things the people were considered wild and/or heretical by the missionaries, the promoters of ideological and spiritual submission.<sup>8</sup>

Perhaps it simply never occurred to the Huilliche that subjugation without conquest was even possible, much less that it might happen to them. For the Huilliche, sister tribe to the Mapuche, had never been conquered. They had never, in all of their long history, seen, nor had reason to imagine the effects of, colonialization. The Spanish missionaries, simply by virtue of their pomp and utter arrogance, in conjunction with the straight-faced concurrence of the Spanish soldiery, *shamed* the Huilliche culture into retreat, hibernation, and eventual extinction. (To this day, the word *chilote* has the connotation of an ignorant, backwoods bumpkin – a “hick.”) The Huilliche people avidly embraced the new value system of the Christian Spaniards, and they and their values, their heritage,

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<sup>8</sup> Translated by author.

were utterly subsumed in the process. Yet the Huilliche would probably not have considered this as a loss – rather, the reverse. In their own estimation, they were proudly learning to be sophisticated, worldly.

There are now about two thousand people fluent in Tsesungún, the language of the Huilliche (Gordon 2005). Those that learn the language do so in school, as it is no longer native to anyone (Muñoz 2005). There has been a recent effort to restore some Huilliche architecture and ritual in a town on Isla Chiloé; yet these are reconstructions without models, and rituals without intent. The remnants of the original Huilliche culture exist in the form of a few folk tales and magical spells, cures, and hexes<sup>9</sup>. The Huilliche culture has all but vanished.

The Mapuche, in contrast, have resisted the dilution of their culture continuously from the arrival of the Spaniards. The ethnic population is about 1.5 million (Gordon 2005); 200,000 are fluent in Mapudungún, the Mapuche language. Only 85,000 are literate in Spanish. They continue to hold some of their traditional lands, albeit much truncated. Traditional religious ritual is still practiced by many. Most significantly, they continue to hold onto their *identity* as a people. Their values are, by and large, their own.

Nevertheless, there has been considerable inculcation of European values into the Mapuche lifestyle. Many are Christian (Gordon 2005). The majority wear, or at least own, European-style clothing. Virtually all use Chilean currency. Many Mapuche children in the Temuco area attend public schools – which teach no Mapuche history whatsoever (aside from the fact that they were “pacified” by the Chilean government in 1883) (Garnica 2005). “The educational system is designed to promote cultural uniformity” (UNPO 2006, np).

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<sup>9</sup> Even much of the surviving magical ritual is couched in terms of Christian symbology.

Government at all levels (national, regional, and municipal) has persistently exerted considerable pressure upon the Mapuche to abandon their cultural integrity, and instead integrate themselves with the Chilean population. In 1979, the Pinochet administration enacted an “Indigenous Peoples Law” “the aim of which was to destroy the traditional communities of the Mapuche” (UNPO 2006b, np). Dams and highways are built through Mapuche lands, disrupting the lives of thousands, and dividing the ancestral Mapuche territory (*ibid.*).

The existence of the Mapuche people is not recognized by the Chilean constitution nor does Chile subscribe to international agreements that promote and protect human rights and rights of indigenous people. This means that neither the legal nor the educational systems are obliged to make a distinction between the Mapuche and the Chileans. As a result, the ancestral territorial resources of the Mapuche are continuously ignored.

The Mapuche are not only politically marginalized, but socially and economically as well. Racism with respect to the Mapuche is not merely tolerated – it is the norm. Police brutality (including torture) in dealing with Mapuche offenders is commonplace, and has not abated in the least, the democratization of government notwithstanding. Private sector abuses are frequent as well (UNPO 2006b, np):

National and multinational companies and big land owners, in co-operation with the local police, intimidate and threaten Mapuche families, in some cases leading to eviction from their homes and ancestral lands.

The majority of the prison population in Temuco is Mapuche. The Mapuche are held to an inordinately low standard of living, suffering “from poor housing, malnutrition, illiteracy, alcoholism, tuberculosis and a high rate of infant mortality” (*ibid.*).

It is, perhaps, little wonder that the Mapuche have become increasingly desperate to retain what little of their traditions, and traditional holdings, as remain to them. Protests

and marches are frequently held in Temuco, yet seem to have little effect. Violent demonstrations occasionally erupt, but are harshly subdued. Mapuche-related political graffiti adorn many walls, and even public vehicles (Fig. 21). Most homes are enclosed in sturdy fences with sharpened tips; windows are nearly always barred. The older sectors of Temuco, in many respects, appear to be under siege. Acts of vandalism, especially against corporate interests encroaching on Mapuche lands, are becoming more



**Figure 21:**  
**“FREE THE MAPUCHE POLITICAL PRISONERS”**  
 – Graffiti on a house in Temuco. (Photo by author)

overt. Four Mapuche protesters were recently sentenced to ten years imprisonment, under anti-terrorism laws, for setting fire to a corporate tree farm planted on erstwhile Mapuche lands. According to news reports

(Reuters 2006, IPSNEWS 2006), the four have gained concessions regarding certain improprieties in their case (such as testimony against them being provided by anonymous witnesses, not subject to cross-examination) – after staging a 63-day hunger strike, and garnering international attention.

The incursion of foreign value systems into cultures is one of the drivers of globalization (Bourette & Reader 2006). Both the Huilliche and Mapuche have experienced this to extreme levels. The question, however, is whether the results are sustainable. In the case of the Huilliche, the original value system is effectively extinct – a stable state, and apparently sustainable long into the future, as the Huilliche culture probably won’t be making a comeback anytime soon. In the case of the Mapuche, it would appear to be but a matter of time before a similar conclusion is reached. Social



stability is one of the pillars of sustainability; the stability of extinction, however, cannot be construed as the referent. In an extreme example, one of the final outcomes of globalization would be the homogenization of all cultures – the equilibration of all value systems. This solution might even prove to be stable. The question is whether the quality of life under such circumstances would be comparable to that which we of the current generation hope to assure for future generations.

#### *Degradation of Monumental Public Architecture*

Along with roads, logographic writing, and a codified system of law, monumental public architecture is one of the indicators of a state level of societal organization (Service 1975). Examples can be found the world over, and through all of history; further, no exceptions have been found. If this pinnacle of societal organization is characterized by such developments, might a decline in such organization be characterized by a diminution or degradation of those same indicators? Monumental public architecture is, as the name suggests, both monumental and public – and is, thus, guaranteed to be highly visible wherever it occurs. Might it not be the case that, when state-level societal organization begins to become disorganized, the process is mirrored in the degradation of its monumental public architecture? While such degradation may be difficult to quantify, it is certainly easy to observe, and may provide a useful tool in estimating social stability – one of the three pillars of sustainability.

Monumental public architecture (MPA) is present throughout Chile, from the largest cities to the smallest towns. It is, by its nature, centrally located wherever it exists, and is easily accessible to the public. Parks, squares, courtyards, etc., are the favored places for

the erection of MPA, although a large example in Valparaíso is in the median of a major highway, near the governmental center.

MPA was sought in each city or town visited, specifically to look for signs of degradation. In Temuco, a large bronze statue depicting the various warrior types that have wielded their craft in the region stands in the center of a large city park. It is in impeccable condition, utterly without mark or scratch (Fig. 22). Indeed, the park in which it stands is clean, well-maintained, and quite beautiful. If state-level organization is in decline in Temuco, this example certainly does not provide any indication.



**Figure 22: La Pacificación in Temuco.**  
(Photo by author)



**Figure 23: Battered, illegible plaque.**  
(Photo by author)

The central square in Ancud boasts a raised platform for public address, a variety of colorful flower gardens, recently-replaced lamp posts, and a picturesque view of the sea. Central in the square is a short promenade, bordered by twelve pedestals on

which are/were mounted carved stone sculptures of mythological figures. A hand-painted plaque on the face of each pedestal describes the mythology behind the figure mounted. The paint of the plaques is chipped and peeling; in some cases it is marred by graffiti (Fig. 23). The stone figures are in terrible disrepair. Three of the sculptures are missing altogether, torn from their mounts. One is



**Figure 24: Reassembling a figure in pieces**  
(Photo by author)

shattered, its shards still on the ground about its pedestal (Fig. 24). None has escaped abuse.

Valparaíso, due to its history as a bustling port city, and also due to the narrow strip of



**Figure 25: Copper sculpture in Valparaíso.** (Photo by author)

flat land wedged between steep hillsides and the sea, has very little to spare in the way of building sites.

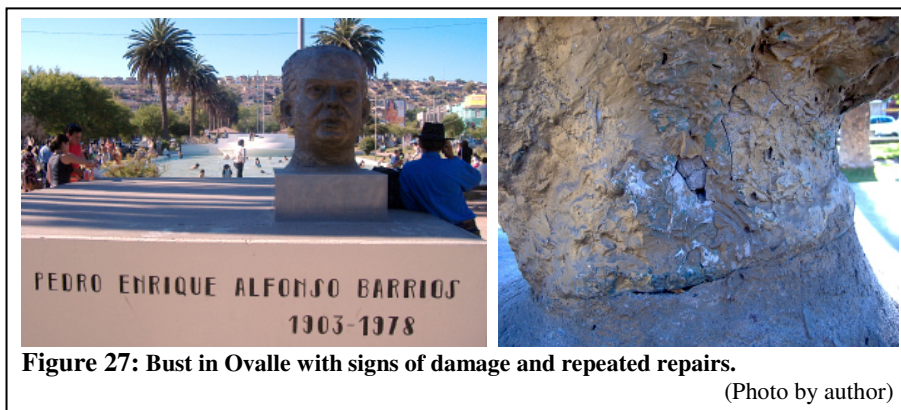
There is but one major highway in the city, the main north-south thoroughfare is six lanes with a wide, upraised concrete center median. This space was selected as the appropriate site for the erection of an immense copper sculpture (Fig. 25). The basic

design is simple – it looks like four gigantic snips of copper wire (about 3 ft in diameter) that have been twisted together at one end. The sculpture is mounted standing upright, the splayed base ends anchored in the concrete of the median, and the four tightly twisted ends pointing skyward. The sculpture is perhaps forty feet in height. Given the relatively light patina on its surface, the sculpture is undoubtedly new. Fresh graffiti marred its legs to a height of about six feet, but it did not display any kind of structural damage such as scratches or dents (Fig. 26).



**Figure 26: Graffiti on the sculpture's base.** (Photo by author)

Ovalle, as previously mentioned, is really two overlapping cities. There are two central parks, and each displays its own MPA in the form of busts of historic leaders. In the older park, there is a bust of Pedro Alfonso, a local boy made good, mounted on a low pedestal overlooking a reflecting pool (Fig. 27). The pedestal is thoroughly marked with

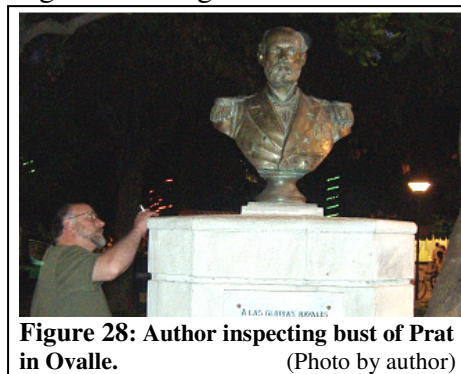


**Figure 27: Bust in Ovalle with signs of damage and repeated repairs.**

(Photo by author)

graffiti, and the head of the bust appears to have been knocked off at some point –

perhaps repeatedly. There is evidence of patching and other repairs having been made, but the crack at the base of the neck is still apparent. In the newer park is a somewhat smaller bust of Arturo Prat, a famous sea captain who died in the War of the Pacific (Fig. 28). The pedestal is faced with marble, and shows signs of having been marked with graffiti, but the marks had been scrubbed to near invisibility. The surface of the marble was worn down in the process, but the cleanup was painstaking and thorough. The bust itself is in pristine condition.



**Figure 28: Author inspecting bust of Prat in Ovalle.**

(Photo by author)

Santiago has numerous parks, squares, and plazas, most of which have their own examples of MPA in the form of statuary, cannon, busts, and other sculpture. There are innumerable examples throughout the city, yet none was particularly noteworthy. Graffiti were noted in some cases, but not others. None displayed physical damage; some displayed evidence of minor cleanup. The most common stain of any sort was attributable to the local pigeon population.

The examination of degradation of Chile's MPA has been a cursory first glance at what may prove to be a useful tool in estimating societal movement away from state-level

organization. In order to establish a statistical base, the study would have to be expanded to encompass many countries – and all of them, including Chile, across time. At this point, it is simply worthy of note that there appears to be but moderate degradation of MPA across Chile, which would be consistent with Chile’s median placement within the ranges of both globalization and environmental degradation.

### **Findings: Economic Destabilization**

At the state level, the only factor concerning Chile’s economy that might be characterized as unstable is its high rate of growth. From an economic standpoint, this increase can hardly be considered a flaw; it is generally interpreted as a sign of robust strength. While economic growth seems to be more pronounced in some regions than others, Chile’s social programs appear to handle gross redistribution effectively. But the wealth is far from evenly shared.

Chile has a potential problem in the distribution of its wealth across its population. According to current World Bank (2006) data<sup>10</sup>, income levels for the upper 20% of Chile’s population are nearly twice those of the remaining 80% combined, and three times those of the lower 60%. The top 10% makes nearly five times as much as the bottom 40%. The poorest 20% make 3.3% of Chile’s GDP, and the poorest 10% makes less than half of that (1.2%); this lowest bracket makes less than \$2 per day (PPP). The poverty gap at this level is 2.5%, putting Chile nearly on par with Costa Rica and Jamaica.

Many would consider this poverty rate (9.6%) far too high for a country with such a robust economy (6-7% growth per year), and such a high GDP (World Bank 2006). Chile’s GNI per capita (\$5,220) is substantially higher than any other country in South or

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<sup>10</sup> The survey date for the data for Chile’s most current GINI calculation (57.1) is 2000.



Central America. Chile is still in a strong growth phase, however; it may well be the case that the problem of poverty simply hasn't been addressed yet. Conversely, recent unemployment figures are substantially higher than those of 10-12 years previous (7.4% for 2000-04 vs. 4.4% for 1990-92), and PPP/GNI per capita (\$10,610) is lower than that of Argentina (\$12,530) (GNI/cap \$3,580).



**Figure 29: Housing projects in Santiago (La Florida district)**  
(Photo by author)

The situation may not be improving. La Florida is among Santiago's poorest districts, and substantial government housing projects have been constructed in the last few years (Fig. 29). But they are of poor quality and design, built

largely of cinder block and corrugated tin. The neighborhoods that they have helped establish appear more decrepit even than the older surrounding blocks (Fig. 30). Further, the fact that the Mapuche population represents 10% of Chile's total (as discussed above in the section on culture loss) may figure prominently in Chile's total poverty demographic. It would be interesting to learn what proportion of Chile's poorest are Mapuche, given their recognized low standard of living.



**Figure 30: Trash dumped at end of residential street, La Florida.**  
(Photo by author)

## **Discussion – Vulnerabilities**

### *Environmental Vulnerabilities*

Market-driven pressure to continue to export raw or minimally processed materials is unquestionably the greatest single threat to Chile's environment. Losses in fisheries, due directly to overfishing, and to aquaculture indirectly, destabilize ecosystems. Biodiversity is further threatened by deforestation and massive tree plantation efforts; losses have already been devastating, and irreparable in the foreseeable future. The introduction of exotic species (pine, eucalyptus, Atlantic salmon) on such mass scales may have unforeseen repercussions as ecosystems adjust. Anthropogenic climate change, on both local and global scales, is contributing to the degradation of vast tracts of formerly productive land. Soil degradation due to monocropping, salinization, and desertification are already beginning to be problematic, and the trend is increasing. Air quality, at least in the Metro region, is a growing health threat.

Increasing fresh water use and degradation pose a looming threat to Chile's environment, even as supplies dwindle. Indeed, it is precisely due to glacial melt that Chile appears to have greater fresh water resources than it in fact does. That Chile has responded to this necessarily temporary abundance by growing in accordance with the increased flow is particularly alarming. The response should be one of caution, rather than exuberance.

#### *Social Vulnerabilities*

The fact that Hispanic Chile, being two-thirds *mestizo*, has no long history of tradition or value system that is uniquely its own presents a particular flexibility with respect to the incursion of foreign culture. There is very little that can be called uniquely Chilean; indeed, it is a matter of national pride that the Chilean people are so strongly influenced by European values. Chilean cuisine is relatively narrow, remarkably bland, and

explicitly little modified from its European origins. Chilean religion is, typical of most Latin American countries, strongly Catholic – yet, even that is being influenced by an influx of Protestantism from abroad. Chile has produced something of a national accent, but the Spanish is, even after some five centuries, little changed from pure Castillian. There is no traditional Chilean style of dress that is not directly derived from another culture. Except perhaps in wartime, there is little to anticipate in the way of Chilean identity at all. This lack of coherent identity is Chile’s greatest social vulnerability.

It is convenient to use Chile’s indigenous Mapuche as a contrast in cultures. The Mapuche have, despite the concerted effort of a much larger, more pervasive value system surrounding and encroaching upon them, retained much in the way of cultural markers uniquely their own. There is no question about the origins of a coarse woolen *manta*. No one doubts the native origins of Mapudungún, nor would any confuse the identity of a speaker of that language. The religion of a priestess-woman (*machi*) in ceremonial garb rhythmically beating a *cultrún* drum while standing perched upon a *kwakiutl* (a sort of totem pole) is, beyond question, specifically and uniquely Mapuche. And no Chilean would order horsemeat – or even rabbit – from a menu other than in a Mapuche restaurant, if ever. There can be no doubt whatsoever as to the enduring identity of the Mapuche people. They are *not* Chilean, as any would readily attest. The real question is whether *anyone* is truly Chilean<sup>11</sup>.

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<sup>11</sup> This question is not intended to neglect, or in any way disparage, those who have lived in fear, suffered or even died in the service of Chile. These are true patriots – nationalists of the first stripe. The topic at hand, however, relates to longstanding *cultural* values, as opposed to heroic responses to dictatorial brutality. The intent is to refer to the differences between tribalism, nationalism, and statism in re identity. See Bourette & Reader (2006).



The lack of cultural identity is Chile's social vulnerability. While there is no doubt about the citizenship of the (legal) residents of Chile, the question of national identity



Figure 31: Supporters of Piñera for President in Ovalle. (Photo by author)

looms large. Chile is rather like an entire state comprised of individuals. No one is a member of any group, other than perhaps their church, or a sports team. The phenomenon goes but little noticed until an opportunity for participation in a group identity arises. During the final weeks of campaigning prior to the recent presidential election, *hundreds* of exuberant, drum-beating, flag-waving, loudly singing partisans marched through cities large and small, at all hours, every day (Fig. 31). No major intersection was devoid of its own band of smiling, *enthusiastic* political cheerleaders; often, groups from both sides milled through each other, flocking to participate – and be identified with a group. (Group identity was strong enough to flare into violence from time to time as these groups intersected). The flags being waved were either red or blue; not one Chilean flag was in evidence. The songs and chants were for Piñera or Bachelet<sup>12</sup>; no anthem arose. Even the campaign slogans spoke to individual interests. Piñera exhorted the voter to “*¡Quiere Mas!*” (“Want More!”), while Bachelet explicitly promised the voter that they are *not alone*; “*¡Estoy Contigo!*” (“I Am With You!”) was her slogan, and with it, she won the election. Chileans, after all, would rather not be alone.

With the elections now over, as Chile settles back into its routine, the identities so fervently, yet so briefly, adopted slip into quiescence. The individual is once again the

<sup>12</sup> Presidential candidates Miguel Juan Sebastián Piñera Echenique (National Renewal Party) and Verónica Michelle Bachelet Jeria (Socialist Party)

top social entity, independently making decisions too large, and succeeding, or failing, alone.

This image, while poignant, introduces a more practical danger. It is clear that the Chilean people are extremely interested in group participation; perhaps “starved for” is a better choice of phrase. There would seem to be a potential for a political movement in Chile that could take nearly any direction, as all it would take is a personable visionary with a persuasive tongue – and a cause. If Chile ever falters, has any motive to doubt its direction, for any reason, beware. Chileans, perhaps as one, certainly as many, earnestly desire some excuse to act as a group or groups. Chileans, *regardless of Chile*, want some identity. Such a condition is fertile ground for social instability, and this is Chile’s vulnerability.

#### *Economic Vulnerabilities*

Under the neoliberal policy established by Chile’s former military dictator Augusto Pinochet, globalization has leveled its sights upon the easiest of the state’s targets – its resources. Labor is not especially cheap in Chile, compared to other South American countries; indeed, migrant workers flock to northern Chile from both Bolivia and Peru. Taxes and the beginnings of some environmental restrictions put Chile on par with many other developed states, and, thus, considerably less open to the relocation of physical plants than several other choices. Global moneylenders and development organizations still encourage Chile to develop some of its infrastructure; Chile’s portfolio with The World Bank, however, is a very modest \$245.3 million over seven projects, with the bulk of the funding toward education (World Bank 2006). Chile’s cultural resources (with the minor, and fully exploited exception of Rapa Nui) are decidedly not exploitable. But

Chile's resource base (copper, wood chips, fish, and produce), in conjunction with its open-arms policy regarding global trade, render it a prime target for environmental exploitation.

While Chile's natural copper deposits seem inexhaustible (CODELCO [2006] claims 77 million metric tons in reserves), they are finite – and utterly nonrenewable. Worse, Chile does little more with this resource than auction it off. The state's industrial capacity lies latent, yet dormant, while Chile squanders the opportunity to maximize its position in the global marketplace. Instead, it chooses to play the part of a Third World purveyor of raw materials. Ultimately, this is a noncompetitive position, and it may cost Chile dearly. Liquidation cannot be a sound strategy for long-term economic stability.

Copper is the obvious example to begin a list of Chile's non-renewable resources. Chile's other mineral resources, including molybdenum, iron, and nitrates, clearly belong on such a list. There are, however, some additional candidates for the list that frequently go unnoticed, yet deserve treatment. Biodiversity, for example, is utterly non-renewable in any time frame that can matter to the Chilean economy. The same can be said for fresh water, old growth forests, soil fertility, and even air quality in persistently high-density regions. Yet each of these is being "sold," albeit indirectly, on the world market – and they are being systematically depleted. It is true that any of them may, given sufficient time, completely regenerate to full capacity. But the time frames involved are measurable in hundreds, or even thousands, of years. From the standpoint of resource management, short-term depletion of these resources is the single factor worthy of economic consideration; for all practical purposes, they are nonrenewable. As each, in turn, is depleted, Chile's economic outlook must falter – and there is little hope for

recovery from the failure of any of them. This is Chile's greatest long-term economic vulnerability.

## **Conclusions**

### *Conclusions for Chile*

Globalization is having marked effects throughout Chile. Many are quite visible, especially with respect to resource exploitation. Others are more subtle, as Chile is so very open to them. (The effects of globalization are notoriously most visible when there is resistance to them [Bourette & Reader 2006].) The primary effects anticipated were environmental degradation and socioeconomic destabilization in various forms. Most were observed in at least moderate degrees; some were quite severe. Chile's medial positions with respect to both the globalization indices and the environmental degradation index appear to be valid, although this is a subjective estimate without even the benefit of comparison. Nevertheless, it may be concluded that globalization has a negative impact upon the three pillars of sustainability in Chile.

### *General Conclusions*

Examination of either sustainability or globalization piecemeal, e.g. by country, is probably not a valid approach. Both phenomena are continuous across the global socio-economic landscape; further, the effects of an agent in a given place are by no means assured of manifesting in that same place. The very nature of globalization tends to minimize distance as an operant factor in any case. It should come as no surprise that causal agents (of globalization) and effects (on sustainability) are, in many instances, far removed from one another. By virtue of the market relationships between states that export raw materials, those that finish production, and those that consume the products,

environmental degradation is not uniformly spread. Rather, each contributes its own measure of degradation to a global whole. Contributions to societal and economic destabilization may, perhaps, be found to have to corollary relationships.

Sustainability has been defined in terms of three different stabilities. Isolating and measuring these stabilities has, however, proven to be inordinately difficult. Indicators of stability mean very little when the level of stability being indicated is arbitrary.

Investigations into degrees of degradation or instability have proven to be more fruitful, yet indicator values that satisfy statistical requirements and are available across the field are few. Vulnerabilities, by contrast, are much easier to observe and measure, in that data are much more readily available, and indicators are easily standardized. Further, as has been the case in the current investigation in Chile, quantification is optional, as qualitative assessment is available and valid in its own right.

It is particularly noteworthy that globalization is not the visible sort of operator that market pressure is. One cannot observe agents of globalization whispering in the ears of fish farmers, nor catch globalization in the act as a Chilean lad purchases a Pizza Hut snack. There is nothing specific about globalization that actually renders any particular situation untenable. Globalization simply minimizes the values that may stand in the way of open market transactions between any two parties on Earth. No aspect of globalization renders stable states unstable; it renders such stabilities ultra-thin, brittle, and completely vulnerable. Globalization does not disable sustainability; it minimizes the probability of success in the endeavor by maximizing vulnerability.

## Chapter Five

### Considering the Ethics of Sustainability and Globalization

Globalization has long been an effector of change on cultures, and more recently on states. The impact of globalization on such human pursuits as business and international relations has been tremendous; the questionable point is whether such effects are beneficial – or sustainable. This section examines the ethics of such interactions, from the standpoint of globalization’s proponents and opponents, and from those of both the advocates of sustainability and its detractors.

In order to discuss meaningfully the ethics of the system at hand, or of any situation, one must have a clear understanding of the concept. At the risk of some tedium, it would seem worthwhile at this point to review the meaning of the interrelated terms *ethics*, *morals*, *values*, *obligation*, *rights*, *duties*, *justice*, *society*, and *culture*. These terms, and their relationships, will serve as the premises for the line of reasoning to follow.

According to Velasquez (1999, 16), who draws on established literature on the topic, **ethics** refers to that branch of philosophy concerned with

...our values and moral principles and how these relate to our conduct and to our social institutions. Ethics includes questions about the nature of moral obligation, what basic moral principles we should follow and what is good for human beings, the nature and justification of social structures and political systems, and the morality of various kinds of behavior and social policies that involve crucial human interests.

Clearly, **morality** is at the heart of ethics. Indeed, Velasquez (1999, 496) confirms, again by drawing on the established literature, that “morality is the subject matter that ethics studies,” and explains that “morality consists of the standards that an individual or a group has about what is right and wrong and good and evil.” “Moral standards,” he

continues, “are ideals that people try to live up to....and deal with matters to which we attach great importance.” *Values*, following Velasquez (1999) and others, is the term for those “matters of great importance”; it refers specifically to the assignation, or attachment, of importance to such matters. Moral standards, or simply morals, are thus the basis of the rules that guide human conduct (norms), and the stick against which such conduct is measured; the rules are assembled (and often codified in law) in an attempt to channel decision making in accordance with a system of morality; and ethics is the examination of such systems.

By such reasoning, adherents to a system of morality would appear to have an **obligation** to try to act according to the rules of the system. To some (Socrates, Plato, and Aristotle, to name a few), this obligation is the defining characteristic of membership in a **society**; society, by corollary, is defined by its system of morality. To the extent that such moral obligation limits the choices to action available to society’s members, it places something of a **burden** on such membership. Yet, the rules are not arbitrary; rather, they are based upon the values of the culture in which the society is enmeshed – they are matters to which importance is attached. (Just as a society is determined by its system of morality, a **culture** is determined by its system of values. See Lechner & Boli [2003] for examples.) When a breach of such obligation occurs, some other member of society will, in theory, be adversely affected. The affected member will naturally object that she is entitled to certain expectations as a member of society, inasmuch as she holds up her end of the deal. When her expectations are not fulfilled, she is understandably disappointed, and her complaint must be honored by society. For that is the very crux of the agreement – membership conveys certain privileges, or *rights*. Society could not

long endure if its rules of conduct were haphazardly enforced; motivation to accept society's burdens would become severely diminished. When undue burden is imposed upon a member due to the actions of another, the burden must be redistributed to reestablish parity within the system. This redistribution of burden is generally acknowledged as *justice*. When claims to rights are recognized, and to the extent that such claims are accepted by society, certain bearers of society's burdens may have a *duty* to specific performance, pursuant to its obligations as a member, ensuring that such rights-claims are honored (Orend 2002).

Environmental issues demand special attention within the purview of ethics. Societies, after all, must have places to exist; the qualities of such locales determine, to a large extent, the measure to which societies can function. Both as an area of habitation and as a resource bank, the environment in which a society resides takes on enormous significance in terms of its stability and capacity for continuity. Such considerations are necessarily "matters of great importance"; as such, there should be little argument over the "value" of such discourse. To the extent that the actions of a society impact the environment in which it exists, morality – the system by which a society conducts itself – is eminently at issue with respect to environmental concerns. It is a society's duty *to itself* to carefully assess the effects of its own actions. If a society finds that it has, by its actions, impaired its own environment, it must be prepared to bear the additional burden imposed by the resultant limited capacity to act in the future. To the extent that such additional burden might be reallocated, the situation demands justice, within the society itself. The rights of society as a whole are at stake. It is further a society's duty to itself to assure that its own rights-claims are acknowledged and respected, lest the very validity



of the society becomes questionable. This being the case, the very conditions in which ethics can be conducted -- namely societies -- are at issue. There can, thus, be no matter of greater import *to ethics itself*. The situation is entirely reflexive; society must peer into its own murky reflection as ethics studies its own moral predicament. Environmental ethics is, perforce, its own strongest proponent.

What, then, are the ethical considerations inherent in the question of the practicability of sustainability in the face of globalization? Answers may be gleaned by identifying the various positions in play, and by determining what is at stake for each of the holders of those positions.

### **In re Sustainability**

Proponents of sustainability espouse a very basic philosophy: it is incumbent upon the current generation to assure that future generations have the same, or greater, capacity to flourish in their environment as the current generation enjoys in its environment (adapted from Brundtland 1987). There is an inherent advocacy in this position, as there is a projected rights-claim being made on behalf of future generations. The problems with such advocacy are readily apparent. Can future generations have full rights in the context of the present? If so, can such claims carry the same weight as the conflicting claims of others made now? By what reasoning might such conflicts be resolved? Certainly, there is precedent for the notion that the current generation has enough problems, and that preceding generations in fact left them to solve their own problems. If this was sufficient reasoning then, why should it be different now? Might not future generations enjoy currently-unknowable benefits of technology, such that problems perceived today might be non-issues in the years ahead? In fact, isn't such innovation the most likely scenario?

And if faith in technology flags, there is still faith in God's capacity to take care of his own.<sup>13</sup> God made earth, God made humans, so isn't this God's bailiwick? Such debates are highly complex, and raise age-old questions spanning the whole of philosophy across the ages. In the last analysis, the questions seem ultimately to boil down to the purpose of humankind, the purpose of life, and the purpose of existence. From such an impasse, it is difficult to see how any further discourse may be held, much less meaningful resolution reached. But whatever decisions societies reach regarding their sustainability, now or in the future, what must be true is that *something* will happen. Societies have crashed in the past, and will likely continue to do so. The difference today is the degree to which societies are interdependent, each increasingly reliant upon the responsible practices and good will of every other to ensure a safe and reasonable environment in which to exist. Proponents of sustainability are thus not making their demands so much of individuals' lives, or even individual societies; the need is for a radical shift in the evaluation of the world as a single ecosystem, by (prospective) members of a global society.

Looked at in this light, sustainability advocates might reasonably welcome the homogenizing effects of globalization. Cultural value differences that result in various and disparate levels of awareness of the scope of the enviro-ethical problem are fast being subsumed in the flood of cross-cultural products and information in which they are inundated. The sheer quantity of new things and ideas sweeping across the global cultural landscape is bewildering to even the most seasoned; surely, it is sufficient to

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<sup>13</sup> These contentions, as phrased, would seem to apply only to monotheists. The emphasis, however, is not in reference to any particular religion, but to the shift in faith from technology to deity. Similar shifts in faith (from technology to deity) might be observed in followers of polytheistic, pantheistic, or animist religions; the effect would be the same.

shake the shackles of culture off the ignorant and the reticent. Surely, there must emerge a new, all-encompassing global *Weltanschauung*<sup>14</sup> sufficient to respond as a single, globally-effective force toward a sustainable present, and offer hope for a sustainable future. For in the hearts and minds of the proponents of sustainability, it would seem nothing less will suffice. Global effects demand global efforts; if globalization is the answer, then let it proceed with all due haste.

This conclusion, indeed, mirrors the attitude of those that might be considered “opponents” of sustainability efforts. To the extent that sustainability projects impede the forward motion of globalization, they contend, the effort backfires. True, enduring sustainability is clearly in the best interest of all; there is no possible way to make mass extinction, for example, politically or economically attractive. But the conditions that result in such unfortunate outcomes are only exacerbated by misplaced efforts to impose some fleeting level of local sustainability. If only globalization could be allowed to run its course, a true level of stable sustainability would be ensured by the invisible hand of economics, and the concerted efforts of a unified global culture.

### **In re Globalization**

Proponents of globalization offer a most positive take on the advantages of being able to produce anything, anywhere, and to market those same products anywhere, in almost no time at all (see discussions in Lechner & Boli 2003, Keeling 2004). The abundance of newly accessible human capital, in conjunction with newly available resources, is bound to produce vast new wealth on a global scale, they suggest, with new opportunities for the global community to prosper as never before. Trickle-down economics will assure that

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<sup>14</sup> Worldview; also, mindset.

the average standard of living in even the most remote parts of the world will rise, and continue to rise (Dollar and Kraay 2003). It's raining soup – grab a bucket!<sup>15</sup>

Some suggest, however, that the much-touted advantages to globalization are not panning out (see, e.g., the arguments in Lechner & Boli 2003, Keeling 2004). Non-renewable resources are being removed from the poorest regions at next-to-zero cost, forever removing any hope of those regions' capacity to develop them independently. Manufacturing firms, IT sector companies, bottling companies, etc. are now free to move their plants to wherever the labor is cheapest, forcing increasing numbers of laborers to work for ever-lower wages in the so-called "race to the bottom" (Brecher & Costello 1998). The very sovereignty of states is being challenged as multi-national corporations influence the economies of entire regions, and enjoy a commensurate level of political clout – often without the impedance of regulation. When the worth of such a corporation is greater than the entire GDP of a host nation, the end result may be that the corporation writes its own rules. Some would have it that globalization has, indeed, defeated state sovereignty, concluding that "in terms of real flows of economic activity, nation states have *already* lost their role as meaningful units of participation in the global economy of today's borderless world" (Ohmae 2003, 214). Further, critics of globalization (see Barber 2003) bewail the loss of cultural identity, as products and information, entertainment, clothing styles and cuisine assail the bastions of once-remote and exotic locales, hopelessly diluting and corrupting their unique cultural beauty. The anticipated advantages of globalization may be in the process of fruition; but such fruits are, at this point in the process, accessible to but a few (Keeling 2004). The majority of those impacted by globalization are being marginalized, forced into ever-greater depths of

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<sup>15</sup> As once suggested by Robert Heinlein, in reference to the abundance of solar energy in space.

poverty, bereft of the social stability of effective states, and shorn of the cultural values which give their lives meaning.

Globalization is certainly a mixed bag of blessings; all that can really be said of it is that it is real, and inexorable. The changes imparted in the process appear to leave target societies breathless with the rate at which they occur. There is frequently little time in which to examine consequences, offer objections, or respond in any coherent manner whatsoever. The scale at which such changes are being imparted, globally, is difficult for even the most attuned to grasp, or to track. Globalization is the final stage in the transformation of earth into the realm of humanity.

### **Approaching the Ethics of Sustainability and Globalization**

Given the structure of the ethics as defined, and the positions of the various “players” in the discourse, it should be a relatively straightforward endeavor to establish normative prescriptions for each. Throughout the long and fascinating history of philosophical inquiry, there have been proposals that might be invoked in this case to unnecessarily complicate our examination. Questions of utilitarianism (such as Bentham’s [1823]) are a prime example, as various attempts to quantify, or otherwise evaluate, the relative worth of this action or that outcome muddy the waters of reason. Further, entire systems of pre-muddied, artificially-induced values are often called upon to provide “answers” to these important questions; religions of fact and fancy, technology and devotionism each offer their own version of “truth,” applicable to any issue with satisfyingly ambiguous results. This is not to disparage the intrinsic value of these and similar pursuits; each has its place in history and within the cultural matrix. But, like any other tool, these lines of reasoning may have limited applicability in various circumstances. (Consider the specific

utility of a screwdriver when the task at hand is the replacement of a light bulb.) Finally, propositions that invoke “just so” solutions, such as divine command theories, any version of “manifest destiny,” or (especially) radical determinism are herein dismissed forthwith. Should there be any shred of validity to such notions, then this entire discussion is at least moot, and likely presumptuous in the extreme.

To review, it has been established herein that moral systems are the determinants of societies, and are based upon the value systems of the cultural matrices in which societies occur. Membership in society confers certain privileges, or rights, and demands the bearing of certain burdens; further, such burdens are subject to reallocation when they fall out of balance. Finally, it has been demonstrated that the ethical examination of environmental issues is of paramount importance to societies, and to ethics itself. This meta-system, it is hoped, is internally consistent and sufficiently complete. The emphasis of this section, it must be recalled, is one of an ethical examination, even while the focus is ultimately upon the sustainability of the concept and practicability of sustainability in the face of globalization.

### **Religion’s Contribution**

While religion might not be a particularly valuable tool with which to ethically examine environmental problems, it must be recognized as a cultural template. Religion is a reflection of a culture’s system of values; moral edicts often stem from religious tenets. Policy is frequently established on the basis of religious precepts, and environmental policy is no exception. Biblical admonitions<sup>16</sup> to “fill the earth, and subdue it,” and to “be fruitful, and multiply,” for example, have provided the outline of a

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<sup>16</sup> See Genesis 1: 28.

program of consumption and growth for five thousand years of monotheism.<sup>17</sup> For the purposes of our discussion, religion serves best not as a lens through which to examine environmental ethics, but rather, as a roadmap of the social and cultural byways through which our ethical examination must negotiate.

To the extent that religious outlooks may meliorate “new” moralities, by variously emphasizing and/or de-emphasizing this or that value-tenet, religion has the capacity to work in favor of a new paradigm. The potential for sustainability might be placed on a pedestal, such that its immediate import and significance was apparent to all. New impetus to assure the possibility of continuity, and the capacity to thrive, now, and far into the future, might conceivably be inspired in society. To those swayed by the aforementioned passages from Genesis, for example, it might be pointed out that God made the Earth, and all other living things, *before* He made man. Should this order of generation not confer some priority on nature as a whole? Monotheists across the world might be encouraged to interpret God’s admonition to fill the earth as a signal that there must be maintained the capacity to do so. Religion, in the right hands, might accomplish much in the way of achieving a mindset suitable for sustainability.

Conversely, religious emphasis may be placed on the necessity to homogenize disparate worldviews, under the guise of saving the souls of the world. By such reasoning, there is little need to save the earth, if the souls of the world are saved; the utility of the earth would, at that point, be minimal. A yet more extreme application is in the idea that those souls that have, to date, been saved are sufficient...and that the “end times” might, or even should be, *encouraged*. Compilers of the so-called Rapture Index (Rapture Ready 2005) and their followers appear to be anxious for just such an outcome,

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<sup>17</sup> Judaism, Christianity, and Islam are all derived from these common-source principles.

breathlessly awaiting the moment when the figure exceeds the value they have established to signal the advent of Armageddon. No system of morality, inspired by religion or anything else, could possibly be more unsustainable.

Cases have been made for the relative gentleness with which various religions address nature; there is, for instance, much to be said for Judaic admonitions against needless destruction (Gordis 1990). But such examples always point back to the utility of nature, making direct or less-direct reference to things natural as resources, emplaced for the sole benefit of humanity. Even the kindest, most gentle renderings of Christianity espouse a beneficent “stewardship” of nature by humans, as if nature required such services from one of its newest members. In contrast, various sects of Hinduism & Buddhism, notably Jainism and Shinto, respectively, have a certain reverence or respect for nature (Beverluis 2000); the same could be said for any number of animist systems of belief. Taoism recognizes a zero-sum unity in all things, and can thus be construed in a nature-friendly, “we’re all in this together” sort of way. If any of these values could be incorporated into mainstream Western thought, there might result an enduring awareness of the importance of perceiving nature, not as a pool of resources to be consumed, but as family.

### **A Nod to Science & Technology**

Science is a method by which to acquire new knowledge in a way that minimizes false conclusions, while still allowing for speculation. It is a specialized task, requiring discipline and, in most cases, years of training. Scientific opinions thus have the potential to carry considerable weight in society. In the social framework of the West, however, science is in the odd position of being relied upon to offer the definitive voice



upon which to base policy, while, at the same time, it is often scoffed at and berated when its conclusions are at odds with pre-existing values. This condition is exacerbated by the fact that science is entirely supported by society, as scientists can almost never subsist off of the fruits of their own labor. Science thus finds itself in an uneasy truce with society; yet society continues to support science, for one reason – technology.

Technology is the application of scientific findings in ways that make human endeavors more productive and/or more efficient. Such applications have a maximum of instrumental value, and entire industries continually strive to make the best, most innovative uses of the latest technological offerings. Unfortunately, most technologies do not come packaged with warning labels, and the primary users of technology are not scientists. It is, therefore, no surprise that technology is often unwittingly used, misused, or overused in ways that have unintended, and often devastating, consequences. In terms of environmental impacts, technological advances have enabled societies to graduate from moving molehills in a week to moving mountains overnight. It is unfortunate that there is nothing in or about technology that tells us whether we *should* move the mountains. It is yet more unfortunate when scientists are not heeded even when they attempt to warn of the adverse effects of technological applications; for such warnings almost always come after the fact. Once the technological cat is out of the bag, it is futile to attempt to get it back in. All that can be hoped for is a measure of restraint.

Finding ways to compel such restraint is, in the latter days of the age of globalization, especially challenging. For there doesn't appear to be any particular reason to slow the pace of market expansion and exploitation; remember, it's raining soup. If technologies in transportation and communication facilitate the boom, how can moderation be justified

in the face of an unrestrained, global free-market economy? To slow down is to be out-competed, and replaced by another with no compunctions about ignoring the purported benefits of restraint. Failure to cut all of the trees, or catch all of the fish, today, simply ensures that someone else will. It is the tragedy of the commons extended to global proportions. Unlike any previous period in history, however, the misuse of the commons cannot be mediated with knowing looks or snide mutterings. The global village doesn't accommodate such social niceties; culprits are free to take as much, as fast, as their technology (and sheer guile) enables them to. There is no council to hear grievances, no court to deliver justice, no stocks in which to do penance; there are only the brutal laws of economics to guide societies. There is no restraint, because there cannot be.

Science, however, cannot be blamed for this unfortunate state of affairs. When the attention of science is turned to such mundane matters at all, it is, at most, articulate as a bearer of bad news. If anything, society might put pressure on science to come up with a solution; a way, perhaps, to accommodate the use of technology in an environmentally-friendly way. Nor can technology be held accountable. Technology is, after all, an application; it is a tool. The tool cannot be held responsible for its wielder's indiscretions. Society must look to itself for accountability. If society cannot, or will not, address the misuse of technology, then it must be prepared to lie in its own bed, and perhaps, to die there.

### **So, What's the Problem?**

In a word, population. But population has drastically different connotations for each of our positions. Population is an essential component of the globalization equation, for instance, even to the demographic composition of the population. Markets can only

thrive if they are growing, and the market in question is global in scope. Thus, the world population must either grow, or there must be greater planet-wide, per-capita consumption. In the question of sustainability, population is actually a rather moot point, as long as the population, at whatever level or rate of growth, can be sustained long into the future without reducing the quality and texture of the global environment. Even from some hypothetical position of Nature, if the human population significantly overshoots the limits set by its capacity to maintain itself in a stable environment, the population will decline, probably rather abruptly. Should the population fall to levels below that minimum required to maintain a stable breeding population, the species is likely to join the bloated ranks of the extinct. The dictates of Malthus thus satisfied, Nature (as hypothecated) won't shed a tear in any case.

The disparity with respect to the various attitudes toward population, as outlined above, is worth summarizing. Of the three perspectives, only one, globalization, has an active interest in population, and that interest is toward population growth. The other two have no particular position with respect to population per se, but do have an interest in a stable global environment. Globalization has no such interest, except insofar as such stability might, from time to time, result in an economic advantage. In theory, this disparity of interests might actually present no conflict at all, as long as globalization had no impact on environmental stability, and neither nature nor sustainability had any impact on population growth. In point of fact, all of these interactions can and do take place. The impacts of globalization on environmental stability, in particular, present us with an irreconcilable problem. The situation is worsened by globalization's insistence that the

population either grow, or consumption be increased, as, from a sustainability point of view, these are identical propositions. Something has to give.

### **In Conclusion**

Ethics is a rather aloof way to approach issues that are often of a volatile nature. Indeed, the more intense the debate as to what should be done in a given situation, the more readily applicable ethical examination becomes. In all of history, few issues compare to the question of sustainability in the 21<sup>st</sup> century, as the stakes are so high as to be total. Only the Cold War threat of nuclear annihilation, but a few decades ago, can really compare; at that, it is questionable whether that threat wasn't itself part of the issue of sustainability. Ethics has never had a higher calling than today.

Globalization is the ultimate economic phenomenon. Its working base includes every people, every patch of earth, every erg of energy, and every increment of currency on the planet. No song is immune to its effects; no slightest scrap of food escapes its consideration. No hour of labor is outside its purview. It is the largest, most extreme expression of capitalism possible. It is a process whose goal is to extract the maximum in profit from market disparities in every corner of the earth. Globalization's appetite cannot be sated until global economic equilibration is achieved, down to the last iota of value. What this means, however, is that each and every item of worth is subject to globalization's market mentality. No slightest bit of culture is exempt. Cuisines are subject to sales, and if they can be made more marketable by changing them, they will be changed. The same can be said for clothing styles, or even languages. Religions, too, are subject to market manipulation. Globalization is not an organization; it cannot be

addressed in any meeting or forum.<sup>18</sup> It is a socioeconomic phenomenon, and every society on the planet is a potential participant, regardless of its willingness. Indeed, it is when the forces of globalization encounter political or cultural resistance that they become the most visible. When the resistance dies down, as it inevitably must, globalization resumes its all-but-transparent course. Because globalization is not an entity, it has no choice in its course; it has no choices at all. For globalization is not an action, it is an effect. By our definitions, morality – the rules by which societies conduct themselves – has no application to globalization. It would be like trying to apply morality to the weather.

This effect, globalization, occurs within and between societies, specifically their economies. The impact, however, is felt at all levels, economically, socially, culturally, and environmentally; globalization knows no boundaries in this regard. Economic pressures are part of how people establish priorities in their decision making; market values affect the freedom of choice people have. Such pressures also have the effect of opening doors which might previously have been barred. A mountain may be sacred and inviolate until a rare mineral deposit is discovered; at that point, the decision as to whether to extract the mineral is a matter of price negotiation. It would seem that societies' freedom of choice is so sharply reduced in the face of globalization that considerations of morality are all but moot. If there is no choice, there cannot be morality.

Yet, as has been discussed above, a system of morality is the determinant of a society. If a circumstance arises wherein choice is not available, wherein there is only one

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<sup>18</sup> The Bretton-Woods institutions and the WTO are certainly participant in globalization. But only the wildest conspiracy theory would credit these organizations with anything so ponderous as charting the course of globalization.

possible course of action, then the system of morality ceases to function in that circumstance. To that extent, in that circumstance, the determinant of society ceases to function. Thus, society is a situation-dependent phenomenon, and can become indeterminate – cease to exist – in certain circumstances. And globalization places societies in precisely these circumstances. More explicitly stated, following the definitions and relationships discussed herein, it may be concluded that *societies cease to exist in the context of globalization.*

In the absence of society's structures, what remains is culture, i.e., the values that a people considers important. In the context of globalization, a 'people' is left without a coherent society, awash in the sea of its own values. Yet, as has been discussed, globalization targets precisely these values as objects of market manipulation. The end result is that the values that determine a culture are warped into marketable shape, packaged, and sold – anywhere, in next to no time at all. Unbeknownst to the erstwhile members of society, there is no residuum of privilege adherent in their bereft position. They have no benefits of membership, as, in that condition, there is no society from which to derive rights. By extension, there can be no duties, no burdens to respect circumstantially nonexistent rights. Further, there is no possibility of reallocating non-burdens; thus, there can be no justice in the face of globalization.

The ethical examination of globalization is thus reduced to a sharp, clear, single point. The necessary conclusion for ethics, in the examination of systems of morality with respect to globalization, is that there is nothing to examine. There is no system of globalization morality; nor is there the potential for any.

A final look at the question, the ethical question, of the viability of sustainability in the face of globalization, is in order. Options in the examination are now severely constrained; the only option remaining is the question of whether there is anything left to discuss at all. And recall, there can be no topic, in the entire purview of ethics, as important as the discussion of environmental ethics. At such moments as society has the opportunity for ethical considerations along these lines, in other words, when it isn't ensconced in its globalization pursuits, it may behoove it to at least recognize what is happening to its environmental integrity, even as it acknowledges that there is absolutely nothing it can do about it. This act, which may well prove to be among its last, is, indeed, optional. There would appear to be no duty to make such an examination, as society appears not to have any rights to understand its own demise.

And the trees continue to fall.

## Chapter Six

### Summary, Conclusions, and Implications

#### Summary of the Study

There has been a growing recognition over the past few decades that the levels of resource consumption required to maintain current standards of living may not be as available to future generations as to the current generation. The levels of waste production associated with even current levels of consumption further threaten such future availability. Resource shortages, population growth, improved standards of living in many areas, and environmental problems at scales ranging to the global have all rendered the problem the more challenging. While there have been a variety of responses to this condition, the question of *sustainability* remains a focus of concern.

Globalization has had a steadily increasing effect on the global marketplace. For many, this effect has proven to be tremendously beneficial; such cases seem to support the notion that ‘a rising tide lifts all boats.’<sup>19</sup> Unfortunately, the ‘rising tide’ of globalization appears not to be lifting all equally; in fact, some are left more destitute than they have ever been. This disparity in wealth distribution has, in many cases, resulted in increasingly severe marginalization of the world’s poorest. Further, globalization has the effect of reducing social and political boundaries (in some cases more ‘persuasively’ than others), for the purpose of opening markets as widely as possible. Once the markets are opened, exploitation of cheap labor and resources assures maximum competitiveness. The necessarily cheap, quick, efficient extraction of raw materials has, however, had tragically devastating environmental effects in some cases;

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<sup>19</sup> Positive effects affect all positively. A maxim of supply-side economics attributed to John F. Kennedy.



locating production plants to sites where labor is cheapest has frequently resulted in a resurgence of sweatshop labor.

Finally, technologies in communication and transportation have assured rapid marketing and distribution of all manner of goods and services in a very short time frame. Neither state systems nor cultural systems are well equipped to adjust to such rapid, fundamental changes. Globalization appears to have shaken the stability of environments, societies, and economies across the world.

The purpose of this study has been to determine whether globalization so destabilizes environments, societies, and economies sufficiently as to impair sustainability. On its face, the determination of such destabilization indicates a direct impact on sustainability, as it is defined in terms of these very stabilities. The task has involved the isolation of sufficient indicators of globalization (the dependent variables), and of the stabilities that characterize and define sustainability (the independent variables), for the purpose of determining whether a correlative relationship exists between them.

### **Conclusions**

The use of multidimensional scaling software proved to be beneficial in reducing the number of globalization ‘indicators,’ some of which displayed little internal consistency with the set as a whole. The software further enabled the analysis in its capacity to manipulate ordinal data – vital to the study, as indicators for both sustainability (in the form of indices of environmental degradation) and globalization were available only in ranked order (by country). The results of the analysis demonstrated a profound relationship between one of globalization’s two facilitators (communication) and one of

the three ‘pillars’ of sustainability (environmental degradation), such that variability in the former accounted for over 97% of variability in the latter.

Statistical analysis of globalization’s impact upon socioeconomic stabilities was not available due the lack of adequate standardization of indicators in the literature.<sup>20</sup> Instead, a direct examination of the literature produced an understanding of the effects globalization can have on state sovereignty and cultural identity, such that the integrity of both are threatened. Further reading disclosed the extent to which states, and especially culture groups, are often willing to respond in their own defense. The examination resulted in new working definitions for the terms *nationalism* and *terrorism*. Further, pursuant to these definitions, the study identifies threats to cultural identity, such as those posed by globalization, as the sole cause of modern terrorism.

A case study conducted in Chile served to validate its medial placement among countries ranked according to indicators of both environmental degradation and globalization. Many of the environmental, social, and economic effects associated with globalization were observed. A pilot study was conducted related to the de-evolution of state-level organization through the use of observed degradation in monumental public architecture as proxy. While it was relatively simple to observe vulnerabilities, it proved to be much more difficult to detect instabilities, and virtually impossible to isolate meaningful stabilities. While it was clear from the study that globalization was having an impact on sustainability, it did not follow that globalization was preventing sustainability. It became clear from the Chilean case study that the research question could have profited

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<sup>20</sup> In every case, autocorrelation due to joint reliance upon the UN’s Human Development Indicators (HDI) precluded their use.

by a better working definition of sustainability, perhaps one based upon relative vulnerabilities, as opposed to stabilities.

### **Implications**

Examination of either sustainability or globalization piecemeal, e.g., by country, may not be the optimal, or even a valid approach to examining the interaction of these phenomena. Both phenomena appear to be continuous across the global socioeconomic landscape; further, the effects of an agent in a given place are by no means assured of manifesting in that same place. The very nature of globalization tends to minimize distance as an operant factor in any case. It should come as no surprise that causal agents (of globalization) and effects (on sustainability) are, in many instances, far removed from one another. By virtue of the market relationships between states that export raw materials, those that finish production, and those that consume the products, environmental degradation is not uniformly spread. Rather, each contributes its own measure of degradation to a global whole. Contributions to societal and economic destabilization may, perhaps, be found to have to corollary relationships.

Sustainability has been defined in terms of three different stabilities. The isolation and measurement of these stabilities have, however, proven to be inordinately difficult to achieve. Indicators of stability mean very little when the level of stability being indicated is arbitrary. Investigations into degrees of degradation or instability have proven to be more fruitful, yet indicator values that satisfy statistical requirements and are available across the field are few. Vulnerabilities, by contrast, are much easier to observe and measure, in that data are much more readily available, and indicators are easily

standardized. Further, it would appear that quantification is optional, as qualitative assessment is available and valid in its own right.

It is particularly noteworthy that globalization is not the visible sort of operator that market pressure is. It would appear that there is nothing specific about globalization that actually renders any particular situation untenable. Globalization simply *minimizes the values* that may stand in the way of open market transactions between any two parties on Earth. No aspect of globalization renders stable states unstable; it renders such stabilities ultrathin, brittle, and completely vulnerable. Globalization apparently does not disable sustainability; instead, it appears to reduce the probability of success in the endeavor by maximizing vulnerability.

### **Suggested Further Research**

A redefinition of sustainability in terms of relative vulnerabilities might enable more specific studies, and thus, more practical applications in sustainability pursuits. Vulnerabilities should not only be identified, but standardized sources or proxies established in order to build a useful database. Every effort should be made to ensure these sources yield ratiometric data, so as to avoid the limitations imposed in the statistical analysis of lower order data.

Continued research should be done to refine the indices of globalization. The indices of communication, one of globalization's two facilitators, appear to be a particularly likely source of such indicators. It may follow that indices of transportation will produce equally robust results. Once again, higher order data should be obtained, if possible.

In the event further research confirms the strong relationship between sustainability and globalization, it may be possible to build predictive models based upon time frames

and global trends. If it is determined, for instance, that current levels of consumption and waste production cannot be maintained into the future, it might be very practical to know what the limits to such consumption are, both in terms of time and quantity.

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