

The Role of Social and Intergenerational Equity in Making Changes in Human Well-Being Sustainable

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Abstract A sustainable world is one in which human needs are met equitably and without sacrificing the ability of future generations to meet their needs. Human well-being is described by four primary elements—basic human needs, economic needs, environmental needs, and subjective well-being. These elements can interact in a myriad of ways to influence overall well-being. What makes changes in human well-being sustainable for a population or a nation? Two major interactional concepts can push changes in human well-being toward a sustainable state in space and time—social equity and intergenerational equity. The concept of social equity distributes well-being over space, ensuring the fair treatment of all members of society promoting spatial sustainability of a well-being decision. The concept of intergenerational equity distributes well-being through time, ensuring the well-being of present and future generations of a population or nation, promoting temporal sustainability of a well-being decision. The roles of social and intergenerational equity in terms of their influence on human well-being are examined with a focus on more sustainable decision-making.

Keywords Well-being · Sustainability · Social equity · Environmental justice · Intergenerational equity

INTRODUCTION

A sustainable world is one in which human needs are met equitably and without sacrificing the ability of future generations to meet their needs. Human well-being is comprised of four major elements (Fig. 1)—basic human needs, economic needs, environmental needs, and subjective well-being (Smith et al. 2012, 2013; Summers et al. 2012) The interactions of these elements may or may not

result in a level of human well-being that is sustainable. The sustainability of human well-being relates to the potential for changes in well-being through time (future) and across space (among elements of a population defined as a geographic or demographic unit, e.g., community, nation, population group). The concepts of social equity and intergenerational equity directly impact the sustainability of decisions impacting human well-being as they alter the distribution of well-being across space and time.

The terms equity and equality are often used interchangeably, which can lead to confusion because while the concepts are related, there are important distinctions between them. Equity involves trying to understand and give people what they need to enjoy full, healthy lives. Equality, in contrast, aims to ensure that everyone gets the same things in order to enjoy full, healthy lives. Equity is an ethical term that represents fairness, whereas equality is a measure of sameness. When we say equity, we refer to the qualities of justness, fairness, impartiality, and evenhandedness. When we talk about equality, we are talking about equal sharing and exact division (Bronfenbrenner 1973). Our discussions in this manuscript relate to equity, not equality. The research question addressed in this review is what makes a change in well-being sustainable and the objective of the review is to demonstrate that equity spatially (social equity) and temporally (intergenerational equity) are the qualities that likely lead to a sustainable change in well-being.

Social equity is the orphaned element of sustainable development. The President's Council on Sustainable Development (1996) defined social equity as “equal opportunity, in a safe and healthy environment.” Social equity is the least defined and least understood element of the triad that is sustainable development yet is integral in creating sustainability—balancing economic, environmental, and

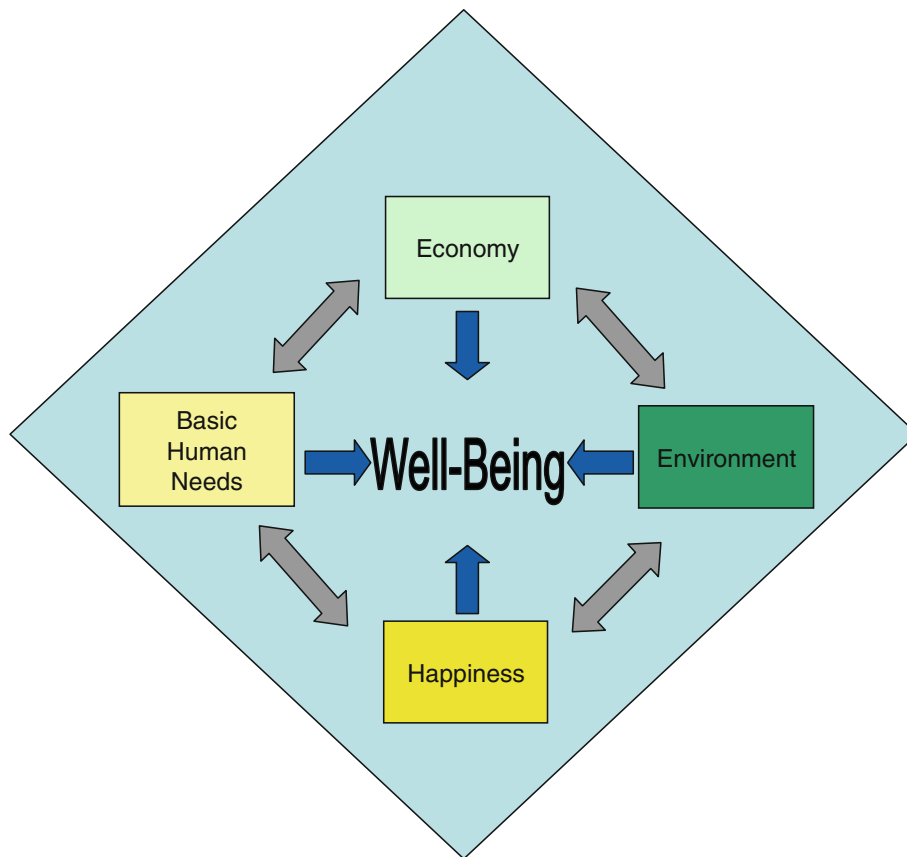


Fig. 1 Conceptual model for human well-being

social equity. Social equity implies fair access to livelihood, education, and resources; full participation in the political and cultural life of the community; and self-determination in meeting fundamental needs. Frederickson (1990) provided “a theory of social equity and put it forward as the ‘third pillar’ of public administration.” Frederickson was concerned that those in public administration were making the mistake of assuming that citizen A is the same as citizen B; ignoring social and economic conditions. His goal for social equity was to take on the same status as economy and efficiency as values or principles to which public administration should adhere.

Intergenerational equity is a value concept which focuses on the rights of future generations. It is a notion that is implicit in ecological sustainability. However, since skills to facilitate thinking about long-term consequences are not typically included in educational curricula, this value is presented as distinct from ecological sustainability to emphasize the need for thinking about how human actions that directly or indirectly degrade the environment in the present will affect future generations of humans and other life forms. Intergenerational equity is a notion that views the human community as a partnership among all generations. Each generation has the right to inherit the same

diversity in natural and cultural resources enjoyed by previous generations and to equitable access to the use and benefits of these resources. At the same time, the present generation is a custodian of the planet for future generations, obliged to conserve this legacy so that future generations may also enjoy these same rights. In this way, intergenerational equity extends the scope of social justice into the future.

Intergenerational equity in economic, psychological, and sociological contexts is a concept or idea of fairness or justice in relationships between children, youth, adults and seniors, particularly in terms of treatment and interactions (Miller et al. 2010). It has been studied in environmental and sociological settings (Foot and Venne 2005). In the context of institutional investment management, intergenerational equity is the principle that an endowed institution’s spending rate must not exceed its after-inflation rate of compound return, so that investment gains are spent equally on current and future constituents of the endowed assets. This concept was forwarded by James Tobin in 1974 when he wrote that “The trustees of endowed institutions are the guardians of the future against the claims of the present. Their task in managing the endowment is to preserve equity among generations” (Tobin 1974). It is not

a far stretch to redefine the concept in environmental terms related to resource usage, environmental exposure, and access to environmental services (Grosseries 2001, 2008). Discussions regarding intergenerational equity occur across several fields of study; including, transition economics, social policy, government budget-planning, environment, sustainable development, health care, and law (Williams 1997; Thompson 2003; Carter 2005; Kuboniwa and Nishimura 2005).

Social and intergenerational equity, in essence, become the two elements that must be incorporated in evaluations of changes in well-being to make the changes sustainable. The remainder of this manuscript will address these equity issues for the primary elements of well-being and provide examples of introduction of equity into discussions and decisions concerning well-being.

HUMAN WELL-BEING

The Millennium Ecosystem Assessment (MEA 2005) provides a useful framework for exploring the linkages of well-being to social, economic and environmental issues. From a well-being perspective, the MEA's value is its recognition of how well-being cannot be considered in isolation from the natural environment. However, the MEA does not address the roles of social equity, social justice, and intergenerational equity in making well-being sustainable. Similarly, this topic is insufficiently acknowledged in the wider philosophical, social, ecological and economic well-being literature. We will address our present understanding of all four elements of human well-being—basic needs, economic needs, environmental needs, and subjective happiness (Table 1)—and the potential influences of ecosystem services upon them through reference to Summers et al. (2012) and discuss the impacts of social and intergenerational equity on these relationships.

There are no single agreed definitions for social equity and intergenerational equity as related to human well-being: they are broad and contested terms, interpreted in many different ways with significant overlap. At a generalized level, it is useful to distinguish between objective and subjective dimensions of equity issues. Social equity encompasses social justice and environmental justice. In this manuscript, we will focus on both aspects of equity; particularly environmental justice related to climate change and toxic pollutants issues. Our discussion of intergenerational equity will focus upon future equity issues from social, demographic and environmental perspectives; for example, cultural well-being and tribal environmental knowledge (TEK) issues for Native American populations.

Table 1 The primary drivers of the four elements of human well-being

Basic human needs	Environmental well-being
Food	Availability of clean air
Clothing	Low health risks due to toxics
Mental health	Distance from critical ecological thresholds
Participation	Availability of clean water
Love	Species diversity (biophilia)
Physical health	Subjective well-being
Shelter	Life satisfaction
Employment	Choice
Natural space	Solastalgia
Parental care	Community vitality
Sexuality	Access to nature
Water	Affection/respect toward nature
Education	Cultural requirements
Eldercare	Happiness
Security	Freedom
Partnership	Sense of place (topophilia)
Building materials	Identity
Psychological development	Social cohesion
Access to information	Access to diverse nature
Child development	Value/importance of leisure time
Personal development	Esthetics
Economic well-being	
Wealth and/or productivity (GNP, GDP)	
Public and household infrastructure	
Economic diversity	
Growth and sustainability	
Cost of education/profit of education	
Non-paid work (e.g., housework, parenting, volunteerism, elder care)	
Level of income	
Personal wealth	
Trade	
Non-monetary value	

The listings under each of the four elements are not meant to be a complete list of all possible examples of the elements but rather a representative list

SUSTAINABILITY

Sustainability has become a goal of both public and private organizations worldwide. Although no simple, universally accepted definition of sustainability exists, the general intent is “to create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and environmental requirements of present and future generations” (Stahl and Bridges 2013). This operational definition includes numerous value-laden terms including productivity,

harmony, satisfying social, economic and environmental requirements and the concept of intergenerational equity.

The current challenge is to develop the means to support practical implementation of sustainability policies across multiple scales pertinent to organizational missions and operations (NRC 2011). The foundation of this challenge is the need to embrace a unifying approach that connects scientific information and societal values. Grint (2010) observed that critical issues require commanders and tame issues require managers but that wicked problems require leaders. Sustainability, viewed in light of the Jevons Paradox (Alcott 2005, Polimeni et al. 2008) and through the lens of postnormal science (Funtowicz and Ravetz 1994, 2003), is one of the most “wicked” problems we can contemplate. Wicked problems require engaged dialog guided by asking different and difficult questions. The wicked aspect of sustainability, as the paradox of Jevons reveals, is that sustainability and efficiency indicators change every time the sustainability narrative changes. As Meadows (1998) pointed out, there is a general set of concepts from which one can construct context-dependent, hierarchical indicators. However, the Jevons paradox itself reveals that when one solves any single set of stock-flow problems within a hierarchical system, the system context is then changed. Changing system constraints leads to another unique set of system stock-flow problems resulting in a newly reorganized system that did not exist when one originally made the sustainability gains.

Development and sustainability are old problems but now they have come together on a global scale and in a somewhat urgent time frame. Sustainability indicators must be more than environmental indicators; they must be about time and/or thresholds (e.g., intergenerational equity). Development indicators should be more than growth indicators; they should be about efficiency, sufficiency, equity, and quality of life (e.g., social equity). Each successive doubling of the human system causes new stresses and raises new questions, or rather brings two old questions together with a new urgency. Question one is a development question: How can we provide sufficiency, security, good well-being to all people? The second question is a sustainability question: How can we live within the rules of the biophysical environment? These questions merge to become: How can we and our children live good lives without eroding the health and productivity of the physical planet—and therefore the possibility for future generations to lead good lives? (Meadows 1998). Herein, lies the sustainability connection between well-being (leading a good life) and social equity (all people leading some form of the good life) and intergenerational equity (future generations leading a good life).

SOCIAL FAIRNESS AS RELATED TO SOCIAL EQUITY AND WELL-BEING

The social welfare of all of a community’s inhabitants’ well-being encompasses the concept of social fairness. Issues of poverty, education, and governmental investment in the well-being of a community’s inhabitants and all the potential spinoffs resulting from these issues constitute the sphere of social fairness. Often these issues become associated with demographics; particularly race, gender and age (Miller et al. 2010), as well as the economically disadvantaged (Bonilla Garcia and Gruat 2003; Hay 2006). Social fairness or equity can be related to any of the three primary pillars of well-being—environmental, economic, or social. Below, we address the social equity aspects of each of these pillars and their relationships to sustainable community well-being.

THE ROLE OF ENVIRONMENTAL EQUITY/ JUSTICE IN THE SOCIAL EQUITY ASPECTS OF HUMAN WELL-BEING

Environmental justice is the policy rubric within which issues such as environmental equity, environmental discrimination, and environmental racism are embedded (Gelobter 1993; Torres 1993). From the standpoint of politics, this rubric acknowledges that environmental decision-making involves the role of power and conflict; that decisions about the environment are not simply a trade-off with the economy in terms of efficiency and jobs, but rather are fundamental issues for social welfare and equity (Taylor 2000). This discussion also acknowledges that society has reason for concern as long as economic activity utilizes common pool resources—often un-priced or under-priced—and generates negative externalities (pollution and waste) (Boerner and Lambert 1994).

Environmental equity is premised on the notion of fairness in the distribution of environmental hazards, particularly those of technological origin (Tarlock 1993) and access to environmental green space for urban children and its relationship to child development (Kahn and Kellert 2002; Moore et al. 2004; Louv 2005) and its relationship to ADD treatment (Faber Taylor et al. 1998, 2001a, b; Kuo and Faber Taylor 2004), and security and crime issues (Kuo 2001).

Agyeman (2000, 2001, 2002) and Agyeman et al. (2002, 2003) have described the development of the concepts of environmental justice and sustainability. Expanding from the above statement, environmental justice is based on the principles that people have a right to be protected from environmental pollution and to live in and enjoy a clean

and healthful environment. Sustainability has many definitions but inherent in the concept of “sustainable well-being” requires for equity and justice in order to target a sustainable future.

Much of the debate surrounding the policy issue of environmental equity remains highly emotive (NEJAC 2004) and is epitomized by the statement in the executive summary of this report, “I’m sick and tired of being sick and tired.” The inherent controversy in the literature associated with environmental justice focuses not on its likely existence but rather pivots on two factors: (1) the extent of the spatial coincidence between locations of environmental disamenities and minority residence; and (2) the often casual interpretation of these causal relationships. The landmark study on race and environmental quality was issued by the United Church of Christ’s (UCC) Commission for Racial Justice (1987). This study, covering 27 commercial hazardous waste facilities nationwide and approximately 10 000 uncontrolled hazardous waste sites concluded that more than half of all blacks and Hispanics in the United States lived in communities having at least one closed or abandoned hazardous waste dump site. A follow-up study conducted 20 years later (Bullard et al. 2007) depicted environmental injustice for people-of-color communities to be as much or more prevalent today than in the 1980s.

Bullard (1993) points out that “many of the at-risk communities are victims of land-use decision-making (sic) that mirrors the power arrangements of the dominant society.” A study by the Environmental Protection Agency concluded that socio-economic conditions and race are the major factors determining environmental discrimination. Communities inhabited by poor whites are also vulnerable to toxic threats. In its two-volume report, *Environmental Equity* (US EPA 1992), the EPA alluded to the difficulties of assessing the impact of environmental hazards on low-income and minority communities. While admitting that those communities suffer a disproportionate share of the burden, there appears to be a general lack of data on the health effects of pollutants in those communities. Critics maintain that the information is available but the EPA considers it a public relations issue, not a civil rights issue, and, therefore, does not take the claims seriously enough to gather the necessary data by income and race (Mohai and Bryant 1992; Satchell 1992; US EPA 1992). Regardless, EPA has taken the issue seriously enough to develop its Plan EJ 2014 (US EPA 2012) which is a roadmap that declares the existence of environmental injustice and is designed to help EPA integrate environmental justice into the Agency’s programs, policies and activities and that requires annual reporting documenting the progress toward meeting the commitments outlined in the Agency-level goals and objectives (US EPA 2012). Through Plan EJ

2014, EPA intends to develop a suite of tools to advance the integration of environmental justice and civil rights into its programs, policies and activities.

Natural environmental disasters (e.g., hurricanes, floods) or environmental changes (e.g., climate change) can also be points of concern for environmental justice (Rydin 2005; Elliott and Pais 2006; Welbourne 2006; Allen 2007; Frumkin et al. 2008; Maantay and Maroko 2009; Eriksen and Brown 2011). With respect to climate change, the poorest nations in the international system are the most geographically and economically vulnerable yet have the least impact on mechanisms to halt the progress of this impending change (Gordon 2007). The international dialog on climate change is currently focused on a strategy of adaptation that includes the projected removal of entire indigenous communities, if necessary (Tsosie 2007). Just as these impoverished small Third World nations are among the most vulnerable to the effects of global warming while simultaneously being in the weakest position to halt its progress, indigenous peoples in the United States (particularly tribes of Alaska) are in a similar situation. Not surprisingly, many of the geographic regions that are most vulnerable to the effects of climate change are also traditional lands of indigenous communities. The term “sustainable adaptation” has emerged with the realization that while adaptation to climate change will be increasingly required over the next decades, we know little about the wider or longer term impacts and implications of adaptation itself (Eriksen and Brown 2011); particularly, the effects of adaptation on indigenous communities in the United States and on developing countries (Below et al. 2010; Mearns and Norton 2010). Tsosie (2007) suggests that adaptation strategies might be genocidal for many groups of indigenous people and argues for the right to environmental self-determination which would allow indigenous people to maintain their cultural and political status upon their traditional lands. Indigenous peoples often are excluded or treated as secondary in the climate change debate. However, they often are considered simultaneously the most vulnerable and the most resourceful in adapting to climate change (Kronik et al. 2010).

Similarly to the increased vulnerability of indigenous communities, populations with a low socio-economic status and racial minorities are often more vulnerable to natural disasters (e.g., flooding) and often suffer from decreased access to parks and physical activity sites in urban areas (Maantay and Maroko 2009; Maroko et al. 2009). A case study estimating population potentially impacted by flood hazard in New York City showed that undercounting of impacted populations could have serious implications for emergency management and disaster planning (Maantay and Maroko 2009). Ethnic/racial populations are disproportionately undercounted using traditional methods, impairing

preparedness and relief efforts as demonstrated in flooding events, responses to Hurricane Katrina and responses to severe storm events in the northeast. Flooding has been, and continues to be, a concern not only in major metropolitan areas, but across the country. Floods result in 140 deaths and \$6 billion in property damage on average annually (USGS 2006). In 2005, flooding associated with Hurricane Katrina caused more than 200 billion dollars in damages and nearly 2000 deaths, the costliest natural disaster in the country's history (USGS 2006). The U.S. has very little experience with evacuating cities from natural hazards. New York City, one of the nation's most densely populated metropolitan regions, is susceptible to flood hazards and would be particularly difficult to evacuate (Bloomfield et al. 1999) with approximately 15 % of its area within the 100-year flood plain. Given the high density of NYC's built environment, encompassing both residential and commercial development, there is an enormous potential for damage to life and property from flooding. Hurricane experts state that even a category 3 hurricane in NYC could have devastating consequences (Coch 1994). This was, in fact, realized in 2012, when Hurricane Sandy combined with two additional storms to create a "perfect storm surge" on New York City. The wind direction, combined with the high tide and full moon, along with the hybrid of three storms colliding swamped NYC, crippling its mass transit infrastructure for weeks. This does not even include the 125 deaths in New York and New Jersey and the roughly \$62 billion dollars in damages. The final element of this scenario is that communities of color, people with low socio-economic status, or populations disadvantaged or marginalized due to language differences, cultural discrimination, or geographic or social isolation bore a disproportionate share of the environmental burden. This is no way marginalizes the middle-class losses of over 72 000 homes in coastal New Jersey but simply exacerbates the losses to low- and middle-class socio-economic groups.

In addition, the natural disaster impacts on urban residents, proximity to parks and physical activity sites has been linked to an increase in active behaviors, and positive impacts on health outcomes such as lower rates of cardiovascular disease, diabetes, and obesity. Since populations with low socio-economic status and racial minorities tend to experience worse health outcomes in the United States, access to parks and physical activities sites may be an environmental justice issue. Maroko et al. (2009) demonstrated a spatially inconsistent relationship between physical activity site density and socio-demographics but suggested a positive relationship between park accessibility (opportunities for active behavior) and beneficial health outcomes, using a more stable global model including network analysis of proximity, perception of accessibility and usability and park quality characteristics.

All of these environmental issues—siting of waste facilities, natural disasters, and accessibility to green space—impact human well-being and this impact appears to be disproportionately borne by low-income socio-economics communities and communities of color. To optimize community well-being, rather than individual well-being, a redistribution of these environmental vulnerabilities would need to be apportioned through the community and not focused on specific vulnerable populations. For well-being to be sustainable, both in the present and through time, societal equity issues associated with environmental justice must be realistically distributed among all members of society rather than "targeted" or simply "co-occurring" with select vulnerable populations associated with race, age, language or socio-economic status. Environmental justice issues not only apply to the examples described above but include issues associated with suburban sprawl that span economic and social consequences as well.

THE ROLE OF ECONOMIC EQUITY AND SOCIAL JUSTICE IN THE SOCIAL EQUITY ASPECTS OF HUMAN WELL-BEING

Economic equity or justice is the concept or idea of fairness in economics, particularly in regard to taxation or welfare economics. More specifically it refers to equal life chances regardless of identity, to provide all citizens with a basic and equal minimum income/goods/services or to increase funds and commitment for redistribution (World Bank 2005). The state often plays a central role in the necessary redistribution required for equity between all citizens, but applying this in practice is highly complex and involves contentious choices. However, considerable consensus can often be found on three particular issues:

- (1) equal life chances: life outcomes should be determined by individual choices and not conditions beyond an individual's control,
- (2) equal concern for people's needs: those goods and services understood as necessities should be distributed to those otherwise unable to access them, and
- (3) meritocracy: positions in society and rewards should reflect differences in effort and ability, based on fair competition.

In addition to affecting well-being directly, such inequalities related to health, education, income, voice, and access to services shape the opportunities people face for future progress and achievement. Not only are there inequalities in the distribution of income, health status, and educational attainment, but even more importantly, these

indicators tend to be correlated. The rich tend to be both healthier and better educated than others. The poorest of the poor tend to have the lowest attainment in years of schooling and some of the worst health indicators. These correlations generally also extend to public services, with the poor gaining access to infrastructure, electricity, water, sanitation, and garbage disposal much later than others, if at all.

Because education and wealth help a person gain influence in society, voice and political power are also generally thought to be correlated with economic well-being. The interaction between these mutually reinforcing economic, social and political inequalities perpetuates them across generations. Do such disparities matter? Are people concerned with the large observed differences in access to education and health, and in economic opportunities, or merely with the fact that some people have low absolute levels of income, years of schooling, and access to services? Should policymakers worry about the unequal opportunities that arise from discrimination, unequal access to justice or other unfair practices?

Opinions on these questions are wide-ranging. Economic equity, as discussed here, is understood as the pursuit of equal opportunities and the avoidance of severe deprivation. Equity is not the same as equality in incomes, or health status, or in any other specific outcome. It is the quest for a situation in which personal effort, preferences, and initiative—rather than family background, caste, race or gender—account for the differences among people's economic achievements. On balance, the evidence, assembled from disciplines ranging from economics and history to sociology and anthropology, suggests that the pursuit of sustainable, long-term well-being is inseparable from a broadening of economic opportunities and political voice to most or all of society.

People from many cultures seem to share a concern for equity that is reflected in religious and philosophical traditions, as well as legal institutions. Religions from Islam to Buddhism and secular philosophical traditions from Plato to Sen have shown a concern for equity and an aversion to absolute deprivation. In 1999, at its second meeting, the World Faiths Development Dialogue stated that “all religions would see the extreme material poverty in the world today as a moral indictment to contemporary humanity and a breach of trust within the human family.” Equity is also a key theme in secular philosophical traditions. Western thinking about social justice was greatly influenced by utilitarianism—the idea, originally from Bentham (2000) that the social goal should be to achieve “the greatest happiness for the greatest number.” Modern theories of distributive justice have largely moved beyond utilitarianism, in part because of its fundamental lack of concern with the distribution of welfare. Since the early

1970s, a number of influential thinkers, including Rawls (1971), Sen (1985), Dworkin (1981a, b), and Roemer (1998), have made separate and important contributions to the way we think about equity. While their views are different in important aspects, they share much in common.

All four reject final welfare (or utility) as the appropriate space in which to judge the fairness of a given allocation or system. All acknowledge the importance of individual responsibility, prefer some combination of the set of liberties and resources to form social judgments, and all appeal to the “veil of ignorance” argument from Harsanyi (1955) that fair allocation of resources should be agreed upon before society's members knew what position in the hierarchy they would occupy. They argue that social justice implies equality in the allocation to all people of some fundamental concept, such as primary goods (e.g., basic human needs). What they disagree on is exactly what this concept should be and how it would be realized.

Different cultures and religions around the world may differ in important respects, but they all share a concern with equity and fairness. This suggests something quite fundamental about the value human beings place on equity and fairness. A fairly recent body of literature in economics, biology and anthropology sheds some light on these shared human preferences toward community cooperation, fairness, and equity. The economic literature over the past decade has amassed convincing evidence, through controlled laboratory experiments through interaction behavioral games using real money, which rejects the hypothesis in standard economic models that all individuals are exclusively concerned with their material self-interest. The main findings of this body of literature are: (1) some people behave in ways clearly inconsistent with the rational self-interest hypothesis favoring a willingness to engage in altruistic rewarding and altruistic punishment (Fehr and Fischbacher 2003); (2) people are heterogeneous and engage in altruistic giving or punishment in a way that is unambiguously costly to them without any hope of eliciting personal gain; and, (3) fair-minded people can behave selfishly and self-interested people can behave fairly dependent upon the rules of the game whereby in competitive games people tend toward actions consistent with self-interest while in public good or fairness games altruistic players sustain a cooperative equilibrium (Fehr and Gächter 2000). In short, these findings have been interpreted to suggest that a sizeable fraction of human beings in most societies care not only about their own individual opportunities and outcomes but also about “fairness.” The experimental and subjective well-being literature in economics and social psychology remind us that there is something deep and fundamental about our taste for “fairness” and equity. Such “human altruism,” argue Fehr and Fischbacher (2003) may be what accounts

for the much greater complexity of cooperative patterns in human societies compared with those of other animals (Brosnan and De Waal 2003). Social equity, it seems, matters intrinsically and fundamentally for human beings. For well-being to be sustainable, both in the present and through time, societal and economic equity issues must be realistically distributed among all members of society rather than “targeted” or simply “co-occurring” with select vulnerable populations associated with race, age, language or socio-economic status.

THE ROLE OF INTERGENERATIONAL EQUITY IN THE SUSTAINABILITY ASPECTS OF HUMAN WELL-BEING

If social equity represents the spatial dimension required to make community well-being sustainable in the present, intergenerational equity represents the dimension required to make community well-being truly sustainable through time. Intergenerational equity is a value concept which focuses on the rights of future generations. It is a notion that is implicit in ecological sustainability. However, since skills to facilitate thinking about long-term consequences are not typically included in decision-making, this value is presented here as distinct from sustainability to emphasize the need for thinking about how human actions that directly or indirectly degrade the environment, the economy or social drivers will affect future generations of humans or other life forms. Intergenerational equity is a notion that views the human community as a partnership among all generations. Each generation has the right to inherit the same diversity in natural, cultural, health, and economic resources enjoyed by previous generations and to equitable access to the use and benefits of these resources. At the same time, the present generation is a custodian of these resources for future generations, obliged to conserve this legacy so that future generations may also enjoy these same rights. In this way, intergenerational equity extends the scope of social justice through time.

A common way of conceptualizing our obligations to the next generation is the following: we borrow the earth from our children (part of an ancient Native American proverb). What follows from this folk conception is that each generation should retribute to the next the earth in a state at least equivalent to what it was when it received it. The same could be conceptualized for economies and social drivers (the next generation should inherit conditions at least as good as those realized by the former generation). This idea of having to pay a debt back is the basis of the concept of indirect or open reciprocity (Bourgeois 1902; Azar and Holmberg 1995) with Bourgeois using the ambiguous notion of “social debt” which implies a debt

toward past, present and future people, grounded in the accumulated works of past generations, and Azar and Holmberg (1995) applying the notion of debt to the environmental realm. Thus, intergenerational compliance with the reciprocity-based maxim implies that reciprocation benefits the next generation (Grosseries 2001).

From a Western perspective, the idea behind not reducing the ability of future generations to meet their needs is that, although future generations might gain from economic progress, those gains might be more than offset by environmental deterioration, economic decisions regarding taxation and debt, and decisions affecting social and cultural drivers. Most people would acknowledge a moral obligation to future generations, particularly as people who are not yet born can have no say in decisions taken today that may affect them. There are two different ways of looking at the need to ensure that future generations can supply their needs. One is to view the environment in terms of the natural resources or natural capital that is available for wealth creation and to say that future generations should have the same ability to create wealth as we have. Therefore, future generations will be adequately compensated for any loss of environmental amenity by having alternative sources of wealth creation. This is referred to as “weak sustainability.” The other way is to view the environment as offering more than just economic potential that cannot be replaced by human-made wealth and to argue that future generations should not inherit a degraded environment, no matter how many extra sources of wealth are available to them. This is referred to as “strong sustainability.”

The exchange of environmental assets for human-made assets also involves another equity issue; that is substitution of shared environmental amenity with private capital. Weak sustainability involves the replacement of natural resources and environmental assets—assets that may be currently freely available to everyone—with human-made resources that have been bought and may be only accessible to some people in the future. This approach is not compatible with a fully realized intergenerational equitability as this redistribution is inequitable. The principle of “conservation of access” implies that not only should current generations ensure equitable access to that which they have inherited from previous generations, but they should also ensure that future generations can also enjoy this access (Weiss 1990a, b). All of these considerations suggest that future generations may not be better off with wealth rather than a rich environment; that environmental quality is not something that can be swapped for other goods without loss of welfare (Goodin 1992, 2006) and that natural and human-made capital are not perfect substitutes for one another (Costanza and Folke 1994, 1997). Clearly intergenerational equity is not compatible with the concept

of weak sustainability, a concept that assumes that future generations will not suffer from environmental losses as long as it is compensated for the loss by wealth creation.

CONCLUSIONS

In a myriad of ways, the approaches to sustainable development and the maintenance or enhancement of community well-being advocated by environmental economists and taken up by governments in many countries either reinforce or exacerbate inequities in those countries. Yet equity, both social and intergenerational, is supposed to be a central ethical principle of sustainable development in these countries. This suggests that either:

1. equity is merely part of the rhetoric of sustainable development and is not really a central concern of those governments, or
2. those governments have not understood the equity consequences of policies being promoted by those who have other agendas and priorities.

If equity is to be taken seriously then new ways of decision-making that incorporate social and environmental justice and intergenerational issues must be found that enable the multifaceted values associated with the environment, economics and social change to be fully considered and heeded. Clearly, merely extending market values to incorporate the environment and social change into existing economic systems will not achieve the goal of making changes in community well-being sustainable.

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