

Winners and Losers in the Context of Global Change

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The idea that global change produces winners and losers is widely accepted. Yet there have been few systematic discussions of what is meant by “winner” or “loser,” and little attention has been given to the theoretical underpinnings behind identification of winners and losers. This is particularly true within global-change literature, where the phrase “winners and losers” is widely and rather loosely used. In this article, we explore the concept of winners and losers in the context of two aspects of global change: economic globalization and climate change. We first identify two major underlying theoretical perspectives on winners and losers: one suggests that winners and losers are natural and inevitable; the other suggests that winners and losers are socially and politically generated. We then apply these perspectives to current research on global change and demonstrate that they play a decisive role, influencing opinions on what winning and losing entails, who winners and losers are, and how winners and losers should be addressed. *Key Words: climate change, globalization, human dimensions of global change.*

As we move into the twenty-first century, it is increasingly evident that economic and environmental changes are occurring on a global scale. The effects of these changes are distributed unequally both within and across national boundaries. Greater inequality in the distribution of the costs and benefits of global change implies that, while some sectors are integrating smoothly into the global economic system and are capable of adapting to environmental change, others are becoming marginalized and vulnerable to environmental change. The idea that global change produces winners and losers has become more or less accepted in the common discourse. However, there have been few systematic discussions of what is meant by “winner” or “loser,” and little attention has been given to the theoretical underpinnings behind identification of winners and losers. This is particularly true within the literature on global change, where the phrase “winners and losers” is widely used despite little or no discussion of what is meant by a “win” or a “loss.” In fact, mention of the winners and losers in global change has become so widespread in books, journal articles, and the media over the past several years that a systematic examination of the concept seems overdue.

In this article, we explore the concept of winners and losers in the context of global change. While our definition of “global change” is broad, referring to processes occurring at a global scale that have consequences across all scales (Taylor, Johnston, and Watts 1995; Schaeffer 1997), we focus primarily on two aspects of global change: economic globalization and climate change. Both of these dimensions of global change have received much attention within geography. There is also a widespread

perception that both of these processes result in winners and losers (O'Brien and Leichenko 2000).

Discussions of the impacts of economic globalization frequently address the subject of winners and losers. Proponents of globalization argue that increased economic efficiency associated with policies that reduce trade barriers or liberalize investment will eventually make everyone a winner. Opponents maintain that many regions, sectors, or social groups will be excluded from processes of globalization or will feel only its negative effects (e.g., through increased economic vulnerability and/or a loss of political or cultural identity) (Conroy and Glasmeier 1993; Mittelman 2000). Yet even among proponents of globalization, there is agreement that greater openness creates adjustment problems for some countries and for some groups within countries (Deardorff and Stern 2000). They disagree with their opponents, however, over the significance and magnitude of the adjustment problems, especially when compared to the benefits that globalization is expected to bring (Wood 1994; Rodrik 1997).

In the case of global climate change, policy-makers are often reluctant to identify or acknowledge winners and losers, particularly winners (Glantz 1995). Many consider such discussions to be divisive and detrimental to efforts to develop a global accord on climate change abatement (O'Brien and Leichenko 2000). Nevertheless, climate-impact assessments repeatedly point to inequalities in the regional and sectoral impacts of climate change (Fischer et al. 2001; McCarthy et al. 2001). Furthermore, there is growing recognition among policy-makers, scientists, and the general public that implementation of climate-change abatement policies also produces winners and losers. In

itself, the perception of winning or losing can significantly influence climate negotiations (Glantz 1995; Soroos 1997).

The emerging consensus suggests that winners and losers are associated with many different aspects of global change. Nevertheless, persistent disagreements occur about what “winning” and “losing” entails and who the actual winners and losers are—disagreements that we contend stem from differing, and often unacknowledged, underlying perspectives about how winners and losers arise. In the following sections, we present various definitions of “winners and losers,” and we examine a range of social and scientific theories on the origins of winners and losers. We then explore how these definitions and theories have been used in debates about economic globalization and climate change, and discuss how the different perspectives influence the issue of compensation. We conclude by suggesting ways in which recognition of the differing perspectives on winners and losers may improve global-change research.

Defining Winners and Losers

The notion of winners and losers is by no means limited to global-change research. In fact, the concept permeates the natural and social sciences, playing a role in disciplines ranging from biology and ecology to history, political science, and economics. While the nuances differ, there is a general understanding across all fields that winners succeed or gain something, whereas losers experience disadvantages or deprivations. Before delving into the theoretical underpinnings of the concept, however, let us briefly clarify what we mean by winners and losers. In defining the concept, we distinguish between static characterizations that reflect current social, economic, or political inequities and dynamic characterizations that emphasize identification of winners and losers following an event or in conjunction with longer-term processes such as global change.¹ While the emergence of winners and losers in a dynamic context may, of course, reflect prior or existing inequities, the outcome may also exacerbate or ameliorate these inequities, or create new and different patterns of inequities.

Dynamic characterizations may be further delineated between winners and losers resulting from a specific, voluntary event and those resulting from larger structural processes. Voluntary winners and losers emerge from a competition, interaction, or other event, which often has associated with it specified or implicit rules (e.g., sporting events or lotteries). Prior to the event, no winners or losers exist, and, assuming the game is “fair,” the outcome is

more or less undetermined. Furthermore, the participants typically engage in the event by choice and with knowledge of the potential costs and benefits. By contrast, structural winners and losers emerge from larger societal processes or changes, whereby the distribution of the impacts is unequal, such that gains and losses accrue differentially to participants. Participants do not necessarily engage in the larger processes or changes by choice, and knowledge of the potential costs and benefits is incomplete. Most winners and losers from global change may be thought of as structural, rather than voluntary.²

An additional distinction may be made between winners and losers in absolute versus relative terms (Gruber 2000, 4). Absolute wins or losses are judged based solely on comparison of an individual's (nation's) own status prior to and after an event. If an individual (nation) is better off after an event, then that individual (nation) would be considered an absolute winner. Relative wins and losses depend on comparison with the situation of others. If two individuals (nations) are both made better off by an event, the individual (nation) that gains more would be considered the relative winner; the individual (nation) that gains less would be considered the relative loser. In the case of trade liberalization, for example, all nations may experience absolute economic gains; thus, all would be considered winners in absolute terms. In relative terms, however, those nations that gain more are considered to be the winners, while those nations that gain less are considered to be the losers. With climate change, all nations may lose in absolute terms, but the nations that lose less would be the relative winners, while those nations that lose more would be the relative losers.

A final issue that merits consideration when defining winners and losers is the question of self-identification. That is, a nation-state (individual) may determine for itself (himself/herself) whether it (he/she) has been made better or worse off in both relative and absolute terms as the result of global change. A key advantage of self-identification is that the criteria that determine winning and losing—which may include increased income, greater personal freedom, better environmental conditions, and so forth—are based on standards or values set internally, rather than on criteria imposed from outside. However, an important disadvantage of self-identification is the possible tendency to identify one way or the other for either political or personal motives. Nation-states that have adopted policies to promote globalization, for example, may tend to overidentify as winners in order to avoid the political ramifications of admitting that these policies have not had the desired effects. For individuals, there may be psychological motives to identify oneself as a “winner,” even in the face of evidence to the contrary. There may

also be circumstances in which it is actually advantageous to identify oneself as a loser. In the case of a nation-state, self-identification as a loser due to some aspect of global change may enhance that nation-state's ability to negotiate for advantageous policies. In such cases, some type of external criteria may be necessary for defining and identifying winners and losers.

Theoretical Perspectives on Winners and Losers

Although global-change research is still in its infancy, many of its notions of winners and losers can be traced to cornerstone social and scientific theories, including neoclassical economics and political economy rooted in the writings of Adam Smith, David Ricardo, and Karl Marx and notions of evolution and "survival of the fittest" based on the work of Charles Darwin and others. Themes from these primary bodies of literature—including competition, adaptation, and adjustment—frequently appear in contemporary discussions about winners and losers under global change. Donald Worster (1977) and Peter Koslowski (1996) draw attention to metaphors common to both economics and ecology that are directly or indirectly related to the concept of winners and losers. In debates about globalization, authors refer to free-market competition, comparative advantage, and gains from trade (Wood 1994; Rodrik 1997). Within climate change debates, discussions focus on vulnerability, resilience, and adaptation (McCarthy et al. 2001).

The notion of competition is one point of departure for understanding winners and losers within these various literatures. In ecology, for example, competition occurs when organisms from the same or different species use common resources that are in short supply. When two species compete for resources, one species is likely to be better in gathering or using the scarce resource, such that over the long run the other species may become extinct unless it develops some type of adaptation. When resources are abundant, competition occurs when organisms seeking the same resources harm one another in the process (Krebs 2000). In economics, competition refers to the effort of two or more parties acting independently to secure the business of a third party, usually by offering more favorable terms (Caves, Frankel, and Jones 1993). In ecology, competition is considered a negative interaction between species, in contrast to positive interactions such as mutualism and commensalism (Krebs 2000). In free-market economics, free competition is considered a positive interaction, in contrast to negative interactions such as collusion.

Whether competition is considered a negative or positive interaction, it generally results in winners and losers. To better understand the distinctions between winners and losers, however, we must examine in further detail some of the underlying theoretical interpretations accounting for their emergence. In considering these interpretations, we are not attempting an exhaustive review of all theories addressing the emergence of winners and losers. Instead, we have selected those explanations that play a significant role in the global-change literature.

In categorizing these various explanations, we first draw a distinction between economically based interpretations and those that are ecologically based. This economic/ecological dichotomy is later superseded by an alternative categorization that distinguishes between those interpretations that suggest winners and losers are natural and inevitable and those that suggest they are socially and politically generated.

Economic Interpretations of Winners and Losers

From the economic realm, two of the major competing paradigms explaining the emergence of winners and losers include neoclassical economics and Marxian political economy. Neoclassical interpretations suggest that winners and losers emerge as a consequence of short-term adjustments associated with operation of a free market. As argued by Adam Smith, an increase in the size of a market leads to greater economic efficiency by encouraging specialization of production. While greater efficiency ideally benefits all consumers in a market by lowering prices and increasing the variety of goods available, inefficient firms and/or industries that are no longer able to produce at competitive prices will lose out in the short run. In the long run, the inefficient producers (and the factors of production employed by them) are expected to adjust to the new competitive environment by increasing their production efficiency, exploiting new niche markets, or finding employment in other sectors.

This reasoning is often used to explain the outcome of trade liberalization between two nations. Based on the doctrine of comparative advantage, liberalization of trade leads to specialization in production of those goods that each country produces most efficiently. Winners and losers are identified in terms of prices and factor returns (e.g., wages, rent). Increased economic efficiency (attributed to liberalization) results in lowered prices, thus making consumers in participating countries winners. Concerning the effects of liberalization on factors of production, factor returns are expected to increase for those factors of production that are abundant in each country, and to decrease for those factors that are not

abundant. Thus, the abundant factors in each country, which experience both increased demand for their services and increased returns, are the clear winners under liberalization (Wood 1994); the scarce factors in each country, which experience both reduced demand and reduced returns, are the losers. These losses are expected to be temporary, however, according to the doctrine of factor price equalization, which suggests that lowered returns in losing sectors will induce other sectors to employ this labor or capital (Addison, Fox, and Ruhm 2000).

Theoretical perspectives based on Marxian political economy share a common foundation in the Marxian critique of capitalism and include, for example, world systems theory and dependency theory. In contrast to the neoclassical view of winners and losers, Marxian political-economic perspectives suggest that winners and losers under competitive capitalism reflect inherent biases within a free-market system—biases that clearly favor the owners of the means of production. Expansion of capitalism exacerbates inequalities between capitalist and labor classes as workers are further divested of control of the means of production (Goodall 1987). As capitalism expands, it increasingly transfers “surplus” value from the periphery to the core. Thus, it is not only laborers who lose, but also those living in rural areas, less-developed countries, and the “East,” all of whom become increasingly dependent upon urban areas, advanced countries, and the “West,” respectively (Marx and Engels 1961, 17).

While Marxian political-economic views suggest that expansion of capitalism fosters and perpetuates inequities at all levels, thereby creating many losers, neoclassical views suggests that the spread of the capitalist market system increases global economic efficiency, thereby increasing living standards and eventually making everyone a winner. As discussed below, this debate over whether capitalism erases or reinforces economic inequalities between individuals, regions, and nations is ever-present in discussions of the impacts of economic globalization. Neoclassical economic interpretations suggest that globalization provides a “win-win” opportunity, while Marxian political-economy interpretations provide the basis for much of the contemporary critique of globalization and are frequently applied when illustrating winners and losers from globalization.

Ecological Interpretations of Winners and Losers

From the ecological-environmental realm, two related paradigms that have historically been used to account for winners and losers include social Darwinism and environmental determinism. While both of these theories have been widely criticized, remnants of each persist and, as we

shall see below, underlie many of the contemporary discussions of global environmental change. A third and somewhat less cohesive paradigm of political ecology emanates from the Marxian political-economy perspective described above, offering a contrasting explanation for winners and losers from environmental change.

Social Darwinist perspectives attribute tendencies for winning and losing to genetic and evolutionary explanations. This understanding is inspired by Darwin's theories of evolution and natural selection.³ As developed by Herbert Spencer in the late nineteenth century, social Darwinism argues that like organisms, societies have evolved by a natural process whereby the fittest members survived and were the most successful. Social Darwinists—and later sociobiologists—thus integrated Darwin's ideas—and his concept of “survival of the fittest” into theories about human society (Kaye 1997; Dicken 2000). In particular, Darwin's ideas surrounding adaptation, mutation, and selection have been applied to the social sciences—including economics—in theories of socioeconomic and sociocultural evolution (Koslowski 1996). The direct transfer to human society of the notion of an inherent biological tendency for winning or losing has also been used by some as an argument against government intervention to help disadvantaged members of society and as a justification for racism, elitism, and eugenics (Bannister 1979; Kaye 1997; Dicken 2000).

Social Darwinism received much criticism in its day, particularly from political economists concerned that it could be used to justify competitive capitalism and elitism. Nevertheless, debates about the existence of inherent winners and losers re-emerged during the 1970s. These debates arose largely in response to Edward O. Wilson's (1975) theories about sociobiology, which argued that genetics exert a greater influence on human behavior than previously thought, and Richard Dawkin's (1976) idea of the selfish gene, which applied Darwinism to the scale of the gene to explain altruism and selfishness. Sociobiological approaches explain behavior as the consequence of strategies of self-interested individuals that maximize individual genetic fitness and ensure that this fitness is passed on to offspring (Koslowski 1996). Critics have attacked these positions for underemphasizing the role of culture in human society. For example, sociobiology excludes all types of group selection and assumes that “living beings do not act for the good of their species or group, but rather exclusively for the benefit of themselves or their immediate kin” (Koslowski 1996, 80). Paul Ehrlich (2000) further argues that the distinction between winners and losers is more often a product of cultural evolution than genetics.

An alternative but related paradigm that lingers within contemporary explanations of winners and losers is environmental determinism. Environmental determinism, which attributes human social and cultural behaviors exclusively to environmental factors, has a long history and rose to prominence in the early twentieth century (Huntington 1914; see Johnston et al. 2000). According to this paradigm, winners are likely to be associated with favorable environments conducive to productivity and efficiency, whereas losers are likely to be products of difficult, marginal, or hazardous environments. The influence of environmental determinism can be seen in the writings of early geographers such as Ellen Churchill Semple (1911): “The debilitating effects of heat and humidity, aided by tropical diseases, soon reduce intruding peoples to the dead level of economic inefficiency characteristic of the native races.” Views such as Semple’s were vehemently disputed and eventually disregarded. As Carl Sauer (1941) noted, “Environmental response is the behavior of a given group under a given environment. Such behavior does not depend upon physical stimuli, nor on logical necessity, but on acquired habits, which are its culture.” Despite being discredited as a simplistic and racist approach, environmental determinism persists within the global-change literature, as we shall see below, albeit in a more discrete and sophisticated form than that outlined above.

Unlike social Darwinism or environmental determinism, which use biological or ecological phenomena to explain human conditions, political ecology draws upon social phenomena to explain environmental conditions. Blaikie and Brookfield (1987, 17) provide a general definition of political ecology, whereby it “combines the concerns of ecology and a broadly defined political economy.” Although political ecology is not considered a theory of behavior, it brings together aspects of political economy, human and cultural ecology, and social theory to explore the causes and consequences of environmental and resource issues. Political ecology thus represents a move toward an integrated understanding of how environmental and political forces interact to mediate social and environmental change (Bryant 1992).

Political ecology regards environmental issues as both ecologically and socially defined, and allows for such issues

to be evaluated or judged in terms of the altered benefits and costs that accrue to people, both now and in the future (Blaikie and Brookfield 1987). As in the political-economy perspective described above, winners and losers are considered a rational outcome of ongoing social and political processes. However, these processes interact with ecological conditions across different spatial and temporal scales to shape winners and losers. Winners and losers are not considered to be absolute, definitive, or predetermined; rather, they are the consequences of nature-society interactions.

Winners and Losers: Natural or Socially Generated?

Political-economy (and political-ecology) interpretations not only offer a contrast to neoclassical views but also may be contrasted with sociobiological and environmentally deterministic interpretations. In fact, Marx was “the first of many to charge that Darwin’s theory of evolution was largely a projection of bourgeois competitive relations onto the realm of nature” (Kaye 1997, 23). Marx and other critics of social Darwinism saw the use of Darwin’s theories as an ideological buttress for competitive capitalism (Kaye). Following along these lines, the various ecological and economic positions discussed above can be distilled into two basic and contrasting views of winners and losers (Table 1). The first view, which is found in social Darwinism, environmental determinism, and neoclassical economics, suggests that winners and losers are a natural, inevitable, and evolutionary outcome of either ecological processes or the invisible hand of the free market—processes that are regarded as working for the larger good. Based on the comments of Shiva (2000, 92), who suggests that supporters of globalization often claim that it is “natural, evolutionary, and inevitable,” we refer to this first position as the natural, inevitable, and evolutionary (NIE) view of winners and losers. The second view suggests that winners and losers are deliberately created through processes that benefit some at the expense of others. This position, which we term the socially and politically generated (SPG) view, is linked to the Marxian political-economy and political-ecology positions, both of

Table 1. A Typology for Interpretations of Winners and Losers

	Winners and Losers are Natural, Inevitable, and Evolutionary (NIE)	Winners and Losers are Socially and Politically Generated (SPG)
Ecological interpretations	Social Darwinism Environmental determinism	Political ecology
Economic interpretations	Neoclassical economics	Marxian political economy

which emphasize the actions of human agents within the context of unequal social and political structures in the determination of winners and losers. While the NIE view generally regards the “system” as working properly (with winners and losers as a consequence), the SPG position emphasizes that there is room for intervention and systemic changes which might alter patterns/identities of winners and losers.

In using the SPG/NIE typology to characterize different positions on winners and losers, it is important to note two caveats. First, this simple typology is not intended to be comprehensive or inclusive of all possible positions on the origins of winners and losers. Rather, we include those positions that play a prominent role in the English-language academic and policy literature on global change. Thus, it does not encompass, for example, religious views from either a Western or non-Western tradition, nor does it incorporate views based on cultural theory (see endnote 8), as neither has played a prominent role (to date) in this literature. Rather than striving for comprehensiveness, the aim of this typology is to provide a simple means of sorting and categorizing a very large and diverse body of literature. A second caveat is that the typology is not intended to demonstrate that either the NIE or SPG perspective provides a superior interpretation of winners and losers. Rather, the typology intends to show that both of these views coexist within the literature. The NIE/SPG typology is thus intended primarily as a tool to clarify current debates about winners and losers, accounting for differences in attitudes about how and why winners and losers emerge and for differing positions on how they should be addressed.

Winners and Losers from Global Change: The Examples of Globalization and Climate Change

The discussion above makes clear that the concept of winners and losers is largely subjective. Depending on the individual, group, or society's dominant paradigms and philosophies, winners and losers can be interpreted as either natural, inevitable, and evolutionary (NIE) or socially and politically generated (SPG). In this section, we explore the debates surrounding winners and losers under two aspects of global change: globalization and climate change. Globalization and climate change are interrelated in many respects (O'Brien and Leichenko 2000). The global spread of industrial production, for example, may lead to increased fossil-fuel consumption and higher emissions of greenhouse gases. Similarly, climate change may affect patterns of global trade,

particularly for agricultural commodities (Reilly, Hohmann, and Kane 1994). Such interrelationships are, however, not the focus of the present discussion.⁴ Instead, we focus on interpretations of winners and losers within the (largely separate) literatures that address these two phenomena.

Globalization

The issue of winners and losers arises in discussions of the impacts of cultural, economic, and political aspects of globalization.⁵ Rather than attempting to consider winners and losers from every dimension of globalization, however, we emphasize interpretations related to economic globalization and, particularly, trade liberalization.⁶ We focus on liberalization because it represents both a key driver of economic globalization and a major point of international contention. Liberalization and globalization are, in fact, often equated, as witnessed by the characterization of protests surrounding the recent meetings of the World Trade Organization (WTO) as “antiglobalization” protests.

The NIE and SPG perspectives are especially evident in discussions of what winning and losing entails and how such outcomes arise from globalization (Kapstein 2000; Mittelman 2000.) The NIE view is present, for example, in much of the “conventional wisdom” in support of further liberalization measures. By contrast, the SPG interpretation tends to be associated with those challenging the wisdom of globalization. Before considering the differences between the two perspectives, we should note that both proponents and challengers of globalization generally agree that wins or losses from globalization may be measured in terms of increased or reduced wages, gain or loss of employment, gain or loss of productivity and production capacity, gain or loss of net income, and so forth. There is also general agreement that winners or losers may be identified at all levels, from individuals to regions, nations, or groups of nations (i.e., advanced countries/developing countries) (Conroy and Glasmeier 1993; Deardorff and Stern 2000; O'Brien and Leichenko 2000). Thus, the main apparent difference between the two perspectives is disagreement over whether the wins and losses from globalization are temporary or permanent. From the NIE perspective, losses from globalization are regarded as a short-term consequence of the enlargement of a free market. In the long term, expansion of the free market is believed to make everyone a winner, because greater efficiency and higher productivity will lead to lower prices, higher consumption levels, and, ultimately, higher standards of living. From the SPG perspective,

losses from globalization are regarded as permanent, reflecting inequalities that are inherent in competitive capitalism and are exacerbated by expansion of free-market rule. Rather than erasing differences over the long term, the SPG perspective suggests that expansion of free trade creates and perpetuates patterns of winners and losers. The NIE/SPG split also accounts for disagreements on how winners and losers from globalization should be addressed. If losses are a short-term consequence of globalization, compensation for losers (and clauses to protect social or environmental conditions) are not necessary and may be counterproductive. On the other hand, if losses are permanent, then, should liberalization proceed, the losers must be compensated.

These basic distinctions between the two perspectives might simply be dismissed as reflecting a fundamental and insurmountable split. However, a number of recent challenges to widely accepted assumptions about the benefits of globalization suggest that a consensus may be emerging that globalization, indeed, creates long-term winners and losers (Deardorff and Stern 2000; James 2000b; Went 2000). These include questions about such truisms as the idea that globalization leads to higher consumption, that open trade results in economic growth for all parties involved, and that trade agreements themselves offer a “win-win” opportunity. In addition to these challenges, there is also growing recognition that patterns of winners and losers may change, depending upon the scale of analysis, the level of aggregation, and whether the unit of measurement takes into account the social and/or environmental consequences of economic globalization (Deardorff and Stern 2000; O’Brien and Leichenko 2000).

One truism of globalization that is coming increasingly under fire is the assumption that all consumers are winners because increased availability of goods and lower prices will invariably lead to increased utility. The benefits of export-oriented economic policies have, of course, long been questioned by dependency theorists and others (e.g., Mittelman 1996; Amin 1997; Nederveen Pieterse 2001). Some recent work by James (2000a, 2000b) presents additional evidence that many consumers in the developing world may not be winners from globalization. In particular, lower-income groups in developing countries are “most vulnerable to the disappointments and frustrations that the globalization of consumption entrains” (James 2000b, 549). These consumers are the most likely to experience a discrepancy between their increased desires for consumption goods associated with globalization and their ability to afford these goods. Furthermore, even if these consumers are able to consume a new product—such as a modern prescription drug—as the

result of globalization, they are more likely to be disappointed because the product was not designed for the social-cultural-technological context in which they live (James 2000b). Furthermore, lower-income groups are more likely to bear the brunt of the negative externalities associated with higher consumption by others. Citing the United Nations Development Programme’s World Development Report (UNDP 1998), James notes (2000b) that when negative externalities of consumption are taken into account, new asymmetries emerge between high-income groups, who consume more goods because of globalization, and low-income groups, who bear the brunt of the negative externalities of this higher consumption. Pollution from automobiles owned by higher-income consumers, for example, disproportionately affects the children of the urban poor in the developing world (James 2000b).⁷

A second truism that is increasingly challenged is the argument that open trade leads, in the long run, to economic growth and increased standards of living for all involved (Deardorff and Stern 2000; Garrett 2000; Went 2000). Challenges to this argument come from at least two fronts: studies of the dynamic linkages between trade and growth; and studies of the impacts of increased trade on income distribution. Research on the dynamic effects of trade raises doubts about the positive effects of increased international trade on competition and productivity, suggesting that, under some circumstances, increased international competition may actually lead to reduced productivity (Garrett 2000). Other research on the causal relationship between trade and economic growth suggests that trade is not necessarily a driver of growth, but rather that economic growth often tends to drive the growth of trade (Leichenko 2000). Concerning the linkage between trade and income distribution, growing evidence suggests that globalization is not promoting convergence in incomes between rich and poor countries, but, instead, is increasing global income inequality. Furthermore, new estimates that incorporate measurement of inequality both between and within countries suggest that inequality has grown even more rapidly in recent years than previously thought (Wade 2001).

A third truism that is increasingly disputed is the idea that trade agreements benefit all parties involved. It has long been argued that supranational institutions and agreements such as the WTO provide a win-win opportunity for all signatory nations (Keohane 1984). Yet arguments are emerging that such agreements actually create absolute winners and losers. Gruber (2000) demonstrates that such agreements primarily benefit a few nations, typically the initial signatories. Although other signatory nations would have been better off had the

agreement never been put into place, once in place, nations voluntarily sign on to minimize their absolute losses (Gruber). At the root of this condition is the fact that enacting states have “go it alone” power—that is, they can proceed with international agreements that benefit only themselves, whether or not the losing states join on (Gruber). With regard to the WTO, opponents of globalization have to come to a similar conclusion: that the WTO benefits the North at the expense of the South, and thus is simply the latest in a long series of instruments of neocolonialism intended to maintain power of developed countries over developing countries (Gardezi 1998; Bello 2000).

These challenges to the wisdom of unfettered liberalization of trade suggest that there are growing doubts about NIE views of globalization. Fundamentally, these challenges amount to a broader acceptance of the idea that long-term winners and losers may be intrinsic to the process of economic globalization. While this may appear to favor the SPG interpretation, it does not clearly resolve the issue of who globalization's winners and losers are. Indeed, Alan Dearnorff and Robert Stern (2000, 16–17) note that there is a growing recognition that there may be no clear consensus when broader social (and environmental) impacts are taken into account. Attention to the social dimensions of globalization, for example, may entail consideration of human-rights issues and labor conditions in addition to wages in evaluating the benefits of globalization. Based on a purely economic calculation, a rural-to-urban migrant in the developing world who has become employed in an assembly-line manufacturing plant owned by a multinational firm would be regarded as a winner from globalization because she is now receiving a greater monetary wage for her labor. On the other hand, if working conditions and labor-rights issues are taken into account, that same “winner” might be regarded as a loser because she is working in unsafe conditions with no right to engage in collective bargaining agreements.

Other issues that complicate identification of globalization's winners and losers include questions of scale of analysis and unit of aggregation and measurement. The importance of scale in identifying winners and losers from globalization may be illustrated through consideration of the relationship between globalization and inequality. One of the frequent criticisms raised by opponents of globalization is that it exacerbates inequalities between those nations, regions, or individuals “connected” to the global economy and those that are “left behind” (Greider 1997; Mittelman 2000; Wade 2001). Globalization may exacerbate income inequality through a number of mechanisms, each operating at a different scale. At the

level of the nation-state, globalization—as manifest through policies aimed at trade liberalization and promotion of foreign investments—has supported economic integration between the economies of advanced countries such as the United States, Western European nations, Japan, and those of newly industrialized countries (NICs) such as Korea and Taiwan (Dicken 1997). As a result, advanced and NIC nations have experienced increased productivity, increased levels of economic production, and a tendency toward convergence of per capita incomes at higher levels than previously achieved. By contrast, countries left out of processes of economic integration—particularly countries in sub-Saharan Africa, North Africa, the Middle East, and South Asia—have experienced stagnating or falling levels of per capita income (Castells 1996). Consequently, the gap between average income levels in advanced and NIC countries and those in the less developed countries of Africa, the Middle East, and South Asia has been widening.

At a regional level within individual countries, globalization may also exacerbate economic inequalities. In the case of China, for example, globalization has primarily affected the country's eastern provinces, which have, since the early 1980s, experienced rapid growth of an urban-industrial complex facilitated by both foreign direct investment and income from foreign exports. Central and western regions of the country, by contrast, have received relatively little foreign direct investment and generally do not participate in international export markets (Sun and Dutta 1997; Yao and Liu 1998). As a consequence, differences in economic growth rates and standards of living between the eastern provinces and the rest of the country have widened dramatically (Chen 1999). Similar patterns of differential regional involvement in the global economy and growing regional inequality—particularly between urban and rural areas—have been observed in many other countries of the developing world (Afshar 1994).

Finally, at an individual level, globalization may contribute to income inequality by exacerbating differences in returns to skilled versus unskilled labor. In an advanced country, such as the United States, globalization has allowed further specialization of the economy in high-end service-oriented industries, thereby increasing both demand for and wages of highly skilled workers (Wood 1994). For unskilled workers, globalization has led to increased competition with other unskilled workers in lower-wage developing countries, resulting in reduced demand and reduced wages. Such trends have contributed to widened income gaps between skilled and unskilled workers within the United States and in other advanced countries (Rodrik 1997).

In addition to scale of analysis, investigation of the winners and losers from globalization may also be affected by decisions about the unit of measurement and level of aggregation. For example, Wade (2001) demonstrates that globalization has far more losers if measurements of the impacts of globalization on inequality incorporate both country and individual-level measures. By contrast, if winners are measured in terms of national production, Wade finds, more countries are winners than losers.

Taken as whole, the growing recognition that globalization creates winners and losers, in the midst of growing debate about how to measure or define winners and losers, results in something of a paradox: we recognize that there are winners and losers from globalization, but we also recognize that their identity depends on our assumptions about scale, aggregation, and other factors. As discussed in the next section, similar paradoxes are evident in discussions of climate change.

Climate Change

Climate change has emerged as a global issue based on the understanding of the atmosphere as a global commons threatened by human activities (Taylor and Buttel 1992). As with economic globalization, the concept of winners and losers from climate change is subject to interpretations that can be traced to both the NIE and the SPG perspectives. Although the SPG view has emerged noticeably in the past decade, no evidence exists of a large-scale shift toward this perspective. Rather, the two views coexist, with both perspectives evident in national and international debates. The breakdown of climate change negotiations in The Hague in 2000, along with the reluctance on the part of the United States to pursue future negotiations on the rules and mechanisms developed under the Kyoto Protocol, suggest that debates surrounding winners and losers from climate change may become even more contentious in the future.

The notion of winners and losers permeates debates about climate-change impacts and abatement policies, both implicitly and explicitly (Glantz 1995; Tol et al. 2001). Winners are usually referred to in terms of improved conditions, opportunities, positive effects, and benefits, while losers are referred to in terms of negative effects and increasing vulnerability. Although mention of winners and losers appears throughout the climate-change literature, explicit reference to winners and losers is largely avoided in official documents such as the Intergovernmental Panel on Climate Change (IPCC) assessment reports, reflecting the political sensitivity of the topic. The most recent evidence suggests that winners

from climate change will include the middle- and high-latitude regions, whereas losers will include marginal lands in Africa and countries with low-lying coastal zones (Fischer et al. 2001; McCarthy et al. 2001). Within the climate-impacts literature, however, greater emphasis is placed on identifying potential losers (i.e., assessing vulnerability) than on identifying potential winners.

The NIE perspective underlies many climate-impact assessments. This perspective is driven by the notion that climate sensitivity and biophysical vulnerability determine who is a winner and who is a loser. Indeed, if environmental determinism can be described as the idea that the environment controls the course of human action (Lewthwaite 1966), then examining the direct consequences of physical changes in the climate system for human systems invariably reflects an NIE perspective. Taylor and Buttel (1992, 410) and Demeritt (2001, 318) discuss environmental determinism in climate studies and the implications for climate policy.

The concept of adaptation also plays a prominent role in climate-impact assessments. Adaptation refers to adjustments to a system in response to actual or expected climate stimuli, their effects, or their impacts (Smit et al. 2000). The notion of adaptation draws upon a number of analogies to ecological and evolutionary themes, including resilience, sensitivity, flexibility, and viability (Smit et al.). Many experts see adaptation as providing a “win-win” opportunity, in that adaptive responses generally involve actions that improve the environment, regardless of climate change (Carter 1996). Thus, adaptation is increasingly seen as a key factor in determining winners and losers under climate change (Kelly and Adger 2000).

The NIE approach is exemplified in the second assessment report of the IPCC (Watson et al. 1996). The report focused on assessing the sensitivity and vulnerability of systems to a range of potential climate changes and then evaluating these systems in the context of future climate-change scenarios. The report examined impacts on terrestrial ecosystems, aquatic ecosystems, food and fiber, human infrastructure, and human health. Biophysical impacts formed the basis for most of the assessments reviewed in the report, directly determining the socioeconomic impacts. One of the report’s conclusions was that “[p]eople who live on arid or semi-arid lands, in low-lying coastal areas, in water-limited or flood-prone areas, or on small islands are particularly vulnerable to climate change” (Watson et al. 1996, 24).

The report did not explore the underlying factors that contribute to vulnerability and adaptive capacity. This reflects the fact that these themes were not prevalent in the impacts literature assessed for the report. Instead, the report came up with the more general conclusion that

“systems are typically more vulnerable in developing countries where economic and institutional circumstances are less favorable” (Watson et al. 1996, 24). The report did not address *who* in these countries are most vulnerable, *where* they are located within the countries (e.g., urban versus rural areas), or *why* they are vulnerable, aside from disadvantageous economic and institutional circumstances. Kelly (2000) challenges the deterministic “truism of global warming” that developing countries will be the greatest losers from climate change and sea-level rise, suggesting instead that these countries may be better able to cope or adapt to climate change as a result of high levels of past and present vulnerability to climate hazards (Kelly 2000).

The SPG perspective, reflected in the work of Bohle, Downing, and Watts (1994) and Kelly and Adger (2000), emphasizes the social construction of vulnerability, focusing on the factors that underlie vulnerability to climate change, rather than on the direct consequences of biophysical changes. Understanding the structures and causes of present-day climatic vulnerability is seen as critical to identifying and addressing winners and losers under climate change. Bohle and colleagues (1994) argue that current vulnerability differs widely between countries and classes, varying over both time and space, and that climate change will have differential impacts on vulnerable groups. In other words, in arid or semiarid lands, low-lying coastal areas, and water-limited or flood-prone areas, some will emerge as winners and some as losers, depending on the particular constellations of vulnerability.

The IPCC's third assessment report begins to address some of the issues that were lacking in the second report, including questions of equity, differential vulnerability within regions, and differing adaptive capacity (McCarthy et al. 2001). For example, the report recognizes that the consequences of biophysical impacts “can differ for different members of the same community—as when some individuals or groups perceive an opportunity with change, and others experience a loss, thereby changing community dynamics and complicating decisions about how to adapt and the apportionment of costs of adaptation” (McCarthy et al., 90). This subtle acknowledgment of the social construction of vulnerability reflects a shift from an NIE to an SPG perspective on winners and losers.

In terms of equity, the report distinguishes between utilitarian approaches and other methods for comparing situations in which different people are affected differently. It acknowledges that the utilitarian rule—which asserts that the rule with the best overall consequences is considered the best—is, for the most part, insensitive to distributional issues. However, it notes problems with other methods as well, including the

difficulties in comparing well-being across nations using measures such as gross domestic product and the human development index. The report concludes that “[E]conomics may be able to highlight a large menu of distributional issues that must be examined, but it has trouble providing broad answers to measuring and accounting for inequality, particularly across nations” (McCarthy et al. 2001, 125). Thus, although winners and losers will clearly result from climate change, it is difficult to develop more than a qualitative understanding of their distribution.

Assessments of winners and losers from climate change are further complicated by issues related to both spatial and temporal scales. As with economic globalization, winners and losers from climate change vary according to the scale and unit of aggregation. National-level assessments are likely to yield different conclusions regarding winners and losers than those of regional or local-level assessments (O'Brien, Sygna, and Hagen forthcoming). When results are aggregated across large spatial scales, the net impacts can hide social and geographic variations, such that individual or regional winners and losers disappear within the aggregate outcome (Glantz 1995). For example, at the national level, agriculture in the United States is expected to benefit from climate change (Fischer et al. 2001). Regional assessments, however, show that agriculture in the southern United States is likely to be adversely affected by climate change (Adams, Hurd, and Reilly 1999). At the local and individual levels, some communities or farmers in the South may nevertheless emerge as winners, depending on what they grow, how commodity prices are affected by supply changes in other regions or countries, what adaptation measures are pursued, and so forth. Thus, assessments of the agricultural impacts of climate change produce different patterns of winners and losers depending on the scale of analysis.

Assessments of winners and losers are also complicated by temporal factors. Vulnerability is a dynamic concept that is subject to change over time in response to structural economic changes and other external shocks (Leichenko and O'Brien 2002). For example, economic globalization may transform some climate-change losers into winners if new economic opportunities arise, or it may compound the negative effects of climate change and render some regions or groups “double losers” (O'Brien and Leichenko 2000). In the long run, it is also possible that so-called winners under climate change may in fact become losers as a result of political and economic instability stemming from climate-related impacts in other countries or regions of the world. Furthermore, the magnitude of climate change over the long run may surpass critical thresholds of tolerance or trigger catastrophic events, thereby transforming benefits into losses.

As discussed for globalization, the unit of analysis is critical to the conclusions reached by climate change studies. Tol and colleagues (2001) find that aggregations based on dollars lead to the conclusion that the world as a whole may win from climate change, whereas if aggregation is based on people, the world may lose. Although aggregation may provide policy-makers with a single estimate that represents the magnitude of damages expected to occur at a global scale, such aggregation hides some critical issues and value-laden assumptions that have a wide range of implications at the local level (Tol et al. 2001).

Winners and losers from climate change are thus difficult to identify in absolute terms, as the level of aggregation and scale of analysis can influence the outcome. Consequently, a decision to focus on one scale over another has implications for both impact assessments and abatement policies. If some regions or countries perceive themselves to be winners under climate change, across-the-board abatement efforts may not be socially desirable (Caplan, Ellis, and Silva 1999). Indeed, some uncertainty regarding potential winners and losers may be beneficial. As Glantz (1995, 44) observes, “If winners and losers are identified with some degree of reliability, the potential for unified action against the global warming may be reduced.” This is assuming that winners will not want to relinquish benefits to losers in order to reduce the impacts of those losses. From this perspective, uncertainty in identifying winners and losers under climate change may be constructive to policy discussions.

Addressing Winners and Losers

While the existence of winners and losers is seldom disputed, the use of the NIE/SPG typology helps to explain the lack of consensus within the global-change literature over the manner in which society addresses winners and losers. The issue of compensation is particularly sensitive within debates about globalization and climate change, and positions can be traced to various competing political philosophies and cultural theories.⁸ Although it is beyond the scope of this article to provide a comprehensive review of these literatures, two philosophical perspectives—utilitarianism and egalitarian liberalism—merit brief examination because they play a significant role in debates over how to address winners and losers from global change.

Utilitarian ideologies generally agree that social arrangements should be judged by how they contribute to the sum of satisfactions available to individuals (Anderson 1990). Utilitarian arguments have long been cited as justification for trade liberalization (Kapstein 2000).

According to the utilitarian philosophy, losers are acceptable because the net benefits to society in the form of lower prices outweigh the individual losses. With regard to climate change, winners and losers may be inevitable, but it is the net balance of wins and losses across society that matters more than individual wins and losses when formulating abatement policies, as this is considered the most efficient strategy that maximizes overall net economic welfare (Nordhaus 1991).

By contrast, egalitarian liberals such as Rawls (1971, 15) argue that the state should secure equal liberties for all citizens and that “inequalities of wealth and authority are just only if they result in compensating benefits for everyone, and in particular for the least advantaged members of society.” Recognizing that winners and losers are socially generated, egalitarian liberals contend that it is the responsibility of society to address losers. Accordingly, the losers under either globalization or climate change require compensation.

Those who view winners and losers through an NIE perspective may see compensation as unnecessary, while those who adopt an SPG perspective may place a greater emphasis on compensation and the need to address structural factors contributing to vulnerability. For example, in terms of globalization, Kapstein (1999, 547) argues that “If the trade regime is to balance efficiency with justice, it must develop its compensatory mechanisms—such as foreign assistance—in order to help those countries that take up-front losses accept greater liberalization.” In the case of climate change, the issue of compensation has already emerged in international debates. For example, the Alliance of Small Island States (AOSIS), a caucus group that argues that small islands will be inevitable losers under climate change and an associated sea-level rise, has been active in demanding compensation for the negative impacts of climate change (Soroos 1997). The need for compensation has even been recognized in Article 4.8 of the United Nations Framework Convention on Climate Change (UN 2002):

[T]he Parties shall give full consideration to what actions are necessary under the Convention, including actions related to funding, insurance, and the transfer of technology, to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures.

In addition to promoting an understanding of whether compensation is appropriate, the NIE/SPG typology can be used to understand decisions regarding who receives compensation. According to Article 4.8 of the UNFCCC, compensation is targeted exclusively at developing

countries, particularly those with low-lying coastal areas; with arid and semiarid areas; with areas prone to natural disasters; with high urban atmospheric pollution; with fragile ecosystems; and with economies that depend on income generated from fossil fuels. These criteria favor the NIE understanding of environmentally determined winners and losers. Socially and politically generated losers are not considered eligible for compensation. As a result, losers that emerge within developed countries or in areas that are not considered biophysically vulnerable to climate change are unlikely to receive compensation, unless such compensation is administered through national programs.

Conclusion: Implications for Global-Change Research

The notion of winners and losers arises recurrently in the literature and discussions of global change. As we have demonstrated, perspectives on winners and losers from global change may be separated into two general categories, one suggesting that their emergence is the natural and inevitable consequence of ecological or economic processes (NIE), and the other suggesting that they are deliberately generated by inequitable social and political conditions (SPG). The discussions of both globalization and climate change suggest that little debate occurs about the *existence* of winners and losers. Rather, debates arise when it comes to *identifying* winners and losers and explaining *why* they exist. Here, the NIE/SPG typology provides a way to understand how and why different perspectives emerge, and it helps to account for different attitudes toward addressing winners and losers.

Recognition of the existence of different perspectives on winners and losers may enhance global change research in a number of ways. First, the difficulties associated with identifying winners and losers point to a need for more explicit recognition of the role of scale, time period, and aggregation in determining winners and losers. As illustrated by the examples of both globalization and climate change, decisions about whether to assess winners and losers at the national, regional, local, or individual levels, whether to conduct the assessment for the short or long term, and how to aggregate wins and losses are crucial to identification of winners and losers. In order to avoid viewing winners and losers through a single, static lens, research aimed at identifying winners and losers should incorporate multiple scales of analysis and should take into account the possibility that the identities of winners and losers from global change may shift over time.

Second, in light of the difficulties associated with identifying winners and losers, the issue of compensation needs to be considered in a more rigorous manner. To date, compensation has received relatively little direct attention in the global-change literature. As the discussion above reveals, compensation is not an issue determined simply by political will or financial capacity. Rather, it is also influenced by underlying perspectives on winners and losers. These perspectives affect not only whether compensation is given, but also who is compensated. As the ongoing processes of globalization and climate change continue, compensation of losers is likely to become a central issue for policy negotiations.

Third, problems encountered in defining wins and losses—particularly problems that arise with self-identification—suggest that a need may exist to consider alternative terminology in the assessment of global-change impacts. As the examples of climate change and globalization demonstrate, what may appear to one individual, group, or nation to be a win may be viewed by another as a loss. The terms “winners” and “losers” also forge the image of a clear dichotomy between the two groups. In reality, the coexistence of competitive and cooperative interests often blurs the distinctions between winners and losers (Horowitz 1984). Furthermore, the use of such a dichotomy may be disempowering for both sides if outcomes are interpreted as predetermined or immutable: winners will be seen as favoring policies that will help them remain winners, while losers will be seen as opposing certain policies precisely because they are losers. Each side will be considered to be acting in its own self-interest, and there will be no possibility of altruism.

Finally, although our discussion of winners and losers from global change has focused on the examples of globalization and climate change, winners and losers are also likely to emerge from many other types of global change, such as deforestation, biodiversity loss, and atmospheric pollution. Sensitivity to differences in perspective on winners and losers is important in each case, because each issue is likely to elicit different patterns of winners and losers. Recognition of the influence of different perspectives on winners and losers and the role that factors such as scale of analysis and unit of aggregation play in the identification of winners and losers may thus contribute to an improved understanding of many global-change issues and may point to new insights regarding how these issues should be addressed.

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Notes

1. The labels of “winner” and “loser” are also used to make judgments or value-laden characterizations that apply to the status quo. For example, people with high levels of education and/or income may be considered “winners” by some members of a society, as compared to people with low levels of education and/or incomes, who may be labeled as “losers.” Such characterizations do little more than describe existing or historical patterns of differentiation and inequality in the world.
2. In the case of international agreements associated with global change, such as the Kyoto Protocol, the decision by a nation to participate in the agreement is voluntary (Gruber 2000), but because many of the winners and losers from these agreements have little say in the decision-making process, they may be considered structural winners and losers.
3. “At times he [Darwin] gives the impression that the struggle for existence between forms must lead to a winner and a loser. He sees this as particularly likely between closely related species or varieties” (Harper 1991, 398).
4. O’Brien and Leichenko (2000) provide a detailed discussion of the linkages between climate change and globalization.
5. Globalization is, in fact, an all-encompassing term applied to a wide range of economic, cultural, and political processes, including, for example: the liberalization of trade policy and expansion of foreign direct investment; the fall of dictatorships and the emergence of new democracies; and the homogenization of consumer preferences and gradual disappearance of cultural distinctiveness (Schaeffer 1997; Dicken 1998; Mittelman 2000). All of these processes are associated with greater global integration, and all may have winners and losers.
6. The economic, political, and cultural dimensions of globalization are, of course, interrelated. Gilpin (2000) and others have suggested, for example, that the desire for political stability following World War II was and still is the key driver of efforts at global trade liberalization. Similarly, cultural homogenization may be linked to the advertising practices of major multinational firms seeking to expand markets for various consumer products, such as soft drinks and athletic shoes.
7. Although environmentalists have also challenged the premise of benefits from higher consumption, these arguments have coexisted with the belief, based on evidence from advanced countries, that economic growth ultimately improves environmental standards. New challenges to environmental Kuznets curves, however, suggest that, even with cleaner, more efficient production, the growth effects and the net increase in consumption associated with globalization will still have a net negative environmental impact (Tisdell 2000).
8. O’Riordan and Jordan (1999) provide an excellent example of the use of cultural theory, suggesting that interpretations of what (if anything) to do about winners

and losers stem from differing “ways of life.” They categorize viewpoints on what to do about the inequitable outcomes of social processes into fatalist, individualist, hierarchist, and egalitarian points of view.

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