Chapter 3
Global Ecological Crisis: Structural Violence and the Tyranny of Small Decisions

Juliet Bennett

Abstract What is causing the global ecological crisis? Who has the power to solve it? This chapter explores the global ecological crisis as a form of structural violence. Galtung's "Structural Theory of Imperialism" (1971) is integrated with Kahn's "Tyranny of Small Decisions" (1966). The synthesis of theories sheds light on the multi-levelled and multi-directional influence of individuals, nations, institutions and culture. Countless "small decisions", that appear separate and distant from their collective long-term global consequences, are posited to be a root cause of the crisis. Solving the crisis calls for a holistic re-orienting of decision-making by people across many sectors of society aimed at long-term global interests rather than short-term personal interests. Examples of these decisions are considered. The chapter closes by imagining what a just and sustainable world system operating within planetary boundaries might look like, and consider examples of the type of decision-making it might involve.

Keywords Global ecological crisis · Structural violence · Tyranny of small decisions · New story · Holistic worldview · Process philosophy

3.1 Introduction

What is causing the global ecological crisis? Who has the power to solve it? What can motivate them to do so? These questions are of utmost importance for shaping a peaceful or violent future for humanity and other species. They are also, of course, too big and complex for one person or one chapter to answer. This chapter offers an introduction to the complex relationships between politics, economics, culture and

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ecology as viewed from an interdisciplinary peace and conflict studies perspective, in hope of shedding light on these two questions.

The central argument is that the global ecological crisis is a form of structural violence, an indirect form of violence for which no one is directly responsible (Galtung 1969). The chapter posits that the crisis has resulted as an unintended consequence of countless everyday decisions by individuals in their roles within institutions and nations. These decisions are influenced and limited by historically embedded macro-structures (such as policies, laws and cultural norms). Arguably, however, the collective decision making of individuals has the power to evolve those structures to be more just and sustainable. In other words, it is neither solely the structures nor solely the actors who are responsible for the global ecological crisis, but it is the *interaction* between them.

The argument will unfold in three stages. First, Sect. 3.2 clarifies what the author is referring to by 'global ecological crisis' and introduces some of the complexities around its causes. This stage surveys some of the well-known dimensions of the global ecological crisis such as climate change and loss of biodiversity, in a broader context particularly focused on a paradox between population stabilization, entrenched poverty, a rampant profit motive and a planetary ecosystem with limits. This feeds into the next stage, which seeks to answer the second research question: Who has the power to address the crisis?

Section 3.3 brings together a number of theories and examples that help to explain the global ecological crisis as a form of structural violence, and to point to varying power of people and institutions to mitigate it. Galtung's widely cited "A Structural Theory of Imperialism" (1971) is selected as an example of dependency and world systems theories, providing a critical perspective of the global distribution of political and economic power. This model is expanded with reference to Jorgenson (2006), to propose that this imperialist structure continues to influence unequal ecological exchanges between higher and lower income countries,[1] and is an obstacle to successful international climate change negotiations.

The power of individual actors within this model is then considered with reference to Kahn's economic theory "Tyranny of Small Decisions" (1966), observing the "small" nature of decisions, short-term and locally focused, that are inadvertently causing the global crisis. The model is further expanded with reference to Sklair (2002) to propose that power is particularly concentrated in a Transnational Capitalist Class, a power network of corporate, government, professional, media and consumer elites. As a whole the theories and their synthesis offers an introduction to some of the global political, economic and cultural factors, and groups of actors, which have contributed to the global ecological crisis and have some power to mitigate it.

[1]The language of high-income countries and low-income countries is preferred to the corresponding first world and third world, Global North and Global South, or developed and developing worlds, however these terms will be used interchangeably due to differing terms used in the literature reviewed.

The final stage of the argument explores the ways in which a holistic re-orienting of decisions by groups of actors might work to bring about a more just and ecologically sustainable world system. Inspired by the workshops of Boulding (1988), the author indulges an imaginary leap into what such a system might look like. This is supported by intersecting discourse in process philosophy, deep ecology and macro history aimed at moving towards an ecological civilization. Examples are provided to consider to the types of decision-making that such a shift might involve.

Before exploring the dynamics of the structural violence, it will be valuable to clarify exactly what is being referred to here as a 'global ecological crisis.'

3.2 Global Ecological Crisis

> Our foul air, polluted waters and oceans, shrinking croplands, creeping deserts and extinguishing species tell the true story (McDonagh 1986: 45).

Seminal works such as Leopold's philosophy of a "Land Ethic" in *A Sand County Almanac* (1949), Carson's *Silent Spring* (1965), *Limits to Growth* (Meadows et al. 1972), and *The Economist's Blueprint for Survival* (1972) by Goldsmith and Allen, have gradually increased awareness and concern about the effect that humans are having on their environment. Thanks to countless books and documentaries such as former Vice-President Gore's *An Inconvenient Truth* (2006), awareness and concern for humanity's impact on the environment now has widespread public awareness. As Sean McDonagh points out in the quote above, these observations tell the true story. This section reviews some of the key issues in order to clarify what is the 'global ecological crisis' and how it has arisen.

Signs of a global ecological crisis include air pollution, climate change, the vast loss of millions of species, loss of biodiversity and topsoil, overgrazing and disruptive agricultural practices, related issues of desertification and deforestation, and disrupted water systems (Rajagopalan 2011). Humanity is witnessing a "systemic destruction" of nature, species, societies and cultures, which poses a potential threat to the very "survival of biological life" (Escobar 1997). Some even call it ecocide and suggest that it should be internationally recognized as "the 5th Crime against Peace" (Higgins et al. 2013). Rockström and his colleagues (2009) have identified "planetary boundaries" as a framework for humanity to limit the impact of their activities on the planet.

If humanity is going to avoid disasterous and violent consequences, they must stay within nine planetary limits. Rockström (2010) believe that three of these boundaries have already been breached: climate change, the nitrogen cycle, and biodiversity loss.[2] There is presently 390 parts per million (ppm) of carbon dioxide in the atmosphere, with a limit of 350 ppm. Humanity has also past the planetary

[2]The other six processes with limits are: depletion of stratospheric ozone, land use change, freshwater use, ocean acidification, air pollution from aerosol loading, and chemical pollution.

boundary for a healthy nitrogen cycle, removing 121 million tonnes of nitrogen per year (largely used for fertilizer in food production), with a proposed boundary of 35 million tonnes per year. The rate of biodiversity loss is currently over 100 per million species per year, with a proposed boundary of 10 per million species per year. Put another way, there has been a loss of 52 per cent of mammals, birds, reptiles, amphibians and fish species between 1970 and 2010 (WWF 2014). Such statistics and examples emphasise the impact that human beings are collectively having on the planet.[3] These processes are operating in a historical and political context, with particularly important implications when it comes to continuing world population growth.

In the last 250 years the human population has risen seven-fold. When Malthus wrote his famous *Essay on the Principle of Population* (1798), the world population was under one billion people. By 1900 it had reached 1.7 billion people (UN 1999), by 2000 it had reached 6 billion, and it took just 12 years to increase from 6 to 7 billion. As of 2015 there are 7.325 billion people on the planet (UN 2015). The Population Division of the United Nations' Department of Economic and Social Affairs *2012 Revision* predicts a slowing down of the growth rate, such that humanity will reach 9.6 billion in 2050 and 10.9 billion by 2100 (UN 2013).[4]

Literature on stabilising population stresses the connections between stabilising population and social justice. For example, a more stable population is linked to increasing social stability, the reduction of child mortality and the alleviation of poverty. More stable populations are also linked to empowering women via gender equality, increasing access to education (particularly for females), improving maternal health and access to contraception. Furthermore stabilising population is linked to the development of green technologies that would enable the resources and energy needs of the global population to be met without disastrous implications for the Earth's ecosystems and climate (Shapiro 2012; de la Croix 2014; Oded 2011; Rosling 2010).

The WWF's Living Planet Report (2014) states that *current* human activity needs one and a half Earths to sustain it. That is, humanity is already using nature's gifts faster than they can be renewed. If low-income countries are able to be lifted out of poverty the "dual effect of a growing human population and high per capita Footprint will multiply the pressure we place on our ecological resources" (WWF 2014: 12). It is useful to recall Ehrlich/Holdren's (1974: 720) formula for calculating the environmental impact of humans on Earth: *Population* × *Consumption*

[3]Refer to UNEP's GEO5 report (2012) for more information and statistics.

[4]The *2012 Revision* states that the predicted stabilisation at 10.9 billion in 2100 is based on a "medium-variant projection" that assumes a "decline in fertility in many countries where large families are still prevalent" (UN 2013). This scenario has changed significantly since the *1998 Revision*, which predicted that world population would stabilise at 10 billion in 2200 (UN 1999). If the rate of one billion people every 12 years continues, the population will reach 10 billion at 2044, and 14 billion by 2100.

(or Affluence) × *Technology*.[5] Ultimately to reduce the impact of humans on the environment, the global community must decrease or stabilise population, decrease consumption, and/or improve technology such that 10 billion or more humans can satisfy at least their basic needs in non-harmful ways (Hart 2007: 31).

In this chapter the term 'global ecological crisis' is used to refer to the widespread destruction that humanity as a whole is causing to their environment. This section has posited that the impact that humanity has on their planet is tied to issues of social justice. It has suggested that addressing the global ecological crisis requires stabilising world population, addressing structural injustices in the world system, and developing ecologically harmonious ways of living. In order to move toward such solutions, one must consider the economic, political, historical and social factors behind present world systems. These dimensions will be elaborated in sections that follow.

3.3 Ecological Crisis as Structural Violence

Are people responsible for the ecological crisis, or are institutions? In this section, two theories will be synthesized to shed light on the causes of the global ecological crisis, viewed as a form of structural violence. It will consider the varying power of people and institutions to perpetuate or mitigate it, asserting that *both* people and institutions are responsible, via a complex of multilayered and multidirectional relationships.

Arguably, the global ecological crisis is a structural form of violence in the sense that "*no specific actors* are indicated, and … *no specific motivation* is necessary" (Galtung 1980: 183).[6] In the dominant neo-liberal capitalist system, normalized production and consumption habits of industrialized societies, supported by an international legal and economic framework, feedback into the system in ways that encourage the maximization of short-term profit for some individuals over the long-term health of the ecosystem (Chomsky 1999). In this form of capitalism one might blame the global ecological crisis on legal and economic structures, and on corporate and governmental institutions. Yet such structures and institutions are inseparable from the humans that accept them, operate within them, and who can work to change them. That is, within those corporations, governments and legal systems are people whose actions, while cultivated and operating within those structures, can also work to change them. Hence one might also blame individual

[5]This formula was first published in P. R. Ehrlich and J. P. Holdren (1974: 720). Originally "Consumption" is used rather than "Affluence": resource consumption = population × consumption per person; and hence: environmental impact = population × consumption per person × environmental impact per consumption. Affluence is used in later works by Ehrlich due to the handy acronym PAT (rather than PCT)—see also Ehrlich (1990: 58, 273).

[6]Emphasis is Galtung's. Galtung's 1980 article is a follow-up on his influential 1970 article "A Structural Theory of Imperialism." This chapter draws from both.

people and groups for the crisis, each who makes decisions in serving their own personal interests, in their roles as consumers, employees, shareholders, superannuation holders, CEOs and staff of corporations.

Theories of structural violence grapple with the 'emergent' properties of global systems, through which feedback mechanisms bring about unintended consequences. This dynamic relates to the work of complex systems theorists, who describe the way that parts can influence a whole, and a whole can influence the parts, with neither completely determined by the other (Thrift 1999). Out of interacting components emerges a property that "couldn't have predicted from what you know of the component parts," explains Chris Langton, that "feeds back to influence the behaviour … of the individuals that produced it" (cited in Thrift 1999: 33–34).[7] This multidirectional causation is useful in its application to the global ecological crisis explored as a form of structural violence. It illuminates tensions between individual short-term decisions and the collective long-term consequences of those decisions. This will be further interrogated in the analysis that follows.

For the purposes of this discussion the author has selected two theories that combine to provide a framework for exploring the global ecological crisis as a form of structural violence. The first theory is Galtung's (1971) "Structural Theory of Imperialism," which provides a historical context for the relationships between low- and high-income countries, relationships that arguably have a continuing influence on poverty, environmental destruction and climate change negotiations in the world today. Inspired by dependency theorists such as Raúl Prebisch while teaching in Chile (see Galtung 2014), and in line with Wallerstein (1974) and other world-systems theorists, Galtung's theory explores the dynamics of power between Centre and Periphery nations.[8] Galtung's theory was selected as the foundation for this model due to its extensive influence and due to Galtung's prominence in the field of peace and conflict studies. Insights from more recent theories that build on Galtung's framework will be integrated into the analyses below.

Building on the foundation laid by Galtung's theory, Kahn's (1966)'s "Tyranny of Small Decisions" was selected due to its explanatory value in terms of parts and wholes separated in time and space. It complements Galtung's theory in illuminating the bottom-up power within structural violence, providing further insights into the interlinking macro and micro dimensions of the global ecological crisis. The combination of theories will be used to identify those with power to help

[7]For example, out of the interactions of cells emerges an organ, which influences the behaviour of the cells. Out of the interaction of organs emerges a human body, which influences the behaviour of the organs. Out of the interaction of humans emerges a culture; which influences the behaviour of its humans.

[8]Theoretically Galtung's theory applies to any form of structural imperialistic power relations, including between two groups or two people, but he applies it primarily to the relationship between nation states. Galtung (1980: 184) notes that his theory "indicates *what* to look for if imperialism is at work, not *where* to look for it." Imperialism, here, might be in the sense of economic as well as the "political, military, communicative, cultural and social."

address the crisis. These theories will be considered separately, adding to them contemporary and complementary theories, and building a diagrammatic representation at each stage.

3.3.1 A Structural Theory of Imperialism

In his "A Structural Theory of Imperialism" (1971), Galtung divides nations into the *Periphery* (P) and the *Centre* (C), each having within them a periphery (p) and centre (c).[9] People who are in the *centre of the Centre* (cC) are posited as being a dominant power, the most influential people in the world. This might take the form of people who own large amounts of capital, corporate executives, governments, influential media persons, and academics—people with the power to influence and make decisions that affect the masses.[10] The people in the *periphery of the Centre* (pC) are the public majority of high-income countries—people who work, consume and live within the norms of the structure. The people in the *centre of the Periphery* (cP) are the more powerful people in low-income countries—people who benefit from selling the country's resources and labour to the wealthier nations. Finally, the people in the *periphery of the Periphery* (pP) are those with the least power, the four billion people at the bottom of the global pyramid of material wealth.

Galtung describes a Conveyor Belt pumping resources (human and natural) from the *periphery of the Periphery* (pP) to the *periphery of the Centre* (pC). This is indicated by the top arrow from P to C. Galtung (1971: 83) describes a *harmony of interests* between pC and the cC, and between the cP and cC—indicated by the unbroken lines in the figure. He also describes a *disharmony of interest* between the pP and cC, and between the C and P—indicated by the broken lines between C and P. Cash crops such as coffee, cocoa and cotton are examples of this conveyor belt in action. Cash crops benefit people in the pC, who can buy cheap coffee, chocolate and clothes, and the owners of those companies in the cC reap most of the profits. Meanwhile people in the cP benefit from the agreements, while people in the pP often have little choice but to work long hours in terrible conditions for a very low wage, or worse. *Structural Adjustment Programmes* (SAPs), often linked with neo-liberal agendas, might be considered a further example of this theory.[11]

Figure 3.1 builds on Galtung's (1971: 84) diagram to illustrate the dynamics and power relationships within Galtung's "Structural Theory of Imperialism".

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[9]In some world systems theories such as Wallerstein (1974) use the word 'core' instead of 'centre', and include 'Semi-periphery' nations, representing expanding economics such as Brazil, Russia, India and China. The dynamics of the models still work in a similar fashion, and the addition of Semi-Periphery adds unnecessary complexity to this particular analysis.

[10]Leslie Sklair's conception of a powerful Transnational Corporate Class might be a useful way to conceive of the influential people in the centre of the Centre (this will be returned to in Sect. 3.2).

[11]Critics such as Pamela Sparr (1994) point out that non-industrial countries are growing food and produce goods for the industrialized countries, at the expense of their own people.

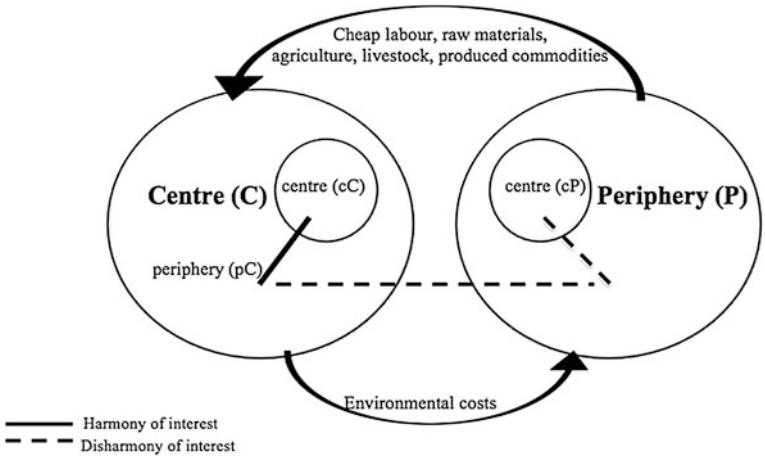

Fig. 3.1 Dynamics of Structural Imperialism. *Source* The author, adapted from Galtung (1971: 84)

Figure 3.1 has been adapted to recent research that shows 'environmental costs' flowing from the Centre to the Periphery—indicated by the lower arrow from C to P. Although Galtung's theory did not address environmental issues, more recent research such as the extensive work of Andrew K. Jorgenson and colleagues (e.g. Jorgenson 2006; Jorgenson/Clark 2011; Jorgenson/Givens 2014) builds on this and other world-systems and dependency theories. Jorgenson (2006: 687) posits a "structural theory of unequal ecological exchange" using the example of deforestation to make a case that "more-developed countries partially externalize their consumption-based environmental costs to less-developed countries which increase forms of environmental degradation within the latter" (704). The language of more- and less-developed countries is carefully selected. Jorgenson clarifies that this exchange, "partly a function of the historical legacies of colonialism," is not a "binary relationship".

Since Galtung wrote this paper middle-income countries like Brazil and China have risen in prominence on the world stage.[12] Instead of a dual separation between high and low income countries, one finds a continuum from high-income countries through high-middle, middle, low-middle and low-income countries. Jorgenson posits the uneven ecological exchange as taking place "cumulatively between relatively more-developed countries and less-developed countries" (Jorgensen 2006: 692). Jorgenson provides empirical evidence of a "core/periphery hierarchy". He observes that higher levels of organic water pollution, higher levels of infant mortality, lower levels of secondary education, correlate with higher percentages of export commodity concentration and higher levels of agricultural production. He

[12]These might be considered in terms of the 'semi-periphery' in Wallerstein's world systems model.

considers all these factors to be "largely a function of a country's position in the core/periphery hierarchy" (Jorgenson 2004: 280). These factors feedback into perpetuating poverty, population increases and environmental destruction, for example due to the instability caused by infant mortality, the lower levels of education and higher levels of pollution. Clearly, if the ecological crisis is going to be mitigated then the feedback looks perpetuating injustices embedded of the world system of production and trade will have to be disrupted and new more equal relationships developed.

Another impact of structural inequality on the global ecological crisis can be seen in the failure of countries to establish an international agreement and framework for mitigating climate change. Parks/Roberts (2010) argue that the reason climate negotiations have largely failed is connected to the injustice embedded in the world economy, which "condition a state's willingness and ability to participate in such arrangements." Parks and Roberts observe that "a growing number of developing countries have called for a recognition of (and/or remuneration for) a so-called 'ecological debt' that the North owes the South" (142). If high-income countries have consumed fossil fuels in order to build infrastructures and housing, then why should low-income countries have to pay the costs? Parks and Roberts suggest that "climate change negotiations must be broadened to include a range of seemingly unrelated development issues such as trade, investment, debt, and intellectual property rights agreements" (134). Negotiating on global climate change is likely to require "wealthy industrialized states to shoulder a significant part of the cost of the transformation in developing countries" (Held/Hervey 2009: 2). A "hybrid proposal" suggested by Pew Center for Global Climate Change would be to implement this through a mixture of "responsibility based on past and present emissions, carbon intensity and countries' ability to pay" (Parks/Roberts 2010: 152).

An everyday example will be useful for illustrating how these concepts tie together. Consumers in the periphery of the Centre may or may not know that a $5 cotton t-shirt is likely to involve sweatshop workers and cotton farmers working in near-slavery conditions, deforestation and the destruction of top soil, a significant amount of water consumption and carbon emissions from production through the transport from, for example, Brazil to China to Australia, and even its disposal. These connections are remote. The benefits are experienced by the people in Centre countries, for example in being able to purchase a low-priced t-shirt, work for a business involved in this production process, or receive profit from investments in companies involved. From a broader perspective one can draw distant yet cumulatively-influential connections between businesses and people benefiting from $5 t-shirts and ongoing social and ecological justice issues faced in Periphery countries. For example, the underpayment of workers in factories and on farms perpetuates poverty, and poverty as discussed earlier is linked to increasing populations. Furthermore, the production and consumption of the $5 t-shirt connects to ecological sustainability issues including climate change, for example as a result of the carbon based fuels to make and delivery the t-shirts, and the way that the unequal relationships between Periphery and Centre countries feeds into difficulties involved in climate change negotiations and action. Responsibility of the social and

ecological injustice represented by the $5 t-shirt is dispersed among powerful economic and political institutions, companies and investors, governments, citizens and consumers. A single person is powerless against them.

While the decision made by one consumer to purchase a $5 t-shirt is of minute consequence, when multiplied by a million or 100 million people it can be the fuel that perpetuates sweatshops and destroys ecosystems. The consumer's decision may or may not be informed of these broader social and environmental costs. He or she may justify it through a neoliberal lens that considers it part of the Periphery's path to development. He or she may be aware of the impacts but be constrained by the financial burdens of high-income countries (such as mortgages, school fees). Or he or she may feel too small to make any real difference. Alternatively he or she may wish to make more ethical purchasing decisions but not know of any particularly ethical options available. This is an example of what Kahn called the "tyranny of small decisions."

3.3.2 Tyranny of Small Decisions

In 1966, Kahn postulated a gap in the dominant economic modelling of supply and demand, in its prioritization of short-term desires over long-term interests. Kahn (1966: 23) describes it as an "inherent characteristic of the market" that had not at that time been identified as, in some circumstances, producing a "defective or possibly objectionable allocational result." In exploring tensions between "private wants and public needs,"[13] Kahn points out that decisions which are smaller in size, scope and time, for example, an individual consumer's purchasing choices, can collectively have a larger result that impacts on the individual in ways that he or she would not choose if presented the choice as a whole.

Kahn uses an example with personal relevance to him, which is useful for explaining the theory. Kahn lives in Ithaca, a city in upstate New York. Until 1961 a railway operated that was the "one reliable means of getting into and out of Ithaca in all kinds of weather" (26). Due to individual customer decisions to save time or money by flying or driving, the train service was no longer financially sustainable and was shut down. Kahn explains that his own "introspective experiment" is proof that at least one customer (himself) would have been willing to pay extra (for example an annual fee), in order to keep the railway running. Each person's choice to take a flight or drive a car "had only a negligible effect on the continued availability" of the railway, and therefore it would have been "irrational … to consider this possible implication of his decision" (26). Kahn emphasizes the "necessity of looking at the process in broader terms than does the market, and possibly substituting 'large' for piecemeal accumulation of 'small' decisions" (25).

[13]Kahn notes that this is the title of readings edited by Edmund S. Phelps rev. ed., Norton, New York: 1965.

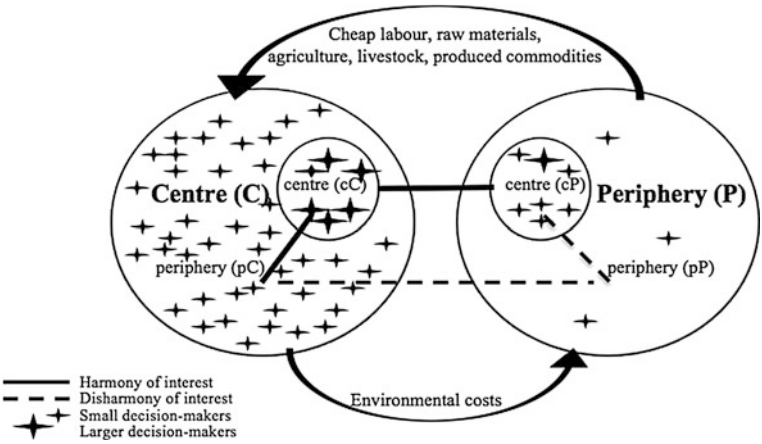

Fig. 3.2 The 'Tyranny of Small Decisions' maintaining injustice. *Source* The author, expanding Fig. 3.1

This broadening of decision-making can apply to individuals, for example consumers and CEOs, as well as decision-making by groups such as by governments of nation states.

Figure 3.2 builds on Fig. 3.1, using stars to represent the rough distribution of power that can be inferred by these theories.

In Fig. 3.2, the stars represent decision-makers, with larger stars representing decision-makers with a larger influence, and smaller stars represent decision-makers with a smaller influence.[14] The figure posits that the choices of people in the centre of the Centre have the most impact globally per decision, but a relatively small number of powerful people make these decisions. Decisions made by people in the periphery of Centre have less impact per decision but potentially have the most significant impact when joined together. People in the *centre of the Periphery* (cP) also have a large impact in perpetuating the oppression of the *periphery of the Periphery* (pP) for their own benefit. The pP have considerably less impact per decision, however they still have power (for example as exercised in the so-called Arab Spring).

The estimated distribution of power is supported by Sklair's (2002: 145) theorisation of a *transnational capitalist class* (TCC). Based on this theory, one could consider the large decision-makers in the Centre to be comprised of the four interlocking fractions: (a) "the corporate fraction"—shareholders and executives, people who own and control the major corporations; (b) "the state fraction"—"globalizing bureaucrats and politicians"; (c) "the technical fraction"—"globalizing professionals"—such as scientists, academics, and skilled

[14]Not larger in the sense of broader and longer term, but larger in terms of their impact on other people and on the planet.

workforce; and (d) "the consumerist fraction"—which includes the media, merchants and wealthy consumers. Through their money and influence these decision-makers have a greater power to maintain or change global structures than decision-makers with less money and influence.

An example of the power of this group is the scepticism toward *anthropogenic global warming* (AGW) that has developed "among laypeople and policy makers". This has been generated by a "loose coalition of industrial (especially fossil fuels) interests and conservative foundations and think tanks," assisted by "a small number of contrarian scientists", "conservative media and politicians" and "a bevy of skeptical bloggers" (Dunlap 2013: 692). Alternatively, if such a group was motivated to do so, they could use their influence to ignite enthusiasm for green technology, divestment from fossil fuels, and influence the political will for governments to implement policies to address socially and ecologically unjust structures.[15]

Environmentalist Tim Flannery observes that the abilities and costs of clean energy, such as wind and solar energy, are now comparable to coal and oil. In the way of its adoption are vested interests. Vested interests can be direct—for people such as CEOs' and shareholders' monetary rewards and dividends derived from businesses that profit from exploiting the planet (through fossil fuel industries, monocropping, deforestation for livestock farming, offshoring of wastes, etc.). Vested interests can also be indirect—for customers, civilians and governments for example allowing them to buy cheap oil and cheap food, via superannuation funds invested in these businesses, and via tax collected from the selling of such goods. For example, the Australian government and Australian people benefit from coal exports via tax the coal companies pay, via jobs the industry creates, etc., yet the impact of coal on the environment are long-terms costs that will be shared by all (see Pearse et al. 2013). Such direct and indirect interests are standing in the way of the personal and political will to invest in making changes in lifestyle, investment, policies, taxes etc., directed at addressing the global ecological crisis.

In respect to the global ecological crisis, the tyranny of small decisions can be observed as another factor standing in the way of polices to mitigate climate change. Held/Hervey (2009: 5) explain that it is "extremely difficult for governments to impose large-scale changes on an electorate whose votes they depend on, in order to tackle a problem whose impact will only be felt by future generations." They describe the issue as "short-termism," referring to the tendency for policy debates and implementation of policies to be limited by the short-term nature of political cycles. Politicians have to please their electorate in order to get voted back into power, incentivising governments to avoid implementing policies that may not be in the constituency's direct interests.

[15]This is not to say that people in the cC cannot ignite such enthusiasm themselves—one can certainly see the power of the people in grassroots movements advocating for these changes. The point is that the more influence a person has, the more difference that their everyday decisions can make.

Applying Kahn's tyranny of small decisions to environmental degradation, Odum (1982) makes a plea for less reductionist and more holistic approaches to research and decision-making. Odum considers the cumulative effects that the small decisions of individuals may have on the society or environment, reflecting briefly on the examples of air and water pollution, desertification, and management of fisheries. The phenomenon is far-reaching. The field of medicine has a tendency to focus on "single-cause and single-effect" with "modest emphasis on total body responses" (Odum 1982: 728). In academic research, Odum (729) points out that grants and tenure tend to be geared to projects that favour the short-term over the long-term, and specific outcomes over projects that impact on a broader level. This is understandable in terms of the 'small decisions', which benefit individuals in the short-term, however the result is a significant gap in the big picture.

The big picture is this: the unjust structures of the world system and the short-term orientation of politics and personal profit are obstacles to addressing the global ecological crisis. Galtung locates the unjust flow of human and natural resources at the level of nations, and sheds light on the historical context of these relations. The unjust flow of environmental exploitation stands in the way of climate change policies being successfully negotiated between countries. The unjust flows of natural resources and cheap labour from low- to high-income countries, perpetuates poverty in low-income countries and prevents their populations from stabilizing. This structural violence is maintained by small decisions made across many different levels and locations across global society. Kahn's identifies a gap in supply and demand economics that causes a separation between short-term and long-term motivation for decisions. It points to way that consumers, citizens, employees and investors everyday decisions feed into institutions and structures, skewing the supply-demand function of markets when it comes to longer-term outcomes. This interaction between small decisions and larger structures has led to the global ecological crisis. The final stage of the argument in Sect. 3.4 considers what insights this synthesis of theories may offer as to strategies for mitigating the ecological crisis and moving towards ecological peace.

3.4 Re-orienting Decisions Towards Ecological Peace

Section 3.3 examined the dynamic of multi-directional and multi-levelled interactions that are causing the global ecological crisis. This section explores how such interactions might be re-oriented towards a vision of ecological peace, in light of the insights offered by the above synthesis of theories. It will take an imaginative leap, considering a deep cultural shift toward holism that might help to motivate the re-orienting of decision-making proposed.

With the analysis from previous sections in mind, Figs. 3.3 and 3.4 explore the model from Sect. 3.3 with two snapshots in time: short-term and long-term.

Figure 3.3 posits that in the short-term the world system is very good for the *centre of the Centre* (cC), good for the *periphery of the Centre* (pC), and pretty

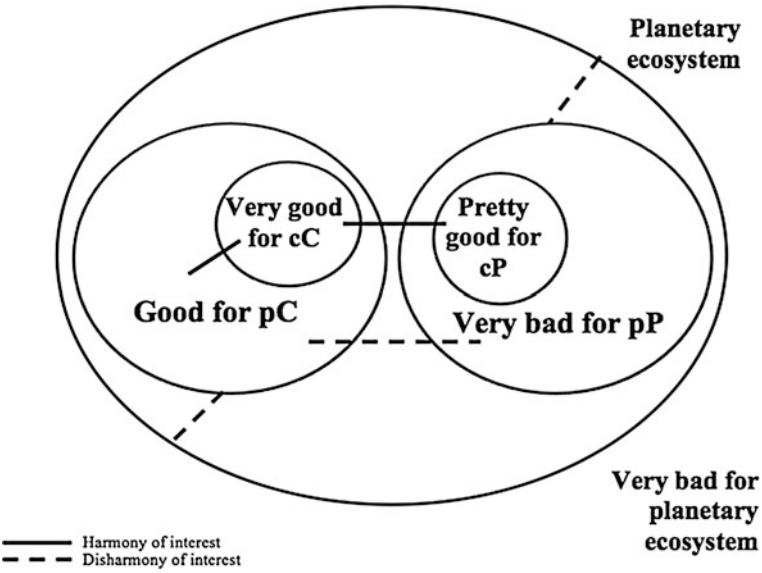

Fig. 3.3 Beneficiaries and benefactors in the short-term. *Source* The author

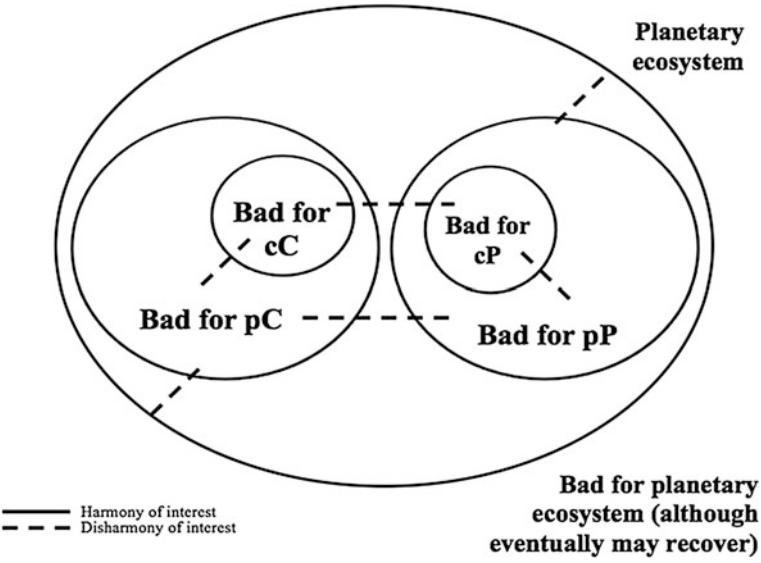

Fig. 3.4 Beneficiaries and benefactors in the long-term. *Source* The author

good for the *centre of the Periphery* (cP). For these groups, increases in production, increases in consumption and increases in profit, are good. This world system is also very bad for people in the periphery of the Periphery (pP), who are exploited

and live in poverty. Finally, this status quo is destroying the planetary ecosystem. Figure 3.4 posits that in the long-term, this world system is not in the interests of any parties, whose habitat and resources will be destroyed. These figures point out that it is in the interests of *all people*, including the world's most powerful (assuming they care about anyone or anything beyond themselves), that the world system evolves into one that is more sustainable and hence is also more just.

What can be done to change the world system? A common thread can be seen in the recommendations of Galtung, Kahn and peace scholars: a tendency toward holism. Galtung (1971: 88) suggests solutions to situations of structural imperialism lie in the "social totality." He emphasizes the need to explore "the totality of the effects of an interaction process" including the economic, political, military, educational and communication dimensions, as well as the cultural, social and psychological effects. Echoing Galtung and building on Kahn, Odum suggests that the key to avoiding the problem of small decisions lies in developing a holistic understanding of the context and consequences of decisions. Peace educator Reardon (1988: 60) sums up this view: "We must learn to see ourselves as a part of, not apart from, our planet and all of its inhabitants." In sum, bridging the micro and the macro, the local and the global, short-term and long-term, decision-makers must come to see how their small decisions accumulate to bring about global and long-term outcomes for Earth and all living beings.

This is an important pattern worthy of deeper consideration. The pattern is a connection between parts and wholes in time (short-term and long-term) and in space (personal and global). This pattern as applied in process philosophy, panentheistic theology, deep ecology and macro history (Clayton/Peacocke 2004), challenges the core metaphysical assumptions on which the current world system is based. Instead of assuming the self is an individual separate being, acting in its own self-interest, the pattern contextualises the self in a community of changing relationships. This view points out that, in the long-term, personal self-interest is also that which is in the best interests of the global community. In this view, the temporal self as experienced in bodily form is just one expression of the infinite Self. Such an understanding can be derived from the simple observation that one is inseparable—in time and space—from the rest of the universe. It leads to the understanding of an *ecological self*, inseparable from the ecological systems throughout which it cannot exist. It also leads to the understanding of a *cosmological self*, part of a unified story of expanding consciousness and creative evolution. This view is found in a growing body of scholarship (Swimme/Berry 1992; Tucker/Grim 1994; Birch/Cobb 1981; Daly/Cobb 1989) that suggests that a process paradigm, ecological worldview or a 'new story' can help to address the global ecological crisis.

What kind of world system might the efforts of more holistic decision-makers work to create? What would a just and sustainable alternative look like?

Figure 3.5 takes inspiration from Boulding's (1988) workshop on "Imaging a World Without Weapons", that considers positive images of the future to be like a magnet, attracting behaviour that toward the vision. In this model the author suspends thoughts on what should be considered 'realistic', and posits a system in

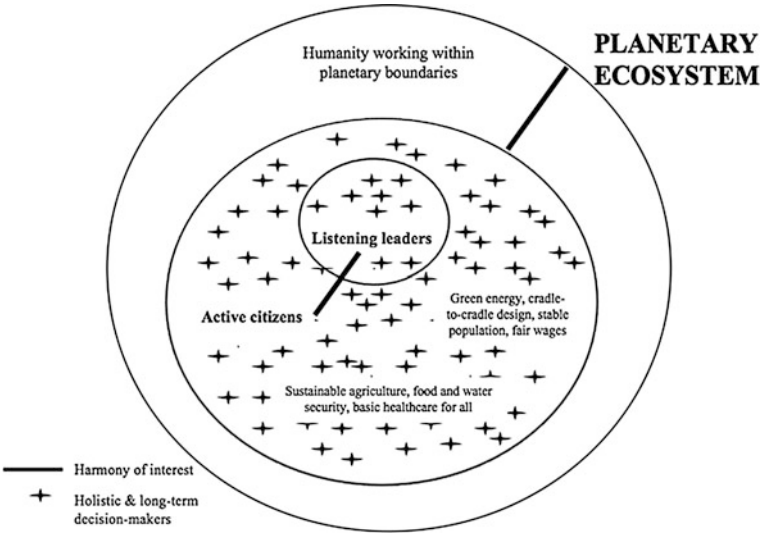

Fig. 3.5 An imagined just and sustainable world system. *Source* The author

which there would no longer be Centre and Periphery nations operating with unequal exchanges.

In this model people and institutions across the world would interact in ways that are in harmony with the planet's ecosystems. It imagines leaders who listen, and citizens who actively participate in civil society. In this model there is a harmony of interest between the listening leaders and active citizens, and a harmony of interests between humanity and the planetary ecosystem. It imagines the use of sustainable and localised agricultural techniques, food and water security, and education and healthcare for all people. It imagines green energy solutions replacing fossil fuels, and ecological designers creating ways that humans can live within planetary boundaries and in ways that Earth is better off for it (e.g. see Cowan/Van Der Ryn 1996; McDonough/Braungart 2002). These would be shared across the world without patents, in the name of equality, creativity and acting in the interests of the whole. As such the imagined model would not create new dependencies. Such a vision would see individuals acting mindfully, ethically and with empathy in all their interactions (e.g. see Kaza 2009; Rifkin 2009).

Placing all of the nations (whether currently in Periphery or Centre) in one circle does not infer a homogeneous society, but an equal one. An appreciation for the diversity of lifestyles and cultures, of different ways of being in the world, is an important part of process-based worldviews (Griffin 1994). All nations would interact within a level playing field, based on the principles of social justice, universal human rights and an appreciation for the intrinsic value of all living things. By seeing the other aspects of one's Self, it is possible to be motivated to act in the broader interests of the ecological whole.

The optimism espoused by the model stands in stark contrast to the assumptions of dominant rationalist economic and neoliberal political models. Those with the most power to change the system are those most benefiting from the status quo (in the short-term). Why would anyone help to change structures if it is not in their immediate personal interests? The author does not have space to consider this question in detail here. The fact that many scientists, politicians, activists and consumers are already directing their research, policy decisions, advocacy and purchasing dollars toward the aim of global justice and ecological sustainability, indicates that while it may seem a high ideal, ecological decision-making is not impossible to achieve.

What kinds of changes might this involve? A myriad of literature on social and ecological justice offers plenty of examples. It is worth mentioning a few.

First and foremost, in the centre of the Centre. Politicians and policy makers could focus on long-term outcomes and put into action national and international agreements on issues considered above. For example, policies aimed at slowing deforestation to levels that match reforestation, subsidising clean energy alternatives, taxing carbon emissions, a cap and trade scheme, etc. (e.g. see Held/Hervey 2009). Governments could place limitations on the concentration of wealth and power in the hands of few. For example, by cracking down on tax havens, putting a limit on the size of corporations, enforcing international minimum and maximum wages, and ensuring that lobby groups and media are not interrupting democratic process (e.g. see Brand 2014). CEOs could invest in green engineering of their production and distribution processes, ensuring that all people are paid fairly and the planet is not exploited in any related processes (e.g. see Hart 2007). Academics might collaborate on interdisciplinary projects aimed at practical outcomes in mitigating the ecological crisis.

In the periphery of the Centre, citizens could promote such policy priorities by being active in expressing the care for the interests of future generations, even where it requires small personal sacrifices. As consumers they could take into account the social and environmental ethics when making purchases. As employees they could choose only to work for companies that are socially and ecologically just. In the centre of Periphery nations, individuals could crack down on corruption and enact laws and regulations to prevent the exploitation of the environment or of people. They could insist that natural resources such as rainforests, which provide ecological services to all of humanity, are maintained and paid for via contributions in higher-income countries (Held/Hervey 2009: 15). Poverty in the periphery of the Periphery could be addressed through education, health care, contraception, a fairer sharing of global resources, and the repayment of ecological debt by higher-income countries. People in the periphery of Periphery nations could then consciously choose to stabilise global population by choosing to have less children. An average of two children per family might become a global norm, a choice made by individuals in the interest of the global whole.

All of the above transformations could be achieved by spiral-upward process of (1) broadening the scope of individual decision-making to take into account of the interests of the whole; (2) individuals working to develop mediating structures to

represent their collective political will toward common good and to help coordinate specific awareness and action campaigns for specific institutional, legal and cultural change; (3) influencing the reform of political, legal and economic institutions in ways that will feedback into step (1) in cultivating further decision-making and political will aimed at developing a more just and sustainable world system. Each step of such a transformation calls for a combination of the intertwining personal and political will toward long-term change. People across all sectors could encourage each other to put living beings and the planet before short-term profits, to celebrate altruism and shame people who have exploited other people or the planet in the name of personal wealth. A source of hope for such a holistic re-orientation of decision-making can be found in process scholarship crossing a broad range of disciplines, and the related intellectual movement that is attempting to reimagine and reinvent education, culture, society, art, health, philosophy, theology, psychology and nature.[16]

There is no space to explore, analyse, compare and evaluate the many efforts across the world working toward ecological peace. Suffice to say that the above sampling of ideas reflects some possible creative steps aimed at that direction. The point to be made is that if humans have the motivation to do so they can confront destructive social, political and economic institutions and evolve the world system to be more peaceful, socially just and ecologically sustainable. Strategies for motivating and implementing change toward ecological peace and developing integrated economic and political models to support it, are rich and exciting areas for further research and activism.

3.5 Conclusion

This chapter has explored two important aspects of the global ecological crisis: What is causing the crisis? Who has the power to solve it? Analysing theories and examples of structural violence and small decisions has pointed to the collective power of people to maintain or change institutions, industries, cultures and everyday actions that are causing the global ecological crisis. Galtung's "Structural Theory of Imperialism" provided a historical framework through which to understand the connections between issues of social and ecological justice and the world system. Kahn's "Tyranny of Small Decisions" shed light on the dynamics of everyday decisions that maintain those structures. The synthesis of theories pointed

[16]Process thinkers were addressing these questions at the "Seizing an Alternative: Toward an Ecological Civilization" conference in June 2015, hosted by the Center for Process Studies, in Claremont CA. This conference brought together Bill McKibben (creator of 350.org) with Vandana Shiva, Mary Tucker Evans, Herman Daly and the world's leading process thinkers including John Cobb Jr., David Ray Griffin, Catherine Keller, Phillip Clayton and Arran Gare. See conference program, at: https://www.ctr4process.org/whitehead2015/wp-content/uploads/2015/05/WH2015_online-program.pdf (26 September 2015).

out that in order for these solutions to be implemented, connections between the short-term and long-term, between the personal and global, must be made. Suggestions that such a shift might be motivated by a change in worldview or a 'new story' were very briefly considered along with some well-known examples of the types of decision-making that are likely to help mitigate the global ecological crisis. To sum up: addressing the crisis calls for governments, corporations and civilians to put global needs before personal interests, and to evolve structures in the interests of all. What the world system might look like through this shift in paradigm has been imagined. Unpacking positive visions of the future in greater detail, and experimenting with the ways this shift might come about, are questions for future papers and further research.

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