
GLOBAL ISSUES

THE LOGIC OF CULTURAL SUICIDE AND APPLICATION TO CONTEMPORARY GLOBAL STRATEGIES: DRAWING FROM MODELS IN PSYCHOLOGY AND BIOLOGY

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This piece offers a preliminary test of the hypothesis that there are processes of cultural 'suicide', that are analogous to individual suicide or genetic suicide. It attempts to offer definitions and typologies of this phenomenon for future measurements and analysis within the context of theories of cultural change and processes of collapse and seeks to determine whether certain cases of cultural extinction or rapid transformation could be reclassified or classified as cultural suicide. If this is a valid category for social processes, it may offer a logical explanation for what appears to be current choices of cultures in regard to strategies for human survival that are environmentally unsustainable or that appear to invite potential wars that threaten human holocaust. Analogies with other disciplines also suggest that in some cultural groups some processes of self-destruction may be at work that facilitate collapse and rebuilding or extinction as part of a cultural dynamics within groups of cultures. This could explain some current behaviors that are otherwise described as 'irrational'. Nevertheless, we are only at the very early stages of modeling, explaining and predicting such behaviors. Opening up this topic also points to many of the unresolved paradoxes and difficult measurement issues that social sciences need to confront.

Keywords: *suicide, culture, identity, determinism, classification, role theory, social change.*

Introduction

A number of works in social sciences and in popular culture over the past several years have viewed the 'progress' of modern societies not as a path to a better future but as a kind of 'madness' moving towards a catastrophic end of 'Mutually Assured Destruction' (the 'M.A.D.' policy of nuclear deterrence that has already bankrupted Russia and that threatens global holocaust) or of global climate change that could wipe out the human species along with most others. In a recent controversial article, this author and a co-author noted that current globalization has created a paradoxical 'prisoners' dilemma' deadlock that also seems to lead, deterministically, to a doomsday scenario of social collapse, based on current social science models (Lempert and Nguyen 2011).

Anthropologists and others criticize such deterministic models of 'doomsday' scenarios as denying human ('free') choice. They argue that there is a way out. They note that humans often negotiate their way out of deadlocks. They note that the recognition

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of being caught in a prisoners' dilemma has led to bargaining/negotiation and laws to enforce protection of the commons (in water law and resources law), and could similarly protect humanity on earth and stop system collapse (Hardin 1993). Rather than accepting a deterministic view that behaviors are constrained, they claim that whatever happens must be viewed not as social science inevitability but as a human choice.

In examining such modest issues as survival of the human species and of our planet, we find ourselves also at the center of the debate over deterministic (and probabilistic) explanations that look at behavior at the level of societies versus the question of individual free will. Right at the heart of that is an intriguing social science question that blurs the line between explanations of culture choice and of deterministic models. It is this: *If societies can make a choice to overcome paradoxical deadlocks or ideologically or institutionally determined behaviors that could mechanically lead to destruction or extinction, might there also be a choice and/or determined or probabilistic logic of cultural suicide, analogous to what we observe in the case of individual suicide?* If so, can we do a kind of 'crime scene investigation analysis' of past cases to 're-open' and 're-classify' them as cultural suicides and then see if we can find the same motives and opportunities, today (or ways of intervening before it is too late)?

This author, and others, suggest that some societies, with full information on risks and consequences of different environmental and economic choices and with full benefit of past experience and direct observations, are not only choosing 'irrationally' but actually seem to be accelerating a headlong rush to harm. Political scientist Chalmers Johnson, for example, introduces a recent book describing choices that the U.S. is currently making as 'The Suicide Option' (Johnson 2010) that will lead to economic collapse, hardship, and possibly absorption by another empire or culture. One can search the internet today to see contemporary policies of other nations also being described by economists as forms of 'national suicide'.

Theories of collapse have now begun to capture the imagination of scholars in a number of fields, in an attempt to try to offer predictions or warning in ways that also suggest that the question of suicide is now an appropriate one (Diamond 2005; Tainter 1988; Lempert 2012). Though the word 'suicide' is not used, the historic cases that have been studied are not only of 'collapse' but of extinctions as well as transitions of urban cultures back to rural lifestyles in what could be termed a cultural 'loss' or 'regress'. In many cases, cultures had the technology to foresee the destructive results of their behaviors but seemed unable or unwilling to learn and apply that learning. Social scientists have tried to model why individuals and collectives would continue behaviors that they, at some level, recognize as leading to destruction or loss, when they could act to avoid them or improve their long term conditions but have yet to test whether a 'suicide' model might have explanatory power.

Social scientists, since the beginning of the social sciences from the time of Durkheim, have looked at the self-destructive act of suicide, though only on an individual level. They have offered different logics to explain when suicides occur based on the assumption that there are rational explanations for these behaviors (Durkheim 1897). The way to extend that work is to test whether the same explanations might apply at the level of cultures (broadly defined as human groups with specific adaptations to particular environments that are passed down through generations, with languages often serving as markers for individual cultures) and/or at the level of complex societies (groups

of cultures) by applying the works of both psychological anthropology and of evolutionary biology that are used in physical anthropology.

Psychological anthropologists, in looking at the 'dark side' of human nature, often reverse the assumption that is the basis of most contemporary social science (that human history assumes continued teleological 'progress'). They start from a premise that things are the way they are (including continuing human activities of war, violence, inequality, and corruption) not because of accident or inability to choose alternatives (that are the usual explanation of these phenomena, describing them as failures or abnormalities). Instead, they claim that things are the way they are because 'people want them that way'¹. As psychologists and anthropologists have long studied suicide; a choice that often seems to be against self-interest but that seems to have its own logic, one can similarly adapt their question to ask, is group, 'cultural' suicide a choice with its own logic?

Natural sciences like population biology have raised this question for species, but have yet to apply their theories to humans and human cultures. Their approaches and models can also be useful, though they also raise challenges as to what levels of analysis to apply and as to what constitutes a satisfactory explanation. Like psychologists, their approach is also to try to link suicide in nature to a rational logic that favors survival over the long run, even if it is destructive in the short run (as paradoxical as it may be). If an evolutionary logic can be applied to culture, cultural suicide may be a logical choice that developed as a species survival mechanism that weeded out certain cultures or cultural traits, even though it may now be leading to the opposite, where the dominant cultures might now be on a suicidal path. This innate drive for self-destruction among cultures that may be poorly adapted in some way, may even be stronger than an innate inability to perceive risks or dangers that are leading to current harms. We can ask whether such logic might fit cultural behaviors as part of an overall 'system' of cultural selection that might have developed to benefit the human species.

This article seeks to open up those questions as well as the different implications of asking them. For example, if we can start to understand cultural 'suicide' what are the implications for human cultural evolution and the idea of culture change and human 'progress'?

This piece offers a preliminary test of the hypothesis that there are processes of cultural 'suicide', that are analogous to individual suicide or genetic suicide. It attempts to offer definitions and typologies of this phenomenon for future measurements and analysis within the context of theories of cultural change and processes of collapse. It seeks to determine whether certain cases of cultural extinction or rapid transformation could be reclassified or classified as cultural suicide. If this is a valid category for social processes, it may offer a logical explanation for what appears to be current choices of cultures in regard to strategies for human survival that are environmentally unsustainable or that appear to invite potential wars that threaten human holocaust. Analogies with other disciplines also suggests that in some cultural groups some processes of self-destruction may be at work that facilitate collapse and rebuilding or extinction as part of a cultural dynamics within groups of cultures, and this could explain some current behaviors that are otherwise described as 'irrational'. Nevertheless, we are only at the very early stages of modeling, explaining and predicting such behaviors and of establishing definitions, boundaries, and forms of classification for study of this phenomenon. Open-

ing up this topic also points to many of the unresolved paradoxes and difficult measurement issues that social sciences need to confront.

The article starts with current models of culture change to see where cultural suicide might fit. It looks for an explanatory logic of suicide and/or collapse as a mechanism of social change. It then moves to define the behavior of cultural suicide as a way to try to identify and classify cases for study. Next, it looks at analogies in biological science and psychology and the explanations that are given for suicide to see if such logic could apply to cultures. The piece then suggests cases that could fit if the parallel holds. It begins the detective work of reopening the files to reclassify such cases as 'suicides'. Finally, it notes the implications, paradoxes, and difficulties for future work.

Background: Fitting Cultural Suicide into Models of Culture Change and Offering Explanation of its Mechanisms

If cultural suicide is a useful concept, it should fit somewhere into models of culture change and should also offer some explanatory logic of mechanisms.

Where Cultural Suicide Might Fit into Models of Culture Change or Collapse

There are several models used in social science for culture change and almost all scholars recognizes culture change along different pathways, but there is no real agreement on the framework of analysis or the level of analysis of culture change. Many approaches to culture change seem to be random or to rely on case studies. Social scientists study genocide and imperialism, resulting in the death or destruction of cultures as a form of competition (and 'murder'), but do not seem to recognize self-inflicted destruction as something beyond error or misfortune. Others think there are natural cycles of life and death of cultures or transitions rather than self-inflicted death. Since psychologists do recognize suicide at the individual level and evolutionary biologists increasingly recognize it at the genetic or species level as a way of explaining behaviors or change, one would think there might also be a place to fit cultural suicide into a framework for culture change and to propose an overall culture change framework.

In a recent article, this author suggested a framework of culture change that opens the door for adding the category of cultural suicide in an analogy to individual suicide (Lempert 2014). This author offered a new theory that cultural adaptation follows two overall logics: environmental adaptation or evolution (which has long been recognized in physical anthropology) and adaptation to certain cultural 'roles' in relation to other cultures taken together as groups, in a way that is analogous to individuals taking on and changing roles within fluid human groups (Benne and Sheats 1948). That theory, by analogy to individual behaviors in groups, opened the door to examination of suicide of cultures. Cultural suicide might seem out of place if offered as another category or theory or mechanism of cultural change on its own, but it would fit appropriately into a framework of culture change that includes group processes and hierarchies (including genocide) as well as evolution. This is because individual suicide is, itself, considered to be both a natural phenomenon (adaptive failure of certain traits; one of the categories of suicide suggested by Durkheim, called 'anomie') and part of group processes, for reasons of sacrifice, ego, or fatalism (the three other description categories of individual suicide suggested by Durkheim and described further, below) (Durkheim 1897).

This approach builds on previous attempts to describe culture change (or collapse and death) as an evolutionary process and also adds a new facet. There have always

been attempts to apply Darwinian evolutionary models to cultures including by Darwin himself (Darwin 1859). Nevertheless, debates have continued as to whether to apply Darwin's idea of adaptive radiation to environmental niches (Sahlins 1960) or to see human cultural evolution as linear and teleological progress (Morgan 1909). Perhaps in discomfort with science, itself, many contemporary anthropologists abandon the idea of evolution altogether and substitute the idea that the human mind itself makes culture and shapes the environment to fit, in a way that reverses the causality and takes a pre-Darwinian view (in much of contemporary social and cultural anthropology and other social sciences). In other social sciences, models and mechanisms of competition processes incorporate aspects of (evolutionary) selection by competition or of roles, including hegemony leading to assimilation, dependency, and extinction (genocide) (Frank, Cockroft, and Johnson 1972).

Alongside these approaches have been studies of cultural diffusion (Rogers 1983) – a process that has no clear biological analogue other than perhaps viral or mitochondrial DNA incorporating itself into existing organizations to change them, and studies of convergence of certain social forms driven by certain levels of technology. The latter was a popular analytic tool until the end of the Cold War between the U.S. and the Soviet Union, that may now be reappearing again (Duncan 2014).

There have also been several cyclical models of rise and collapse based on growth cycles and other measurable cycles ever since Marx introduced the idea of change as an autonomous process of cyclical 'growth' or transformations to 'dialectical opposites' (Marx 1867) that would include destructive processes (Turchin 2003; Korotayev, Malkov and Khaltourina 2006; Spengler 1928; Sorokin 1937; Lempert 1987 [1980] and later works). Other works on culture change have introduced demographics as an explanatory variable to describe these cycles (Malthus 1886) or to spur transformation (Boserup 1981). These exist as independent frameworks of analysis into which an idea of 'suicide' might or might not fit.

Part of the problem in this subfield of 'change' has been in defining 'culture' as well as in defining 'change' or collapse. What is stability/homeostasis and what is 'change'? In order to have theories of change or even to define 'cultural suicide', we need clarity on culture. In the space of this piece, it must suffice just to acknowledge the need for more clarity.

Dynamics of Change Processes: The Underlying Logic of Social Change and Social Suicide

If 'cultural suicide' exists in the same way that individual suicide and 'mass suicide' (not fully at the level of cultures but of cult groups or communities like the Jews of Masada), there should be a level of study and a framework in which to offer an explanatory logic.

Physical anthropologists recognize that different hominoid species have disappeared in the past two million years as modern humans evolved. The assumption is that they were not well adapted and possibly that some were killed in competition with modern homo sapiens in the same way that genocide continues between cultures today as a human reality. The emergence of cultures is often seen as an evolutionary process that allows for human adaptations through changing social and technological practices that are faster than human biological evolution, with some similarities. Though there is still disagreement as to how 'plastic' cultures are and how quickly identity and culture

can adapt in the face of environmental changes, the process of cultural adaptation is one that has been described to include both successful adaptation (as an independent or forced choice, through analysis and learning or simply through trial and error and acceptance of advantages) or failure (collapse or loss of competitive position that leads to restructuring). Thus far missing in this scheme is the idea that cultures, or different pre-humans, might have chosen, or that cultures could choose, today, to go through a process of destruction (suicide) in order to accelerate the overall human adaptation process. Biological explanations suggest a failure of certain genes or traits to be adaptive as a competitive loss, but it has been hard to link genetic or trait failure to suicide, let alone a theory of cultural suicide. Moreover, though there is a logic that is offered for failures in evolutionary biology, it is often difficult to 'explain' these failures as something other than random without projecting some kind of value on processes that are seen as value neutral.

Part of the reason that social and cultural anthropologists have not yet offered a similar kind of logic that would include cultural suicide may be the result of an ideological or religious barrier to doing so. There appears to be a presumption in social and cultural anthropology that modern industrial societies (as well as other contemporary cultures that are their 'modern' versions) are all on a trajectory of 'progress' in which reason and free will have trumped behaviors driven by those base instincts found in past societies or in the animal kingdom. In a sense, this belief may be a modern expression of Christian theology (in which suicide is a 'sin' and in which human societies are an exception to natural laws that apply to others) in opposition to evolutionary thinking. There may be a subconscious religious pressure to accepting a 'grand design' of nature that does not allow for accepting that cultural suicide of 'advanced' cultures might be part of such design.

Though linear theories of evolution or social evolution are no longer the norm, there are still widespread assumptions about progress; that humans move 'forward' (Lempert, 2016). This is despite the reality that the human and primate record is also filled with evidence of various extinctions, both of anthropoid species and of cultures. Evolutionary history, including of cultures, is one of dead ends, rediscovery, and other dead ends.

Culture failure is generally described today a result of some element of randomness or mistake in human choice that can be overcome with better information and reason. Jared Diamond in his recent book on 'collapse' used a Christian religious argument to suggest that people just made a 'bad choice' in societies that collapsed and did not see what they were doing; inferring that certainly industrial peoples today can learn and avoid collapse (Diamond 2005). Had Diamond started with a premise of evolution and natural law explanations, however, he might have described the same collapse phenomenon in a very different way. He could have replaced the idea of 'poor choice' with 'suicide' by arguing that 'collapsing' cultures chose ideologies or incentive systems that forced a preservation of failed beliefs and that led to either extinction or rapid population decline and change in ways that prevent the re-examination of beliefs or ability to change a culture's 'deep structure' under usual conditions.

Several social scientists have argued that certain cultural structures and ideologies rigidify cultures for the very purpose of preventing change on their key dimensions (Weber's 'rationality' 1947; Milgram's studies of 'obedience to authority' 1974; Yablonsky's 'robot-pathology' 1972; and even Durkheim himself in the 'division of labor'

1893), note the psychological propensity to ‘perseverate’ past behaviors despite changed conditions, or to choose irrationally under conditions of social pressure, fear or stress. Collectives should have a rationale to favor survival, but psychologists studying suicide suggest that the ‘collective’ is the community of all units, together, and not the individual unit that can be sacrificed for the larger, whole. If cultures are also units filling ‘roles’ in larger collectives, as this author's recent theory suggests (2014), then we could shift the analysis and suggest that the survival rationale for the ‘collective’ may not actually be at the level of the individual culture, which could be designed to self-destruct, but for the overall collective of human cultures or even the eco-system. In that case, stripping away a theological belief and shifting a focus to a different level transforms ‘errors’ into determined outcomes of self-destruction that cultures have deliberately chosen through processes of denial or obedience in face of reality. The complexity of how cultures resist change at the institutional and ‘deep structural’ level is also a different level of analysis from the individual psychological level of decision-making.

In other words, in order to test this logic – to see if collective denial that current practices lead to collapse and adherence to self-destructive ideologies may be a form of cultural suicide, and to see if the collapse of the culture that has based its survival strategy on adherence to these beliefs by reinforcing them in different social structures might benefit humanity – we would need to start with the premise that evolutionary biologists use. That premise is that there may be deterministic processes at work by which societies making such choices not only self-destruct but that such consequence actually serves a ‘beneficial’ end for their eco-systems and/or for the cultures that have replaced them or have arisen from their collapse.

How would evolutionary biologists apply such logic and then analogize it to culture (Lorenz 1982; Smith and Price 1973)?

Biologists have recently been examining the idea of species suicide (Parvinen 2005; Gyllenberg, Parvinen, Dieckmann 2001), demonstrating that a specific trait that is maladaptive could destroy a species. A trait leading to abnormal violence could allow an individual to amass resources and destroy its competition in the process, in ways that would also destroy the whole species. One might analogize this to a cancer cell that destroys its host body or a virus that destroys all of its hosts. Though biologists do not make the analogy to culture, one might suggest that a particularly violent cultural trait that promotes competition over trust and cooperation or one that quickly absorbs resources could seem successful in the short term but would lead to the culture's ‘suicide’. Moreover, the species and eco-system would benefit if this trait quickly disappeared before it destroyed the eco-system. This result goes much farther than a simple ‘cycling’ of populations, rising and falling in competition with other species (Hardin 1993; Rankin, Bargum, Kokko 2007).

As one recent study described the process, ‘[s]pecies level selection can thus act as a “conflict limiting” mechanism if species that have evolved high levels of conflict are driven extinct sooner than species in which conflicts are milder’ (Michard 1999, cited in Rankin and Sepulcre 2005). This may be a corollary to theories about the evolution of cooperation (Axelrod 1984).

Social science analogies currently suggest cultural collapse as similar to ‘fire cleansing’ of a forest (Homer-Dixon 2006), using terminology that suggests some cultures collapse because they ‘exhaust their design’ (Toynbee 1956; Tainter 1988) but

without calling this 'suicide' or suggesting the mechanisms at work, though there is a clear parallel to the biological study of suicide.

While biologists also discuss individual suicide as a decision that promotes the group as a whole and call this 'inclusive fitness', suggesting that individual suicide does have an overall biological 'function' of promoting the genes of the species, there has not yet been an attempt to suggest that sub-groups within a species might practice this for the benefit of the species or that certain species might sacrifice for the benefit of a genus. But we already do find this work in Durkheim's study of suicide at the individual level.

Among the biologists, there is still a debate as to the level at which this 'suicide' might be operating; at that of the trait and individual (Haldane 1932; Michard 1999) or at some higher species or eco-system level (Williams 1966). The choice of level of analysis that confronts the evolutionary biologists has similar parallels in social science that will make study of the phenomenon difficult to fully describe and probably impossible for now at the current state of social science.

- Is cultural suicide, if it exists, an individual choice (a 'meme' of a social idea) that fails? [If one uses a genetic or medical model of pathology, this is what one sees.]

- Is it a larger social choice that fails (an institutional or ideological system and strategy that becomes maladaptive but also cannot change)? [If one uses a deterministic model of social structures that replicate themselves, this is what one sees.]

- Is it just a random failure of decision-making processes and learning? [If one uses a prisoner's dilemma model and learning/choice/adaptation/negotiation model, this is what one sees.]

- Is it part of a logical design of biological system rejuvenation and overall adaptation processes? [If one uses a contemporary genetics model of evolution, this is what one sees.]

- Do we need to consider cultures in groups of several cultures in order to understand how they change?

There does not seem to be much breakthrough in social sciences in linking different levels of analysis since Graham Allison looked at political choices in terms of these basic interactions at the level of the individual or institutions or ideology or collective society (1971).

Defining the Phenomenon of Cultural Extinction: Establishing the Framework

Assuming that cultural suicide does exist and may serve some kind of evolutionary function, studying it requires defining the phenomenon and trying to distinguish 'suicide' from other forms of cultural 'death' before trying to classify cultural suicides into types. Given that the study of culture itself is still at an early stage, there are definitional and boundary problems, but it is still possible to establish preliminary classifications for study that distinguish cultural 'death' and 'suicide' from other forms of cultural death.

Definitional Problems

While there are intriguing and playful questions on what which deaths can be classified as 'suicide', anthropologists are still puzzling over some of the even more basic problems of trying to determine cultural 'life' and 'death'.

Though linguists have used language as a marker of culture and of adaptations to environments that can take 1,000 years to evolve and others simply look at cultural

identity and continuity today over a span of three generations, there are still disagreements as to what constitutes culture and what determines 'equilibrium'. Some anthropologists today, for example, seem to equate culture with empire or ideology in the way they define 'socialism' as a culture and avoid looking at continuities of traits or forms of behaviors among specific ethnic groups like 'the Russians' or 'the Vietnamese' that have continuities over longer time periods. Even the idea of language as a cultural marker is subject to challenge as rural populations become 'urban cultures'. If cultures move through roles relative to other cultures in groups as this author's recent theory postulates, or even cycle through these roles, are the ethnic groups still the same culture when their role changes? We use 'markers' like language to define a culture, but it may be the other way around, with the language just an artifact and the culture defined by the geography, economy, technology and relative role in relation to other cultures in groups of interacting cultures. Does the change of a cultural role imply the 'death' of the culture or its continuity? If a practice rises and dies out within a generation, such as Stalin's or Hitler's death camps in 'Russian' and 'German' culture, is that a feature of the culture or just an aberrant, self-extinguishing behavior?

The consensus within anthropology today appears to be to accept the linguistic marker as the basis for distinguishing a living culture, with other practices that last more than three generations and that sub-differentiate as subcultures. This at least offers some agreement on how to identify cultures that are alive.

As with individual suicide, that has proven to be a useful classification, there are definitional problems in distinguishing 'self-destructive' behaviors and even 'death' that can be extended to cultures. For example, once the health risks (but not certainty of death of all users) are known for smoking or other substance abuse and are linked to death, are these suicidal behaviors? By analogy, then, is cultural addiction to fossil fuel or nuclear energy or imperial expansion (given that expansions are ultimately self-limiting) a culturally suicidal behavior if the science 'proves' its link to collapse? Is playing 'Russian roulette' a suicidal behavior? How do we distinguish between 'suicide' and other known psychological phenomenon like misperceiving risk, gambling, and increased vulnerability? How do we measure 'knowledge' and 'recognition' that certain strategies will lead to collapse?

Cultural 'Death'

With a tentative definition of cultural 'life' we can look to define the cultural change that results in 'death' (sudden destruction that is a prelude to change) and try to distinguish it from 'evolution' (constructive/peaceful change processes) and other kinds of changes, before then trying to distinguish 'suicide' from other forms of cultural death. If we are able to make such distinctions using objective criteria – and it appears we can – then there seems to be an explanatory value to these categories. We can then follow this by looking at potential types of cultural suicide (with analogy to psychology and biology) that might offer cases and explanations.

In doing this, we are using both legal and biological terms in application to cultural phenomenon. 'Suicide' combines two types of measures: a biological measure of 'death' (with biological and legal definitions), an observable act or instrumentality by the sufferer of the death (legal definition), and a volitional measure of the actions to cause the death (legal definition).

There is already a good comparative example of cultural ‘death’ using these biological and legal terms. It illustrates how both are used as well as the difficulties. Anthropologists have accepted the international legal definition of genocide, established by the international community in the late 1940s: acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group (U.N. Convention, 1948). The lawyer who coined the phrase, Raphael Lemkin, further defined cultural death as: ‘disintegration of the political and social institutions, of culture, language, national feelings, religion, and the economic existence of national groups, and the destruction of the personal security, liberty, health, dignity, and even the lives of the individuals belonging to such groups’ (Lemkin 1944).

This current definition, that is agreed upon by the international community (but rarely enforced) includes destruction of cultural practices (political, economic and social) in addition to physical death, but there is disagreement (or perhaps deliberate blurring) as to what constitutes ‘change’ or ‘transition’ that represent free, informed, consensual choices without pressure or interference (these are also legally measurable standards) so as to constitute cultural ‘death’ without physical death. Many social scientists (who are not immune from political influences) seem uneasy linking the biological measure (physical death to a genetic population) with social science measures (practices that are passed on through generations).

Nevertheless, we can posit some of the elements of the definition of ‘death’ already from experience with the international law of genocide as including the following sequence:

- a rapid, accelerated decline (a term that needs to be better specified) in population or living standards of the population;
- of a culture that is sustainable or could be sustainable without such a decline OR that can no longer continue in its current form that it believed to be sustainable (here, we need more clarity, too; probably in terms of number of generations for a culture that has been an expansionary empire); and
- that leads to change such that it departs from its earlier patterns with regard to neighbors and technology.

Table 1, below, shows how these elements can help to distinguish cultural death from evolution, from non-viability (a culture that never forms or is still-born, such as a cult), as well as from natural cyclical processes that occur repeatedly within a culture and are not a sign of death. The types of changes that occur can also be defined as adaptation, extinction, annihilation, assimilation and absorption with columns testing and denoting each of the elements.

This categorization does not solve every problem. Cultures are always changing and sometimes radically. Is the transition from rural to urban a ‘death’ if populations increase? What about the reverse, if populations decrease but there is a nationalist revival (such as the case of the Khmer Rouge in Cambodia that some classify as ‘genocide’ but others see as cultural protection and revival)? What if populations decrease and practices change but a culture becomes more sustainable? This may be a ‘collapse’ but is it a ‘death’, a death and rebirth/rejuvenation, or just a non-evolutionary adaptation? In other words, is collapse really suicide or just a partial reaction to population pressures, since empires do not really disappear when they collapse (*e.g.*, Italians, Chinese, Mayans, Khmer, Mongols)? Is an unsustainable culture committing ‘suicide’ or is it simply fol-

lowing an inevitable cycle of collapse that should be seen as just a longer cultural process that is a natural part of a culture's long-term life?

Table 1

**Distinguishing Cultural Death from Other Cultural Processes:
Types of change phenomena**

Classification of Cultural Process	Definition			Indicative Types of Changes
	Speed of Decline or Change	Established Durability of the Culture?	Change Occurs?	
Volatility or Cycling Processes	Rapid	Yes, Long Term	No	–
Evolution/Transformation	Slow (Not a Decline)	Long Term continuous transformations	Yes	Adaptation
Non-Viability	Rapid	No, Initial, Non-Established	Extinction	Extinction
Death	Rapid Decline	Long Term before decline	Extinction or Transformation	Extinction/Annihilation; Assimilation; Absorption/Changed Role in a Group of Cultures

It is easy to distinguish the case of Burmese cultures like the Kachin that go through cycles of prosperity and collapse that also may change their relative position with their neighbors in a cycle (Leach 1954) as fitting the ‘cycling process’ category in the table. But this becomes more problematic for cultures that may cycle through roles, like that of dominance and empire, as a natural process.

These questions do not make the table invalid for making distinctions but they do point to the need for further refinements.

The Missing Link in a Theory of Culture Change: Distinguishing ‘Cultural Suicide’ from Other Types of Cultural ‘Death’

Having distinguished cultural death as a phenomenon, we can try to distinguish at least three different kinds of death (natural death, genocide and suicide) using legal definitions of causality that relate to such deaths (natural causes, unnatural causes by another culture, and unnatural causes by self-volition).

Table 2, below, offers these classifications as well as lists some of the mechanisms and suggests the current descriptive categories that might explain or offer a logic for the deaths.

In fact, when we use the word ‘suicide’ we are partly dealing with a term that itself needs to be better defined to allow for a kind of ‘forensic’ crime scene analysis in order to determine not only whether a death is ‘natural’ but how we assign volition of different actors in contributing to the death.

Table 2

Distinctions of Forms of Cultural Death

Classification of Cultural Death	Definition		Possible Logic	
	Type of Death	Agency of Death	Speculated Mechanisms	Speculated Categories
Natural Cultural Extinction	Natural	Environment or Natural Process	Natural Disaster or Climate Change; Lack of Foresight/Planning	Annihilation; Adaptation
Genocide	Unnatural	Competing Culture	War, Hegemony	Annihilation, Enslavement, Assimilation, Adaptation to New Role?
Cultural Suicide	Unnatural	Own Culture as Participatory Agency	War (Mutual destruction?); Competition; Environmental Depletion	Annihilation, Assimilation?, Adaptation to New Role?

Note that by the international legal definition of genocide, the actor responsible for the genocide is not exactly clear. It is possible that cultural suicide could also be considered to be a form of 'genocide' even if committed by one's own culture. This may explain why there has been some confusion as to whether the deaths the Khmer Rouge inflicted on Khmer (in addition to Cham, Vietnamese, and other Cambodian minorities) was 'genocide' given that some make the argument that it was aimed at restoring much of Khmer culture rather than destroying it.

Similarly, different kinds of cultural suicide could occur in connection with genocide in what could really be classified as 'assisted homicide'. The immediate, 'proximate' cause of death would be suicide but the real cause would be genocide; competitive pressures that are a cause of death. In individual suicide, a person who does not 'fit' the group or loses in competition may then be the cause of his/her death. Similarly, cultural suicide could be an attempt to protect the physical members of one's culture (assimilate rather than face annihilation; copy one's rival and compete rather than face annihilation) or to relieve pain and/or avoid submission.

Biological and Psychological Models Applied by Analogy at the Cultural Level: Explanatory Logic and Classification of 'Cultural Suicides' by Type

Durkheim began his study of individual suicides by classifying them in ways that reflected different purposes or logics. This approach seems to work by analogy to categorize what could be suicide at the cultural level. Though Durkheim did not link his categories to evolutionary theories as explanatory mechanisms for different categories of suicide, his categories do reflect contemporary genetic and psychological (group process) explanations.

Table 3 takes Durkheim's categories for individual suicide, with examples, and adds a column of cultural manifestations that could fit into his categories, with some suggestions of cultural deaths that could be classified as suicide.

Table 3

**Durkheim's Categories of Individual Suicide with Examples
and Potential Analogies to Cases that Could Be Cultural Suicide**

Durkheim's Characterizations of Suicide		
	<i>Individual Manifestations</i>	<i>Cultural Manifestations</i>
Altruistic (Inclusive Fitness)	Sacrifice of Elderly Parent; Sacrifice of Wounded/Crippled; Elderly widow(er); Kamikaze	(Egoistic categories?); Conquered society or victim of genocide (chosen assimilating or dying, under pressure) [Contributory genocide?]
Anomic	Genetic Mental Illness	Overly violent or overly consumptive society that destroys its eco-system or its members through violence?
Fatalistic (Pain)	Captured Criminal; Captive or torture victim; Scapegoat; Terminal illness; Alcoholism, Drug abuse and other reckless behaviors	Conquered society or victim of genocide (chosen assimilating or dying, under pressure) [Contributory genocide?]
Egoistic	Romantic; Martyr; Other socially defined 'honor' deaths; Cult behaviors; Deadlock (mutual) suicide of equally matched competitors fighting to the death?	Mutually assured destruction? Imperial collapse?

The boundaries of these categories (from 1897) are not that clear. For example, is a 'Kamikaze' or an 'honor' death one that is for egoistic reasons or altruistic ones? Probably there is a good argument that the 'egoistic' category has some element of altruism. The fatalistic category may also be socially induced.

Table 4 takes Durkheim's categories and tries to offer the explanations that biologists might apply to each category to try to find the 'logic' of genetic benefit for the suicide. Note that Durkheim's first category, 'altruistic' suicide (a sacrifice for others) is what biologists today call 'inclusive fitness' sacrifice to protect one's genes. The 'anomic' category is already assumed to be a genetic failure. The other two categories seem to be examples of competitive failure, suggesting different kinds of group dynamics at work. In looking at culture, however, there may be an overlap between the 'anomic' and 'egoistic' categories as well as between the altruistic and fatalistic categories. Biologists are currently developing models of species interactions in which different species rise and fall relative to others in a group process dynamic that produces different equilibriums and for which there might be analogies for cultures in groups that include what looks like suicide (Takahashi *et al.* 2011).

Table 4

The Biological Logic of the Suicide, Using Durkheim's Categories

Durkheim's Characterizations of Suicide	Biological Explanations Today	Cultural Analogy in Group Processes
Altruistic (Inclusive Fitness)	Sharing of Resources to promote genetic survival of like genes	Assimilation of a culture under genocidal pressures
Anomic	Defective Genes that are self-eliminating	Mass annihilation and extinction (e.g., unnaturally violent culture or one lacking ability to plan)
Fatalistic (Pain)	Self-defensive pain mechanism that is a subset of the above and could be described as altruistic OR group behavior	Mass annihilation of a culture that sees itself as non-competitive
Egoistic (maybe a subset of 'Anomic' suicide? Or designed to cause harm to or promote a lesson or legacy among others?)	Could be group process behavior that is altruistic	Mutually assured destruction and imperial collapse serve to cleanse out unsustainable or overly violent cultures?

Reclassification or Classification of Cases as Suicides

Although Durkheim's classification scheme does not seem to easily fit cultural suicides, it does seem possible to take different cases of cultural death and to interpret them as 'suicides'. Nevertheless, there is still a lot of guess work and there are some boundary problems with other forms of cultural death. Using the idea of cultural suicide allows us to think about how to find a new logic in different kinds of 'collapse' or death processes, but it is not clear yet whether it offers a framework for prediction that is more than just relabeling. Below are some examples of categories and cases, starting with Durkheim's categories of altruistic and fatalistic suicide and then dealing with historical cases or contemporary examples that might fit the classification of 'egoistic' or 'anomic' suicide. There is too little space here in this preliminary article to fully consider historic cases other than to make some quick observations and suggestions on where to look.

1) *'Altruistic' Suicides*. There is a mythology of island cultures (Cook Islands, some Caribbean islands) of meeting colonial explorers with such openness that willingly and rapidly led to the transformation or disappearance of their own cultures. If true, this recognition of more powerful cultures might be an example of 'altruistic suicide' though it is more likely today used as an ideology of globalization for cultural genocide on the pretext that it is welcomed as 'development'. Leaders of anti-colonial resistance in the Third World like to characterize the 'solidarity' of Native Peoples with other cultures in fighting off European colonialism as an altruistic sacrifice of their cultures rather than genocide.

2) *'Fatalistic' Suicides*. Turnbull's study of the Ik!, a mountain Ugandan tribe in the mid-1960s that seemed to be destroying itself as a result of disappearance of any social fabric, echoes some of the stories of the end of some Native American cultures after colonial contact (disease, loss of land or destruction of eco-systems, and military conflict) that ended their ability and will to survive (Turnbull 1972). These ultimate 'suicides' are probably better seen as contributory genocides, though at a certain stage after genocide, fatalistic suicide can also be an appropriate description.

3) *'Anomic' Suicides or 'Accidental' Death?* The classic case of cultural extinction (that includes physical extinction) in micro-cosm is the disappearance of the culture of Easter Island. The environmental collapse of Easter Island (population growth and cutting of all of the trees, killing off the eco-system and the human population) is generally seen as a lack of foresight (Diamond 2005). However, here is a case where the eco-system led to the rise of cultural traits that led to those poor choices and ultimately eliminated the culture while protecting what was left of the island's other species. That could be seen as fitting the logic of 'anomic' suicide.

Different clans developed on Easter Island with each clan controlling a resource that was important to another clan and creating an inter-dependency without warfare and also without planning. What one would have expected to find if Easter Island had remained sustainable was a ritualized system of warfare and perhaps the sacrifice (infanticide) of infant girls that would have worked to maintain the population balance as in neighboring islands (Firth 1936). What seems to have prevented such a balance is that no clan would allow the others to engage in war and disrupt the interdependent trade relations. The very nature of the island with segregated resources in a way that forced interdependency of clans also seems to have prevented the development of systems of clan warfare that would have balanced the population. Why did a single kingship/sovereign not arise, appointed by the groups to maintain the resources? Kings arise when there is a single strategic or productive geographic area, like the Nile delta, that a single ethnic group can control. This did not occur on Easter Island. There, the geography prevented any kind of centralized political leadership from emerging.

Here, the 'dead-lock' (really a death lock between clans competing over the remaining resources by consuming what they had rather than by controlling their populations – with analogies to contemporary globalization) may have been a 'logical' anomic suicide that served a cleansing function like that of a forest fire.

4) *'Egoistic' or 'Anomic' Suicides: Contemporary Possible Examples?* Among historic examples of empire and imperial conflicts, one might try to classify the resultant 'deaths' of competitors as a death spiral of both in a form of 'egoistic' suicide (both cultures fighting to the death out of ego and 'honor' in a mutually assured destruction deadlock, or the victorious culture ultimately becoming so violent or so complacent that it also causes its own collapse). One might suggest that these violent cultures that exist on an ideology of expansion and rapid consumption also create the environmental catastrophes that lead to their destruction, with this 'suicidal' behavior as the only approach they recognize to return to an equilibrium.

The 'collapse' of modern empires has yet to destroy their cultures though it could (a nuclear holocaust would). There are also questions as to whether losing empires are still the same culture once they are no longer empires. Russia, for example, was historically locked into certain patterns of hierarchy and group-think as a result of its environment and the culture seems to cycle in patterns of violence or move towards deadly

destruction, but, by contrast, the collapse of the Swedish empire seems to have led to change (Lempert 2012). One might also argue that American political 'culture' (if the U.S. is a culture) has become much more like that of the Russians after the collapse of the Soviet Russian empire and that it is also headed for collapse (Duncan 2014). Should or can these be classified as 'egoistic' or 'anomic' suicides?

Discussion

While we are still just at the point of labeling and classification of cases, what will be needed for cultural suicide to be a useful category is to demonstrate in each case how cultural suicide actually worked to promote the adaptation of the overall human species to the environment (or the survival of the overall eco-system). We could then start to develop a model of conditions when cultural suicides would be favored (not necessarily a deterministic model but perhaps a probabilistic one) and of how cultures would re-pattern or how groups of cultures would follow the suicides. If we identify conditions in which suicide becomes a rational logic (*i.e.*, confirm that there is a phenomenon of cultural suicide, not simply random elimination or collapse but an accelerated process of self-catabolism as a result of choice), then we can try to measure and predict when it occurs. We could also start to look for 'tipping points' at which survival and future investment in protecting or transforming a culture end (for example, when cultures give up on environmental sustainability or avoiding war) and suicide (or programmed death) begins, with individuals shifting thinking to how they will protect themselves in the collapse.

As with individual suicide, there is some likelihood that we could find such mechanisms. For example, in the year after the death of a spouse, death rates for the surviving partner are greatly increased. This suggests (but does not necessarily 'prove') that there is a period of programmed death where elderly people caring for each other and whose children are grown then have to deal with the urge of 'inclusive fitness' for the species that would cause the second death; to relieve the new social burden created by the first death.

At the same time, biologists also suggest that it may be hard to identify whether suicides can actually move systems towards improved adaptability or whether they just recreate the same patterns of 'weak equilibriums' (Takahashi *et al.* 2011). It could be that human cultures just cycle through positions in groups, continually moving to weak equilibriums of a predatory imperial culture and peripheral exploited cultures, where the predator ultimately takes too much and falls. With this kind of circulating pattern, advances never occur unless 'learning' takes place. But does it?

In addition to looking for cases, we can also try social experiments to see how cultural suicides might impact other cultures and if they ever do lead to 'progress' – *i.e.*, to a breakthrough culture that was able to plan, use reason, rule of law, overcome prisoners' dilemmas and even to plan and prepare for changes in the solar system that would make earth uninhabitable (such that constant re-adaptations on earth itself and to its eco-systems would also ultimately be self-defeating). For example, we would look to see if unique cultures and individuals with the ability to plan, defer consumption and to cooperate would be able to survive in suicidal societies/cultures or whether they are all disproportionately purged, and/or whether they are able to group and aid the rise of new forms of cultures, or whether such planning and cooperative cultures could ever rise and protect themselves in competition and in groups with other cultures. We would also

look to see if the cultures that destroy planning, cooperation, and intellect are really quickly extinguished when such cultures fail or whether they continue to distort other cultures that rise up when such cultures fail.

Conclusion

There are several political, philosophical and ideological implications and paradoxes that make the study of cultural suicide even more difficult than the science, itself. The idea that human 'progress' may be a fallacy and that human cultures may choose destruction over survival or that such processes may be pre-determined run counter to current assumptions (Lempert, 2016).

Social sciences work on the basis of rational models, assuming that behaviors generally serve some kind of logic (perhaps biological, sometimes theological, in some cases maybe both). Many find it hard to look at current political and economic choices that seem to lead to inevitable environmental or economic collapses and to accept that an actual rational logic may describe what seem to be entirely irrational behaviors. They look, instead, for explanations that rational decision-making has been short-circuited by some misperception of reality or risk.

Individual suicide is uncomfortable for organized religions to deal with. Cultural suicide is an uncomfortable social science issue because determinism cultural suicide is at odds with assumptions of free will and offers a competing view of how 'free' choices are really shaped within nature and culture. Nevertheless, the study of individual suicide has partly overcome this problem by looking at 'probabilistic' explanations rather than choosing to accept determinism or free choice. A similar approach might prevent conflicts in the study of cultural suicide since cultural forms develop in certain geographies with higher probabilities. If such probabilities can explain outcomes and if social scientists acknowledge that human choice for 'policy' is not 'free' and that choices are also culturally 'determined', the use of such an assumption will be easier for social scientists to accept.

The problem with accepting new assumptions about cultural behavior is that it also requires a rebuilding of some of the core elements of social science, itself. Definitions in the field of social and cultural anthropology are currently blurred, possibly also purposefully, to deter scientific study and to protect an ideology that says that scientific study cannot (or should not) be done. In order to move forward, however, we need agreement on basic definitions like 'culture' and 'change'.

For now, the study of cultural suicide starts off, itself, with labeling and categorization of social processes to try to isolate areas for study and with testing of hypotheses that may not be much more at this stage than renaming which might discourage colleagues from working collaboratively to advance study in this area. Early social scientists were also fond of labeling but much of it has led to subjective names that have not really led to explanations, and that have often been dead ends (*e.g.*, Parsons 1951).

In examining processes of social change, in general, there has been very little work in social sciences actually trying to define, measure, codify and explain human 'progress' other than in terms of technological and population growth or life expectancies. Here, in this study, we have the opposite: a theory of (at least short term) regress, rather than progress, as a natural human phenomenon, with an attempt to try to define it as well as to suggest that we need to accept the seeming paradox of irrational rather than rational human choice.

The author has theorized in previous work on cultures taking roles in groups (2014) and in other studies that human social ‘progress’ may be a myth (2016), with cultures defining themselves competitively and on the basis of self-protection and ability to amass resources and develop military superiority and technology for dominance and ‘security’. The study of cultural suicide may or may not confirm this view, which also raises uncomfortable issues.

Finally, we must ask whether we can assure applications of answers to questions about cultural suicide? What kinds of technologies can we try to develop to improve human long term adaptability not only on this planet, if we find that cultural suicide is part of a natural process and if we believe there may be ways of recognizing and intervening at some level to stop it?

In the same way we can now predict individual suicides and can try to build social support networks that improve the use of human potential, we can hope for a way to use social science to improve human group potential and better address the problem cultural suicide. By analogy, some human cultures recognize individual suicide not as a ‘benefit’ but as a loss of the investments of raising a life that is then taken, and actively intervene to change the social conditions that lead to suicide. Several human cultures also offer humane forms of pain management and choice in the difficult moral issue of assisted suicide while trying to protect quality of life and human potential at the same time.

If the phenomenon of cultural suicide does exist and we recognize it, we may have the potential to speed up human cultural evolution in adherence to certain approaches to promote human species and cultural survival. If we can determine earlier when cultures are heading for dead ends and can offer proof that cultures are entering suicidal phases in order to confront the denial that they are, perhaps we can look for ways of culture change to avert the human suffering of cultural suicide.

NOTE

¹ Conversations in Leningrad, U.S.S.R. during field work, spring 1990 with Dr. George De Vos.

REFERENCES

- Allison, G. 1971. *The Essence of Decision: Explaining the Cuban Missile Crisis*. Boston: Little Brown.
- Axelrod, R. 1984. *The Evolution of Cooperation*. New York: Basic Books.
- Benne, K., and Sheats, P. 1948. Functional Roles of Group Members. *Journal of Social Issues* 4 (2): 41–49.
- Boserup, E. 1981. *Population and Technological Change*. University of Chicago Press: Chicago.
- Darwin, C. 1859 [1851]. *The Origin of Species by Means of Natural Selection*. London: John Murray.
- Diamond, J. 2005. *Collapse: How Societies Choose to Fail or Succeed*. New York: Penguin Books.
- Duncan, B. 2014. Convergence Theory Revisited: Kafkaesque Global Bureaucracies of Our Times: With an Example of a Tool for Measuring whether Approaches to Accountability are Real or Sham. *Social Evolution and History* 13 (1): 67–98.

- Durkheim, E. 1897 [1951]. *Suicide*. New York: The Free Press.
- Durkheim, E. 1893. *The Division of Labor in Society: Study of the Organization of Higher Societies*. Beverly Hills, CA: Sage Publications, Inc.
- Firth, R. 1936. *We, the Tikopia*. Routledge: London.
- Frank, A. G., Cockroft, J. D., and Johnson, D. L. 1972. *Dependence and Underdevelopment: Latin America's Political Economy*. Garden City, New York: Anchor Books.
- Gyllenberg, M., Parvinen, K., and Dieckmann, U. 2001. Necessary and Sufficient Conditions for Evolutionary Suicide. *Bulletin of Mathematical Biology* 63: 981–993.
- Haldane, J. B. S. 1932. *The Causes of Evolution*. New York, London: Harper and Brothers.
- Hardin, G. 1993. *Living within Limits: Ecology, Economics and Population Taboos*. Oxford: Oxford University Press.
- Homer-Dixon, T. 2006. *The Upside of Down: Catastrophe, Creativity and the Renewal of Civilization*. Washington, D.C.: Island Press.
- Johnson, C. 2010. *Dismantling the Empire: America's Last Best Hope*. New York: Henry Holt and Company.
- Korotayev, A., Malkov, A., and Khaltourina, D. 2006. *Introduction to Social Macrodynamics* (3 volumes). Moscow: Editorial URSS.
- Leach, E. 1954. *Political Systems of Highland Burma: A Study of Kachin Social Structure*. Cambridge, MA: Harvard University Press.
- Lemkin, R. 1944. *Axis Rule in Occupied Europe: Laws of Occupation – Analysis of Government – Proposals for Redress* (pp. 79–95). Washington, D.C.: Carnegie Endowment for International Peace.
- Lempert, D. 1987. A Demographic Economic Explanation of Political Stability: Mauritius as a Microcosm. *Eastern Africa Economic Review* 3 (1).
- Lempert, D. 2012. The Social Science of Empire. (Review Essay using four books of ‘The American Empire Project’.) *Journal of Developing Societies*.
- Lempert, D. 2014. Classifying Cultures by Their Relations in Groups: Drawing from Models in Psychology and Ecology. *Social Evolution and History* 13(1): 99–134. URL: <http://www.sociostudies.org/journal/articles/242737/>.
- Lempert, D. 2016. “The Myth of Social Progress, Revisited”, *Human Figurations: Long Term Perspectives*, 5:1, March. URL: <http://quod.lib.umich.edu/h/humfig/11217607.0005.107/--myth-of-social-progress-revisited?rgn=main;view=fulltext>.
- Lempert, D., Nguyen Nhu Hue. 2011. The Global Prisoners' Dilemma of Unsustainability: Why Sustainable Development Cannot Be Achieved Without Resource Security and Eliminating the Legacies of Colonialism. *Sustainability: Science, Practice and Policy* 7 (1). URL: <http://sspp.proquest.com/archives/vol7iss1/1006-031.lempert.html> and <http://www.pelicanweb.org/solisustv07n10page4.html>.
- Lorenz, K. 1982. *Foundations of Ethology: Its Nature and Relations with other Sciences*. New York: Touchstone, Simon & Schuster.
- Malthus, T. R. 1886. *The Works of Thomas Robert Malthus*. 8 vols. In Wrigley, E. A., and Souden, D. (eds.) London: Pickering and Chatto.
- Marx, K. 1867. *Capital: A Critique of Political Economy*. Moscow: Progress Publishers.
- Michard, R. E. 1999. Individuality, Immortality and Sex. In Keller, L. (ed.), *Levels of Selection in Evolution* (pp. 53–74). Princeton: Princeton University Press.

- Milgram, S. 1974. *Obedience to Authority*. New York: Harper Collins.
- Morgan, L. H. 1909. *Ancient Society or Researches in the Line of Human Progress from Savagery through Barbarism to Civilization*. Chicago: C. H. Kerr.
- Parsons, T. 1951. *The Social System*. Glencoe, IL: The Free Press.
- Parvinen, K. 2005. Evolutionary Suicide. *Acta Biotheoretica* 53: 241–264.
- Rankin, D. J., and Lopéz-Sepulcre, A. 2005. Can Adaptation Lead to Extinction. *Oikos* 111 (3): 616–619.
- Rankin, D. J., Bargum, K., and Kokko, H. 2007. The Tragedy of the Commons in Evolutionary Biology. *Trends in Ecology and Evolution* 22 (12): 643–651.
- Rogers, E. M. 1983. *Diffusion of Innovations*. New York: The Free Press.
- Sahlins, M. 1960. *Evolution and Culture*. Ann Arbor, MI: Ann Arbor Paperbacks.
- Smith, M., and Price, G. R. 1973. Logic of Animal Conflict. *Nature* 246: 15–18.
- Sorokin, P. 1937. *Social and Cultural Dynamics*. Vol. 2. New York: American Book Company.
- Spengler, O. 1928. *The Decline of the West*. New York: A. A. Knopf.
- Tainter, J. 1988. *The Collapse of Complex Societies*. Cambridge: Cambridge University Press.
- Takahashi, D., Brannstrom, A., Mazzucco R., Yamauchi, A., and Dieckmann, U. 2011. Cyclic Transitions in Simulated Food Web Evolution. *Journal of Plant Interaction* 6 (23): 181–182.
- Toynbee, A. J. 1956. *A Study of History*. Oxford: Oxford University Press.
- Turchin, P. 2003. *Historical Dynamics: Why States Rise and Fall*. Princeton, NJ: Princeton University Press.
- Turnbull, C. 1972. *The Mountain People*. New York: Simon and Schuster.
- U.N. Convention on the Prevention and Punishment of the Crime of Genocide. 1948. U.N. General Assembly, December 9.
- Weber, M. 1947. *The Theory of Social and Economic Organization*. Transl. by A. M. Henderson and T. Parsons). New York: Free Press.
- Williams, G. C. 1966. *Adaptation and Natural Selection: A Critique of Some Current Evolutionary Thought*. Princeton: Princeton University Press.
- Yablonsky, L. 1972. *Robopaths*. New York: Bobbs Merrill.