

Evolutionary Theorization of Peaceful International Changes

Shiping Tang

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Edited by T.V. Paul, Deborah Welch Larson, Harold A. Trinkunas, Anders Wivel, and Ralf Emmers

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Abstract and Keywords

Why hasn't international relations (IR) been an evolutionary science? This article contends that a properly constructed evolutionary approach, or what I call the "social evolution paradigm (SEP)," is a powerful paradigm, perhaps the ultimate paradigm, for theorizing social changes. It first introduces some basics of evolutionism and key elements for a genuinely social evolutionary approach toward social change. It then examines several key studies in IR with an evolutionary flavor. The article goes on to identify five key issue domains of peaceful international changes that will be fertile ground for evolutionary theorization. They are as follows: the future of a rule-based international system, niche construction of the international and regional system and order, changes in states' behaviors, the future of state and state building without wars, and finally, nontraditional security from climate change to epidemics and artificial intelligence. Finally, the article highlights the power of the social evolutionary approach and calls for more social scientists to embrace the approach.

Keywords: peaceful international changes, social evolution, social evolution paradigm, niche construction, system, order

Ever since Charles Darwin (1859), social scientists have been attracted to evolutionary theorizing or thinking in social sciences (e.g., Donald Campbell, Alfred Marshall, George Herbert Mead, and Thorstein Veblen, to name just a few). Despite their various (mis-)understandings about biological and social evolution, these giants have shared a fundamental conviction with which I concur: the complex system called human society is an evolutionary system; consequently, social sciences must be evolutionary sciences. For these advocates of evolutionary social sciences, nothing in human society makes sense unless in the light of (social) evolution, to paraphrase Dobzhansky (1973).

Unsurprisingly, after a brief hiatus after World War II due to our repulsion against social Darwinism (or more accurately, "social Spencerism"), evolutionary thinking and theoriza-

tion has enjoyed a vigorous comeback in the social sciences (for a more detailed treatment, see Tang 2020), including international relations (IR).

This essay examines evolutionary theorization of peaceful international changes.¹ The rest of this essay is divided into four sections. After this brief introduction, the first section explains why an evolutionary approach is a powerful paradigm, perhaps the ultimate paradigm, for theorizing social changes. The second section clarifies several misunderstandings regarding evolution and then highlights a few key aspects of social evolution. The third section briefly summarizes several key studies of international relations (IR) with an evolutionary flavor. Section four singles out a few key directions for promising research. I conclude by highlighting the power of the social evolutionary approach and calling for more students of IR to embrace the approach when tackling peaceful international changes.

A brief caveat is in order. Due to space constraints, I have kept references to the literature of evolutionary biology and social sciences to a minimum. Interested readers should refer to Tang (2020) for a more detailed discussion of a host of issues addressed here.

Why an Evolutionary Approach toward Human Society?

Ever since Heraclitus uttered the words, “[N]o man ever steps in the same river twice, for it’s not the same river, and he’s not the same man,” students of the natural and social worlds have appreciated that explaining continuity and change of the world around us, or more precisely, change with continuity, is the most fundamental challenge for all sciences. Broadly speaking, we can identify two types of change (i.e., nontransformational and transformational) and two levels of analysis (i.e., units and system). Once we differentiate the two types of change and the two levels of analysis, it becomes clear that in social sciences there are three positions regarding the challenge posed by change with continuity.

The first position is to deny any change at both the unit level and the system level: only this position is genuinely static. Obviously, this position is untenable, and few, if any, social scientists take such a position.

The second position has three variants: (1) admitting only nontransformational changes at both the unit level and the system level; (2) admitting transformational changes at the unit level but not at the system level; (3) admitting transformational changes at the system level but not at the unit level. The first and the third variants have been rare, and the closest thing might have been those schools that can only contemplate cyclical changes at the system level but admit no transformational changes at the unit level (e.g., Gilpin 1981; Modelski 1990). The second variant has been far more common, prominently represented by structural functionalism in sociology and structural realism in IR (e.g., Waltz 1979, 66; Mearsheimer 2001, 2). Crucially, all three variants within the second position

can claim to be dynamic, to a various degree. None of them, however, can claim to be genuinely evolutionary.

The third position is to admit both types of change at both levels and thus has the potential to be genuinely evolutionary. Obviously, in the long history of human society, both units (e.g., individuals, collectives), different human societies, and the whole humanity have undergone both nontransformational and transformational changes. It is this presence of both nontransformational and transformational change with continuity at both the unit level and the system level that demands all social sciences to acquire a genuinely evolutionary approach. This is because only a genuinely evolutionary approach is up to the task.

So where does evolutionism's power come from? Its power primarily rests on three fronts.

Foremost, evolutionism is exceptional at explaining the wonders of life—the great diversity, the marvelous adaptation of organisms to their environment, the similarities and differences among organisms of the same species, and the similarities among different but related species—on Earth and other places in the universe; the same evolutionary central mechanism of variation-selection-inheritance (VSI) applies. No other theory or approach (i.e., nonevolutionary and partially evolutionary approaches) has ever come close.²

Second, evolutionism subsumes or unifies all other micro- or meso-level mechanisms in biological evolution. Evolutionism, as Daniel Dennett (1995, 62) puts it, proves to be “a universal acid” that dissolves everything.

Finally, evolutionism makes most exogenous (i.e., driven by external factors or force) explanations of life unsatisfactory and, more importantly, unnecessary.³

In sum, evolutionism is elegant, powerful, and endogenous: it triumphs over all other explanations for the wonder of life on (and very likely, beyond) Earth, and it is my contention that the evolutionary approach holds equally powerful potential for understanding the complexities, wonders, and tragedies of human society, including IR.

Evolution: From Biological to Social

Although Darwin made his revolutionary theory known to the world over 150 years ago, and evolutionary biology has established the core facts of biological evolution beyond any reasonable doubt in the past half-century, misunderstandings about evolution and the evolutionary paradigm abound (for a classic introduction, see Mayr 2001). Here, I merely single out several common misunderstandings of (biological and social) evolution before I move on.

1. *“Evolution means ‘survival of the fittest.’”* This is perhaps the most prevailing misunderstanding about evolution and evolutionism. In truth, as Darwin recognized long ago (1859, 201–202, 472), biological evolution does not dictate survival of the fittest

at all: *biological evolution only means the survival of the fitter among individual organisms within the same species and the survival of the fitter species in a specific environment*. As such, fitness in biological evolution is always relative but can never be absolute in any sense. In other words, biological evolution only dictates survival of the fitter in a specific environment, but never the survival of the fittest in an absolute sense.

2. *Evolution means adaptation with will (or destiny)*. An organism's adaptation to its environment is the outcome of evolution via natural selection. Adaptationism via will (or destiny) has no explanation for the origin of organisms' will to adapt in the first place.

3. *Evolution is essentially equivalent from development, or an unfolding of destiny or design in stages, progressively*. This is due to Herbert Spencer's equating evolution with development.

4. *Biological evolution is purely neo-Darwinian*. Not anymore. Four discoveries, namely epigenetic inheritance, transmission of prion-like diseases, niche construction, and parental effect, have all called for some admission of non-neo-Darwinian inheritance. These new discoveries imply that the transmission of instruction or information (with gene being only one form) and phenotype in biological evolution is far more complex than the gene-centric and externalist Modern Synthesis has anticipated: evolutionary biology is now moving toward an Extended Synthesis (Danchin et al. 2011; Danchin 2013). As a result, labeling biological evolution as a whole as Darwinian, Lamarckian, and Spencerian has become increasingly unhelpful, if not counter-productive (Tang 2020, chap. 2, n.d.) Social evolution is even less neo-Darwinian (Tang 2017b, n.d.).

Although social evolution shares some key similarities with biological evolution, there are also fundamental differences between the two. All the differences between biological evolution and social evolution can be traced to the coming of a transformational new force—the ideational force—to social evolution. Ideas play a role in social evolution but not in biological evolution. Moreover, the coming of ideational forces does not mean that material forces no longer operate in social evolution. Rather, the two forces interact with each other to drive social evolution, thus making social evolution a phenomenon far more complex than biological evolution. Altogether, the central mechanism in the ideational dimension of social evolution can be both *artificial* variation-selection-inheritance (VSI) and selection-variation-inheritance (SVI). Moreover, only theorization with the central mechanism of artificial VSI or SVI can be genuinely evolutionary.

Information and Expression/Phenotypes in Social Evolution

In biological evolution, there is only one kind of information (or replicator, in a loose sense) and interactor (or phenotype, in a loose sense)—the material or biological kind. In social evolution, there are two broader types of replicator and interactor; in addition to the material kind, there is also an ideational kind. Moreover, in the ideational dimension

of social evolution, there can be multiple pairs of replicator and interactor, depending on the level of analysis.

Mutations in Social Evolution: Random and Blind versus Nonrandom and Directed

In biological evolution, mutations are generated *essentially randomly* by three major mechanisms: DNA damages/nucleotide changes, recombination or genetic material exchanges (e.g., chromosome transposition, genetic crossing-over), and external invasion. More critically, these mutations are also generated blindly, in the absolute sense: *organisms cannot know whether a mutation is advantageous or not*. In the biological dimension of human evolution, these mechanisms and principles still hold.

In social evolution, however, ideational variations (or mutations) can be random and blind but also nonrandom and directed. Yet just because ideas are not generated randomly and blindly does not mean that a phenotype expressed from an idea will always be “fit” in a given social system: ideational phenotypes or expressions are still subjected to artificial selection.

Complex Multilevel Selection in Social Evolution

Selection in social evolution is also far more complex. In biological evolution, there is only one source of selection pressure: the physical environment. In contrast, in social evolution, there are two sources of selection pressure: the physical environment and human beings themselves. These two sources of selection pressure interact with each other to drive social evolution. Furthermore, because of the coming of ideational forces in social evolution, there are also two different types of selection pressure: material and ideational. Three critical aspects of selection in social evolution are worth emphasizing.

Most critically, *artificial selection rather than natural selection dominates the ideational dimension of social evolution*, although this artificial selection still has to operate within the constraints dictated by the physical environment. Moreover, within the ideational dimension, different forces of selection may operate at different levels, while at the same time the same force of selection may operate differently at different levels. Finally, because human beings are creatures with (high) consciousness, human agents are not only producers of ideational mutations, but equally importantly, agents of selection in the ideational evolution of social evolution. Meanwhile, from the interaction between material forces and ideational forces, there arises a critical selection force in social evolution: (social) power.

Evolutionary Theorization of International Relations: From Anti/Pseudo to Genuine

Despite some evolutionary elements scattered around (which I cannot discuss here due to space constraints), much of mainstream IR theorization has been nonevolutionary and even anti-evolutionary. Most prominently, by seeking to explain the whole history of international politics with a single grand theory, major IR theorists have been implicitly assuming that the fundamental nature of international politics has remained roughly the same or, more precisely, that human society has experienced a single phase of international politics (Tang 2013). As such, all major grand IR theories have been nonevolutionary theories. Waltz provided the clearest statement on this implicit assumption: “*The texture of international politics remains highly constant, patterns recur, and events repeat themselves endlessly,*” and he attributed the cause of this “*striking sameness* in the quality of international politics” to “the enduring anarchic character of international politics” (1979, 66, emphasis added; see also Gilpin 1981, 7; Mearsheimer 2001, 2).

Modelski (1990) touted his “long cycle” of power shift as an evolutionary theory of IR. Yet his whole enterprise is metaphorically evolutionary at best, and pseudo-evolutionary at worst. Modelski did not grasp the basics of biological or social evolution. Evolution, whether biological or social, does not go through cycles. More critically, the central mechanism of evolution—the mechanism of variation-selection-inheritance—has no role in his whole enterprise. Indeed, even his scheme of “long cycles” is merely an observation with dubious validity.

Thayer (2004) advanced a theory on the origins of war and the necessity of offensive realism as states’ guiding theory in their pursuit of security, drawing exclusively from sociobiology. Unfortunately, the sociobiological approach toward the origin of war is inherently invalid (for detailed critique, see Tang 2013, chap. 2 and the citations there).

Hendrik Spruyt’s (1994) explanation for the rise of the sovereign territorial state in the European international system between the fourteenth and eighteenth centuries was a genuinely social evolutionary theory. Critically building upon Mann (1986), Tilly (1975, 1992), and many others, Spruyt emphasizes variation and selection as two crucial steps for understanding why and how a particular form of state (i.e., the sovereign territorial state) eventually came to dominate the system. Spruyt argues that the sovereign territorial state was more capable of protecting trade and extracting revenue and thus had a long-term advantage in competing against the other two possible forms of governance (i.e., city leagues, city state). His overall thesis represents a major step toward a more adequate explanation of the rise of the territorial state and sovereignty within the medieval to early modern European system.

First appearing in an article and then a volume, Tang (2010, 2013) advanced the first systematic statement regarding the evolution of the international system from around 8000 BCE to the present. Briefly, Tang first identified four “worlds” or epochs in human history: the peaceful paradise before the onset of war in different subsystems; the bloody offen-

sive realist world after the onset of war in which states either conquered or were conquered; the defensive realist world after the rise of sovereignty and nationalism circa 1648–1945; and the more rule-based system that is still unfolding today. Throughout, Tang deployed the central mechanism of artificial VSI/SVI for explaining the transformations from one world to the next.

Tang's social evolution paradigm (SEP)-based account of the grand transformations of the international system shows that the three grand theories of international politics are from and thus for different epochs of international politics. More specifically, offensive realism was right, but it is wrong and will be wrong: its policy prescriptions will produce disasters in today's and tomorrow's world. In contrast, defensive realism was wrong—its policy prescriptions would be suicidal in an offensive realist world—but it has been right and may remain right for a while. Finally, neoliberalism was wrong—its policy prescription, too, would be suicidal in an offensive realist world—but it might have become more right after World War II and may become more right in the future. Put differently, whereas offensive realism is a theory for the past, defensive realism is a theory for the present and a limited future, and neoliberalism is a theory for a limited present and more for the future. Tang's SEP-based account of the grand transformations of the international system thus has neatly dissolved the debates between the three grand theories.

In two articles, Tang (2008) and Tang and Long (2012) also deployed SEP to explain changes and continuities in states' security behavior.

Tang (2008) sought to explain China's shifting from a security strategy of offensive realism under Mao Tse-tung to one of defensive realism under Deng Xiaoping. Briefly, China under Mao adopted an ideology of overthrowing all imperialist and "reactionary" regimes in Asia and the world at large. Thus, China under Mao, like the former Soviet Union, actively supported revolutions and insurgencies in many developing countries, thereby intentionally threatening those countries, which were identified as imperialists, or their lackeys and proxies. Moreover, as a staunch Marxist, Mao believed that conflicts in international politics are necessary and inevitable—to transform the world into a socialist world, struggles, including armed struggles, against imperialists and their proxies are inevitable and necessary. Furthermore, China under Mao largely believed that all of the People's Republic's security problems were due to other countries' evil policies, rather than the interactions between China and other states. China under Mao thus had little understanding about the dynamics of the security dilemma (Tang 2009). After the launching of open-and-reform in 1978 by Deng Xiaoping, however, China has firmly settled into a defensive realism strategy. So what explained this profound change?

Tang (2008) argued that the setbacks brought by Mao's disastrous domestic and foreign policies made a fundamental rethinking of China's domestic and foreign policies inevitable after Mao's death. After Deng had wrestled power from Mao's anointed successor, Deng renounced Mao's disastrous policies and adopted a fundamentally new set of domestic and foreign policies that included open-and-reform and improving relations with

both superpowers and China's neighbors. This profound change has been an outcome of (negative) artificial selection via learning.

Tang and Long (2012) deployed SEP to explain the continuity in post-World War II US military interventionism. After the US invasion of Iraq, there was a heated debate regarding this puzzle that often pitted ideas against material forces (especially US military power), with even many realists stressing the overwhelming power of ideas embodied in the minds of neoconservatives. Tang and Long (2012) contend that this one-sided emphasis on the power of ideas is incomplete and misleading. Taking advantage of SEP's synthesizing power, their explanation combines both ideas and material forces via the central mechanism of VSI/SVI.

Specifically, they argue that US military interventionism cannot be understood as the product of ideational forces alone. Rather, two crucial material variables, namely geography and aggregate power amplified by superior technological prowess, are indispensable for understanding the propensity for America to intervene militarily abroad. Briefly, due to America's unique geographical location and enormous power advantage over other states, the majority of American elites and citizens have been shielded from the devastation of war. Compared to citizens in other major states, American citizens in general have consequently tended to be less repelled by the use of force as an instrument of statecraft. Likewise, American elites have tended to support the use of force abroad more enthusiastically than the elites of other major countries. Consequently, ideas that support military interventions abroad are more likely to win in the American marketplace of ideas, and thus America since World War II has been far more active in military interventions overseas than other major states.

Peaceful International Changes: Five Issue Domains

By any measure, international politics has become more peaceful, measured by the number of both interstate and intrastate wars (Cederman et al. 2017). As such, we should expect more peaceful international changes than we are used to. So what useful lessons can we draw from SEP, regarding theorizing peaceful international changes? This section identifies five key issue domains. For the first three issue domains, I have some concrete ideas, whereas the last two are emerging new phenomena about which I can only offer some speculations.

The Future of a Rule-Based International System: Power, Ideas, and Artificial Selection

Judged by the total numbers of rules and the general tendency of states to obey some of the rules, the international system has become more rule-based or institutionalized (Simmons 2000). A major driver behind this development has been the dramatic decrease in interstate war (Tang 2013, chap. 5). Moreover, there is a feedback mechanism between

rule-making and peaceful changes. Many international institutions (rules) and norms were made or established for the sake of preventing interstate (and then intrastate) violence, and a more peaceful international system has made and strengthened more rules and norms. Rule-making in international politics thus represents a most fertile field for evolutionary theorization in IR.

Institutions are simply codified ideas. Because there is diversity of knowledge among agents (i.e., there will always be more than one idea about how a future institutional arrangement should look), the process of institutional changes is essentially about how to turn a very limited few of those numerous ideas into institutions. As such, we can take ideas (for a particular institutional arrangement) as genes and institutional arrangements as phenotypes, and then apply SEP—with the mechanism of *artificial* VSI/SVI at its core—to institutional change. Based on this bedrock evolutionary take on institutions and institutional change, I have developed a SEP-based general theory of institutional change (Tang 2011a). Here I introduce the general theory of institutional change and then underscore some of its most critical implications for understanding international institutions.

First and foremost, the struggle for the power to make rules is at the heart of the matter. Institutions are often made by power (or under the shadow of power) and backed by overt or covert power. Most of the time, *power and institutions are inseparable*.

Second, the process of institutional change consists of five distinct phases: (1) generation of ideas for specific institutional arrangements; (2) political mobilization by supporters of specific ideas; (3) struggle for power to design and dictate specific institutional arrangements (i.e., to set specific rules); (4) setting the rules; and (5) legitimatizing/stabilizing/reproducing. These five phases correspond to the three phases of mutation (variation), selection (reduction in variation), and inheritance (stabilization) in evolution: generation of ideas corresponds to mutation; political mobilization and struggle for power to selection; and setting the rules and legitimatizing/stabilizing to inheritance.

Third, the notion that institutions are usually welfare-improving public goods is misleading, inspired by the invalid harmony approach toward institutions, exemplified by functionalism and a neoclassical economics-inspired new institutional economics approach toward institutions. More often than not, institutions are private goods that serve private interests, and institutions that improve agents' collective welfare are products of power struggle in a long haul rather than instant gratification from rational design (for details, see Tang 2011a, chap. 2).

From the general theory and SEP, we can draw some explicit implications for understanding institutions and rule-making in the international system.

First and foremost, like institutional change in domestic politics, the heart of institutional change in international politics, too, is the struggle for the power to make rules, and this process almost inevitably needs power. In international politics, most of the time, it has been states (rather than individuals) that have created international institutions, and the state (as the ultimate hierarchical organization) itself symbolizes the monopoly of power.

Hence, at the very beginning, international institutions have been instruments and products of statecraft. International institutions are also the product of power politics: most international institutions are backed by explicit or implicit power, just as most domestic institutions (Tang 2011a).

Second, because power is the key for making and maintaining institutions (and thus order), an actor or a coalition of actors that won the struggle for power to impose rules will have more, sometimes decisive, effect over the exact nature of institutions. In international politics, this means that a hegemonic state or a coalition of states that won the last major war or major debate will have a more, sometimes decisive, effect over the exact nature of international institutions and thus order. This was indeed the case when it comes to sovereignty (Spruyt 1994), territorial integrity (Zacher 2001), decolonialization (Spruyt 2000), trade (Keohane 1984), abolition of slave trade and piracy (Clark 2007, chap. 2; de Nevers 2007), racial equality (Clark 2007, chap. 4), and perhaps the whole international law apparatus (Anghie 2004).

Third and more relevant for our discussion here, now that the number of major interstate wars has greatly decreased, making new international rules may require a new mixture of power, most likely a mixture of economic, ideological, and political power (Mann 1986). In light of this new development, should we expect the making of international rules to be more based on controlling information and knowledge, despite the coming of the informational age?

Niche Construction of the International and Regional System and Order

One of the most exciting progresses that extends the Modern Synthesis has been niche construction, first introduced by Lewontin (1983). Since then, niche construction has received significant theorization and elaboration (e.g., Odling-Smee 2010; Odling-Smee and Laland 2011). Briefly, niche construction theory (NCT) has four central components: niche, niche construction, ecological inheritance, and coevolution of organisms and niche.

NCT starts with the self-evident observation that organisms not only adapt to the environment in which they operate but also actively modify their environment. In other words, an organism's environment is not externally independent from an organism's life cycle. Rather, there is feedback from an organism's life cycle to the environment and thus it entails possible "stable and directional changes in environmental conditions" in the long run, and constructed niches very often pass from one generation to the next, resulting in "ecological inheritance." These modified niches therefore come back to shape the fitness of its offspring (and other organisms). In short, organisms and their environment coevolve. Hence, niche construction is a process and a mechanism just as VSI/SVI, even though the former is less central than the latter.

By any measure, human beings have been the most powerful niche constructor as we know it (Odling-Smee and Laland 2011). Humans impact their environment via their metabolism and activities either unintentionally and intentionally, just as other organisms.

Far more impressively, however, human beings engineer both their physical and social environment, pervasively and profoundly. Take, for example, the coming of settled agriculture. When initiating settled agriculture, our ancestors had to clear underbrush to make fields, construct settled living spaces (e.g., pots, hamlets), and domesticate animals by keeping them alive and reproducing them rather than killing them for instant consumption.

Besides settled agriculture, the Industrial Revolution, megacities, the Internet revolution, and global warming are just a few examples of the grand cultural and physical niche constructions by our species. Equally critical, humans create organizations and institutions, two of the most critical niches for our daily life. Hence, NCT is a potentially powerful theorization tool for understanding human society, especially for understanding the relationship between human agents and the social system (Tang 2020).

Indeed, NCT may be an ideal tool for theorizing international relations, especially peaceful changes of international system and international order. More concretely:

1. States and other agents are organisms, whereas the international system is the environment. But their relationship is not entirely external. Human beings construct their niches (as aspects or pockets of the social system) all the time. A social niche construction approach calls for a figuration and relational construction perspective, as exemplified by Elias's ([1939] 1994) majestic *The Civilizing Process* and then restated by Emirbayer (1997) and Emirbayer and Mische (1998).
2. A constructed environment impacts the agent itself but also other agents. Whether the constructed environment benefits the organism itself or other organisms depends on artificial selection within the new constructed system. Hence, SNC is not parallel, but secondary, to the central mechanism of social evolution (i.e., artificial VSI/SVI).
3. Agents, especially more powerful ones, do not merely adapt to the social system, but also actively seek to shape or modify it to suit them better. All else being equal, the more powerful the agent is, the larger the impact of its niche construction.
4. There are always multiple agents who can construct the niche, and they inevitably have different preferences over outcomes (as conflict of interest). Moreover, their attempts at niche construction interact with each other.
5. Agents pick a domain (or a niche) within a social system to modify. Agents deploy strategic behaviors to achieve the niche construction, but the exact outcomes include both intended and unintended ones. Agents also learn from their own and others' experiences to draw lessons for constructing their environment. All the resources, whether material (e.g., wealth, number of allies and opponents) or ideational (e.g., religious, ideological, and cultural), can enter agents' calculation of picking niches and specific strategies of construction (Elias [1939] 1994; Bourdieu 2005).
6. Most of the time, agents can only construct a niche that has been handed down to them from earlier rounds of construction, perhaps by other agents. In other words, an agent can only construct a niche within existing constraints. Thus, more often

than not, the scope of niche construction is limited and gradual, even though the impact of the new niche can be quite significant, in the long run.

Changes of States' Security Strategies: Beyond Epistemic Communities

Evidently, SEP is well-equipped for explaining states' behavioral changes, including peaceful behavioral changes. From the two applications earlier (Tang 2008; Tang and Long 2012), several useful points can be summarized.

First, the social evolutionary approach toward foreign policy changes synthesizes realism's mostly material stance and constructivism's mostly ideational stance toward state behavior and international politics in general. Material forces and ideational forces work together, rather than independently, to drive social changes. Hence, neither a purely materialistic position nor a purely ideationalistic position is tenable for understanding human society. The challenge for social scientists thus becomes how to bring material forces and ideational forces together to formulate a coherent understanding of human society. The social evolutionary approach is the ideal instrument for bringing the two forces together into a coherent understanding of international politics (as a domain of human society).

Briefly, although ideational forces do come back to influence the evolution of the material world, material forces retain ontological priority (Tang 2011a), because the material world serves as the ultimate testing ground (or the source of selection pressure) of ideas. Ultimately, humans must anchor their ideas upon the material world, although at any given time our knowledge may not capture the objective material reality. As such, states' security strategies tend to reflect the objective reality in the long run because states are punished, sometimes severely, if they persist in adopting wrong ideas.

Second, (social) learning is an integral part of any theory of foreign policy changes, and human learning itself is an evolutionary process (Levy 1994; Tang 2013, chap. 5). Indeed, as Hayek (1978, 291) pointed out, the capability of learning gives social evolution a fundamental edge over natural evolution in terms of speed because acquired phenotypes can now be directly transmitted to the next generation through learning, and the next generation does not have to go through the same selection process.

At the beginning, there are multiple ideas for a possible strategy, and states do not simply pick one idea and deploy it as a strategy. Instead, these ideas engage in a competition for the right to be adopted as the primary strategy through debates and political struggles in the marketplace of ideas. Eventually, some ideas will be selected out, and some ideas will emerge as winners, and only the ideas that win become part of a strategy (see also Tang 2011b). SEP thus easily subsumes subthemes such as epistemic community, securitization via speech act, and lobbying for policies as competition and selection (e.g., Adler 2005).

As a result, SEP is widely applicable for explaining agents' ideational and behavioral changes.

Third, one of the major weaknesses of ideational explanation of social changes has been that even if one identifies an idea to be a major cause of social change, one still has to explain how the idea comes into existence and then matters in the first place. According to SEP, selection and learning (which includes rationality) work together in driving the evolution of the system.⁴ Hence, a conspicuous time for changing policies is when an agent realizes that his or her previous policies did not work, and the agent is suffering from the consequences of his or her failed policies. In other words, negative learning may be a more powerful force than positive learning in driving changes.

Finally, a social evolutionary approach toward foreign policy changes can easily integrate many of the insights from realism, institutionalism, and constructivism, especially regarding how the international system impacts states as agents. According to SEP, any social system, with international system being one of them, impacts agents via six major channels (Tang 2016; 2020, chap. 3). The first channel is constraining and enabling by purely physical or material forces. The next four channels, *learning*, *constraining/enabling by the interplay of material and ideational forces*, *artificial selection*, and *constituting/constructing*, make up of what we usually mean by "socialization," broadly speaking. The sixth channel, which most IR theorists and social scientists do not recognize, is "anti-socialization."

The Future of State and State Building without Wars

Tilly's (1985) aphorism that states made wars and wars made states in history still rings true in some parts of the world (see also Elias [1939] 1994). Yet, as Jervis (2002) noted two decades ago and now supported with extensive data (Cederman et al. 2017), interstate wars have decreased significantly and even intrastate (especially ethnic) wars have decreased significantly (Tang 2017a). Yet weak states still abound today. So what does the diminishing prospect of war mean for the future of state and state building, especially for weak states?

Intuitively, if territorial expansion or conquest has ceased (at least in some parts of the world), a major function of the state has also ceased. If so, how can elites justify certain measures (really, sacrifices) for national defense? This question has been a new phenomenon that has yet to receive much attention, partly because part of human history had been so bloody until quite recently.

Again, the social evolutionary approach is well-suited for tackling this problem. To begin with, states will have to select new means and rhetoric to justify certain measures for building a strong state now that the selection pressure via survival has gone. One possible option may be economic development, now that even mainstream economics have admitted the critical role of state in jump-starting and sustaining economic development

(Bardhan 2016). Yet, even with this justification, states may have to select and implement new measures for state building.

Second, even for states that are in tense rivalries (e.g., Iran versus Saudi Arabia; India versus Pakistan), will their people continue to sacrifice their well-being in the danger of war or will they try to wrestle more resources for social welfare?

Finally, without existential external threat, states can actually afford to allocate more material and human resources to more productive activities (e.g., education, research). If this is what has been happening, what does this hold for the future of state building itself (Paul 2018)?

Nontraditional Security: Climate Change, Epidemics, and Artificial Intelligence Power

Mainstream IR literature has been about traditional security issues. Yet the recent Covid-19 epidemic must have alerted even the most hard-core traditional IR to these looming nontraditional security challenges. With over a quarter of a million deaths and trillions (in US\$) of economic loss, the Covid-19 epidemic has caused more loss of life and economic damages than a region-wide war. Unfortunately, the two leading economies (i.e., United States and China) have been throwing punches at each other rather than co-operating to combat the crisis. Moreover, even the European Union has failed to orchestrate a unified rapid strategy when the epidemic hit its member countries. What does the lack of cooperation and coordination when facing clear and present nontraditional danger mean for the future of international governance?

The coming of global warming (or artificial climate and ecological change) presents one of the most pressing challenges facing humankind. After more than two centuries since the Industrial Revolution (c. 1780), the ecological impact of our modernity may have finally reached a threshold. In this sense, the coming of global warming is the archetypal manifestation of how social changes have induced profound changes to our natural environment and this artificial and natural environment has now forced us to invent new adaptations or face severe consequences. Understanding how different human groups have reacted to the coming of artificial climate and ecological changes and how they have fared is critical for us to take a fresh look at how we have engaged with nature.

The coming of artificial intelligence (AI, including robots) and the coming of genuinely *artificial* (if not “alien”) organisms bring both exciting possibilities that can extend human beings’ capabilities beyond what has been conceivable but also pose some profound questions for the role and fate of our species. Although we do not want to exaggerate the possibility that our species may cease to exist in the hands of robots, the enormous implications of these new technological advancements for the evolution of human society are yet to be explicitly tackled head-on. In this vast uncharted territory that needs our urgent, sustained, and deep attention, SEP may also provide us with powerful glimpses into our future.

These emerging and growing challenges and even threats have not received adequate attention from the mainstream IR literature. Meanwhile, existing nontraditional security literature has generated more practical lessons than theoretical insight. Although I do not hold a crystal ball for how we may adequately understand these emerging challenges, SEP, due to its immanent capacities for explaining both unit-level and system-level transformational changes, may be a powerful tool for understanding how these emerging challenges transform both units and the system (e.g., with the social niche construction approach mentioned earlier).

Conclusions

A social evolutionary account of the transformation of the international system has shown that the international system has indeed evolved from an extremely violent system (or the offensive realist world) to a mostly peaceful system (or the defensive realist world) and perhaps to a more rule-based system (Tang 2013). Because evolution does not go through cycles (i.e., there is no “back to the future”), the world we now live in will most likely see more peaceful changes than violent ones. If this is the case, the social evolutionary approach (or SEP) is destined to play a more significant role in explaining and anticipating the future of international politics.

Moreover, when it comes to (peaceful) social changes, evolutionary theorizing triumphs over nonevolutionary theorizing on at least three fronts. First, evolutionary theorizing more effectively organizes and integrates a wider body of social facts (i.e., idea, behavior, and social outcome) than nonevolutionary theorizing. Second, evolutionary theorizing provides a more integrative, coherent, parsimonious, endogenous, and thus foundational explanation for a more diverse and often seemingly contradictory body of social facts than nonevolutionary theorizing. Third, evolutionary theorizing synthesizes many competing and often seemingly incompatible theoretical approaches, a feat that nonevolutionary theorizing is hard-pressed to achieve. Evolutionary theorizing thus often transcends and even dissolves many prominent debates between different theoretical approaches in social sciences (Tang 2020).

It is on these grounds that I hope more students of IR can embrace the social evolutionary approach when tackling existing and emerging phenomena and puzzles.

References

- Adler, Emanuel. 2005. *Communitarian International Relations: The Epistemic Foundations of International Relations*. London: Routledge.
- Anghie, Antony. 2004. *Imperialism, Sovereignty and the Making of International Law*. Cambridge, UK: Cambridge University Press.
- Bardhan, Pranab. 2016. “State and Development: The Need for a Reappraisal of the Current Literature.” *Journal of Economic Literature* 54, no. 3: 862–892.

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Bourdieu, Pierre. 2005. *The Social Structures of the Economy*. Cambridge, UK: Polity Press.

Cederman, Lars-Erik, Kristian Skrede Gleditsch, and Julian Wucherpfennig. 2017. "Predicting the Decline of Ethnic Civil War: Was Gurr Right and for the Right Reasons?" *Journal of Peace Research* 54, no. 2: 262–274.

Clark, Ian. 2007. *International Legitimacy and World Society*. Oxford: Oxford University Press.

Danchin, Étienne. 2013. "Avatars of Information: Towards an Inclusive Evolutionary Synthesis." *Trends in Ecology & Evolution* 28, no. 6: 351–358.

Danchin, Étienne, Anne Charmantier, Frances A. Champagne, Alex Mesoudi, Nenoit Pujol, and Simon Blanchet. 2011. "Beyond DNA: Integrating Inclusive Inheritance into an Extended Theory of Evolution." *Nature Reviews Genetics* 12, no. 7: 475–486.

Darwin, Charles. 1859. *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. London: John Murray.

De Nevers, Renee. 2007. "Imposing International Norms: Great Powers and Norm Enforcement." *International Studies Review* 9, no. 1: 53–80.

Dennett, Daniel Clement. 1995. *Darwin's Dangerous Idea: Evolution and the Meanings of Life*. London: Allen Lane.

Dobzhansky, Theodosius. 1973. "Nothing in Biology Makes Sense Except in the Light of Evolution." *The American Biology Teacher* 35, no. 3: 125–129.

Elias, Norbert. (1939) 1994. *The Civilizing Process*. Rev. ed. Oxford: Blackwell.

Emirbayer, Mustafa. 1997. "Manifesto for a Relational Sociology." *The American Journal of Sociology* 103, no. 2: 281–317.

Emirbayer, Mustafa, and Ann Mische. 1998. "What Is Agency?" *The American Journal of Sociology* 103, no. 4: 962–1023.

Gilpin, Robert. 1981. *War and Change in World Politics*. New York: Cambridge University Press.

Hayek, Friedrich A. 1978. *New Studies in Philosophy, Politics, Economics and the History of Ideas*. London: Routledge and Kegan Paul.

Jervis, Robert. 2002. "Theories of War in an Era of Leading-Power Peace." *American Political Science Review* 96, no. 1: 1–14.

Keohane, Robert O. 1984. *After Hegemony: Cooperation and Discord in the World Political Economy*. Princeton, NJ: Princeton University Press.

Levy, Jack S. 1994. "Learning and Foreign Policy: Sweeping a Conceptual Minefield." *International Organization* 48, no. 2: 279–312.

Lewontin, Richard C. 1983. "Gene, Organism, and Environment." In *Evolution from Molecules to Man*, edited by D. S. Bendall, 273–285. Cambridge, UK: Cambridge University Press.

Mann, Michael. 1986. *A History of Power from the Beginning to A. D. 1760*, vol. 1 of *The Sources of Social Power*. Cambridge, UK: Cambridge University Press.

Mayr, Ernst. 2001. *What Evolution Is*. New York: Basic Books.

Mearsheimer, John J. 2001. *The Tragedy of Great Power Politics*. New York: W. W. Norton.

Modelski, George. 1990. "Is World Politics Evolutionary Learning?" *International Organization* 44, no. 1: 1–24.

Odling-Smee, John. 2010. "Niche Inheritance." In *Evolution: The Extended Synthesis*, edited by Massimo Pigliucci and Gerd B. Müller, 175–207. Cambridge, MA: Massachusetts Institute of Technology Press.

Odling-Smee, John, and Kevin N. Laland. 2011. "Ecological Inheritance and Cultural Inheritance: What Are They and How Do They Differ." *Biological Theory* 6, no. 3: 220–230.

Paul, T. V. 2018. *Restraining Great Powers: Soft Balancing from Empires to the Global Era*. New Haven, CT: Yale University Press.

Simmons, Beth A. 2000. "International Law and State Behavior: Commitment and Compliance in International Monetary Affairs." *American Political Science Review* 94, no. 4: 819–835.

Spruyt, Hendrik. 1994. *The Sovereign State and Its Competitors: An Analysis of Systems Change*. Princeton, NJ: Princeton University Press

Spruyt, Hendrik. 2000. "The End of Empire and the Extension of the Westphalian System: The Normative Basis of the Modern State Order." *International Studies Review* 2, no. 2: 65–92.

Tang, Shiping. 2008. "From Offensive to Defensive Realism: A Social Evolutionary Interpretation of China's Security Strategy." In *China's Ascent: Power, Security, and the Future of International Politics*, edited by Robert S. Ross and Zhu Feng, 141–162. Ithaca, NY: Cornell University Press.

Tang, Shiping. 2009. "The Security Dilemma: A Conceptual Analysis." *Security Studies* 18, no. 3: 587–623.

Tang, Shiping. 2010. "Social Evolution of International Politics: From Mearsheimer to Jervis." *European Journal of International Relations* 16, no. 1: 31–55.

Tang, Shiping. 2011a. *A General Theory of Institutional Change*. London: Routledge.

Tang, Shiping. 2011b. "Foundational Paradigms of Social Sciences." *Philosophy of the Social Sciences* 41, no. 2: 211–249.

Tang, Shiping. 2013. *Social Evolution of International Politics*. Oxford: Oxford University Press.

Tang, Shiping. 2016. "The Reaches of the International System: Six Channels." Working Paper. Available at <https://www.academia.edu/25924033/>

The_Reaches_of_the_Social_System_Six_Channels

Tang, Shiping. 2017a. "Understanding Ethnic Conflict: Four Waves and Beyond." *Oxford Research Encyclopedia of Politics*. doi:10.1093/acrefore/9780190228637.013.340.

Tang, Shiping. 2017b. "Toward Generalized Evolutionism: Beyond Generalized Darwinism and Its Critics." *Journal of Economic Issues* 51, no. 3: 588–612.

Tang, Shiping. 2020. *On Social Evolution: Phenomenon and Paradigm*. London: Routledge.

Tang, Shiping. n.d. "Various Notions of Evolutionism: (Neo-)Darwinian, (Neo-)Lamarckian, and Spencerian." Unpublished manuscript.

Tang, Shiping, and Joey Shi-Ruey Long. 2012. "America's Military Interventionism: A Social Evolutionary Interpretation." *European Journal of International Relations* 18, no. 3: 509–538.

Thayer, Bradley A. 2004. *Darwin and International Relations: On the Evolutionary Origins of War and Ethnic Conflict*. Lexington: University of Kentucky Press.

Tilly, Charles. 1975. "Reflections on the History of European State-making." In *The Formation of National States in Western Europe*, edited by Charles Tilly, 3–83. Princeton, NJ: Princeton University Press.

Tilly, Charles. 1985. "War Making and State Making as Organized Crime." In *Bringing the State Back In*, edited by Peter B. Evans, Dietrich Rueschemeyer, and Theda Skocpol, 169–191. Cambridge, UK: Cambridge University Press.

Tilly, Charles. 1992. *Coercion, Capital, and European States, AD 990–1992*. Cambridge, UK: Blackwell.

Waltz, Kenneth N. 1979. *Theory of International Politics*. Reading, MA: Addison-Wesley.

Zacher, Mark W. 2001. "The Territorial Integrity Norm: International Boundaries and the Use of Force." *International Organization* 55, no. 2: 215–250.

Notes:

(1.) Some of the discussions and texts draw from my recent book, *On Social Evolution: Phenomenon and Paradigm* (New York: Routledge, 2020).

(2.) For instance, a creationist explanation of the diversity of the biological world must employ numerous designs and divine interventions to explain why birds have feathers and chameleons can camouflage themselves.

(3.) The most prominent external force and factor, of course, has been God or “the Creator.”

(4.) In contrast, Waltz suggested that the selection of balancing behavior does not need rationality (i.e., learning), even though he explicitly stated that “if some do relatively well, others will emulate them or fall by the wayside” (Waltz 1979, 118) and emulation is a form of learning.

Shiping Tang

Fudan University