Chapter 2

Theorizing International Relations

Emergence, Organized Complexity, and Integrative Pluralism

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Introduction

Since its inception at the end of World War I, the discipline of international relations (IR) has seen a steady increase in the number of competing theoretical perspectives. Such has been the pace of this growth in recent years that it is probably an impossible task to catalog them all, let alone possess a comprehensive understanding of them. There are almost as many approaches as there are theorists. Theoretical diversity is not necessarily a problem. Indeed, a commitment to theoretical pluralism is often assumed to be integral to all science. The growth of scientific knowledge requires the operation of an open-ended market in ideas. Thomas Kuhn (1962), of course, challenged this idea and argued that what enabled scientific progress was a dominant paradigm around which research revolved. Despite the widespread influence of Kuhn’s ideas, the incipient conservativism at the heart of his model of science was always likely to prove a problem for the social sciences (Fuller 2000; 2003). Unlike the natural sciences, the social sciences are unable to construct decisive test situations that can settle theoretical disputes, to the general satisfaction of a majority of the research community. Given this epistemological uncertainty, accepting some theoretical diversity seems the rational choice.

The commitment to theoretical pluralism can also be defended on the basis of a supposed relationship between democracy and science (Popper
1952). Scientific progress, it is argued, is best achieved under conditions that foster debate and allow the challenging of conventional wisdom. Likewise, there is a widely held belief within the scientific community that the values of science—honesty, objectivity, and a respect for the intrinsic merit of a wide range of ideas and opinions—are essential to a democratic culture. In democracies, diversity and the safeguarding of minority opinions are seen as inherent goods. Any attempt to stifle alternative views, or underrepresented groups, is tantamount to giving up the democratic ideal.

Yet, as with contemporary debates surrounding the limits of free speech in democratic societies, pluralism in the social sciences poses problems. One aim of any science is to sift through knowledge claims in the hope of discarding those that fail to provide a valuable contribution to the overall stock of knowledge. Science is a competitive environment, and many social scientists are concerned that an open-ended commitment to pluralism may lead to a debilitating relativism and the loss of all critical standards. An alternative view presents theoretical pluralism in an altogether differing light. According to this view, pluralism is tolerated only because it represents a temporary phenomenon. Eventually, the social sciences will mature and develop a consistent scientific methodology such that theoretical disputes can be settled. Theoretical pluralism can be tolerated, but only on the basis of methodological unity. What the social sciences need is a rigorous, and clearly defined, set of scientific methods that constitute the framework through which theoretical disputes can be settled. The unity of method will eventually lead to theoretical unity. As King and colleagues (1994, 9) put it, the “unity of all science consists alone in its method.” The steady accumulation of knowledge generated through the application of scientific methods will eventually place the social sciences on as secure an epistemological footing as the natural sciences. This position is still committed to pluralism, but pluralism is now a means and not an end. Pluralism is tolerated because it exists within a horizon of unity. It is a pluralism that serves the purposes of unity; unity-through-pluralism (UtP).

The UtP position is often linked to reductionist views of science (Mitchell 2003). According to reductionists the various scientific disciplines are necessary only insofar as the overall stock of scientific knowledge is incomplete. Ultimately, reductionists believe that there will eventually emerge a set of explanations at the most basic level that will explain all other levels. Typically, physics has been portrayed as the master science, which will, in due course, provide a “grand theory of everything” (Weinberg 1992). Extreme reductionist views are not common in international relations and political science. One notable exception is Hans Morgenthau’s version of political
realism. According to Morgenthau, objective laws rooted in human nature govern politics (Morgenthau 1973). This locates the real causes of political conduct in biology and portrays the political science disciplines as forms of social engineering or technology-based kinds of knowledge.

Although Morgenthau’s is a radical version, other less extreme forms of reductionism are common. Methodological individualism, for example, suggests that the ultimate explanatory variable in any social theory should be the individual (Bhargava 1993). Methodological individualism underpins many theories and approaches to political science, most notably rational choice theory (Green and Shapiro 1994). Irrespective of their theoretical orientations, many international relations scholars have suggested that theories be grounded in microlevel phenomena. Although theoretically diverse, these claims can be understood as reactions to various modes of structural theory within the discipline. Liberals and neoclassical realists, for example, proceed by translating individual preferences into collective political phenomena in an effort to analyze international politics (Moravcsik 1997; Schweller 2003). Even contemporary neoliberals (or institutionalists as they are often termed), who, despite a sharing neorealist structuralist assumptions, argue that institutionalist theory is moving “farther from its neorealist roots, putting more emphasis on agency” (Keohane and Martin 2003, 83). Likewise, many constructivists have attempted to distance themselves from Wendt’s structuralist constructivism and develop an account of international relations based on microphenomena. As Jeffrey Checkel (1998, 342) puts it, the problem for constructivists is “how to get from microfoundations to outcomes.” When viewed in this context it may be that methodological individualism is undergoing something of a renaissance in international relations (Leon 2006).

Methodological individualism and theoretical pluralism, however, are not incompatible positions. It is possible to agree that the individual is the ultimate source of explanation in the human sciences, but disagree about what explains this behavior, or what the most important aspects of it are. This suggests that reductionism and the UtP position are not as closely related as some philosophers of science seem to suggest (Mitchell 2003, 1). We can, however, contrast the UtP position to the alternative view, which sees little or no prospect of any type of theoretical unification. Given the limited prospects of settling theoretical disputes at the epistemological level, the social sciences should embrace an open-ended commitment to all theoretical approaches. According to advocates of this view, we should embrace a strategy of letting “a thousand theoretical flowers bloom.” This position can be defended on two grounds. First, it is suggested that since theoretical diversity is itself a necessary component in the growth of knowledge, we
should embrace a plurality of differing perspectives (Feyerabend 1975). For the committed pluralist, unity is neither possible nor desirable; but rather, it is the intrinsic good of pluralism itself which is to be defended. Pluralism here is an end, not a means. Only pluralism can deal with a multifaceted and complex reality.

An alternative defense of pluralism rests on the belief that the epistemological uncertainty at the heart of all social science requires an acceptance of all theoretical perspectives. According to this view, pluralism does not lead to more and better knowledge, but rather, given the lack of agreed epistemological standards for assessing competing knowledge claims, we should embrace all perspectives. Theoretical perspectives according to this view are likened to political positions, with “right” and “wrong” functioning as ethical or aesthetic values (Campbell 1998).

Neither the UtP viewpoint nor the various defenses of pluralism seem attractive positions for any science to adopt. Given the history of scientific progress, it would seem inappropriate for any science to adopt theoretical conformity as a goal. Epistemologically, how would we know when we had reached a point where theoretical pluralism is no longer required? The history of science is replete with examples of well-established bodies of knowledge being overturned. Competing visions of science mean that there are no agreed standards for arriving at a unity of method (Chalmers 1999; Godfrey-Smith 2003). Pluralism for the sake of pluralism, however, seems to lead to an incapacitating relativism, or what Yosef Lapid (2003) calls a “flabby pluralism.” A better term might be disengaged pluralism. No claim or viewpoint would seem to be invalid, and theorists are free to pursue their own agenda with little or no contact with alternative views. This is a disengaged pluralism because there is no attempt to specify the relationships between theories or to examine one’s own theoretical position in the light of alternative views. The absence of an agreed unity of method would also entail that the standards by which the various theories are to be judged would be internal to the theory (Smith 2003). This would be a disengaged form of pluralism with each theoretical perspective legitimating its claims solely on its own terms and with little reason to engage in conversations with alternative approaches. It is the kind of pluralism that finds its political expression in apartheid.

Despite these problems IR theory has taken a pluralist turn in recent years. Rudra Sil and Peter Katzenstein have articulated an influential argument that outlines an approach to knowledge generation predicated on what they call “analytical eclecticism” (Sil and Katzenstein 2010). Likewise, Patrick Jackson (2011) also attempts to construct a framework to guide inquiry in
IR that can help foster the cause of pluralism. Going even further, David Lake (2011) has argued that “isms are evil.” While laudable in their aims, what is often missing from these attempts to construct a pluralist approach to IR is an examination of the conditions of possibility for fragmentation. Why is the discipline so fragmented?

In this chapter, I want to explore an approach called “integrative pluralism” (Mitchell 2003). Integrative pluralism is the most appropriate strategy for IR to adopt for two reasons. First, at the level of ontology, I argue that the international political system is best understood through the related concepts of “emergence” and “organized complexity.” Because all human systems have this form, they require a plurality of explanations to deal with phenomena at differing levels and the complex differentiation of causal mechanisms within levels. But equally, at the epistemological level, the nature of theorizing itself, and the fact that no one theory could hope to grasp the complexity of global life, entails a commitment to integrative pluralism. However, even though there are sound ontological and epistemological grounds for pursuing integrative pluralism, there are two related factors that impede its development. First is the academic division of labor, which compartmentalizes knowledge into zones of expertise, which in turn, structurally impedes the development of interdisciplinary research needed to explain complex systems. Second is the structure of IR as an academic discipline, which, using a framework developed by Richard Whitley (2000), I will characterize as a fragmented adhocracy. A fragmented adhocracy is characterized by a low degree of reputational interdependency between competing research groups, with few organizational restrictions regarding the choice of theoretical framework or research methodology. It typically displays a relatively fragmented knowledge structure and an almost complete lack of agreement concerning the relative importance of different problems to be solved. As a consequence, the research activity within the field proceeds in an ad hoc, arbitrary, and incoherent manner, with limited attempts to integrate new solutions with the existing structure of knowledge. In such an intellectual structure the potential for integrated pluralism is low.

This chapter is structured in the following manner. First, I explain the properties possessed by systems that exhibit organized complexity and display emergent properties. Complexity thinking (CT) has already been discussed in the discipline and throughout the wider social sciences (Ablert and Hilkermeier 2004; Cilliers 1998; Cudworth and Hobden, 2011; Jervis 1997b; Rosenau 1990; Snyder and Jervis 1993). In general, however, these attempts have tended to take the formal characteristics of CT as given and apply them directly to political phenomena. The analysis of political systems
through CT, however, requires some modification. Hence, while political systems are self-organizing, they are also subject to various forms of control and direction. Second, I discuss the notion of integrated pluralism drawing on Sandra Mitchell’s distinction between theory as the abstract identification of causal mechanisms and explanation of open systems in concrete situations where multiple mechanisms are at play (Mitchell 2003). In this section I also examine some of the barriers to the development of integrative pluralism as a result of the intellectual structure of the field. Finally, I briefly discuss the problems surrounding the theorization of the international political system indicating both some general guidelines for the implementation of integrative pluralism, as well as sounding some words of warning about the possibility of producing knowledge of complex systems that might then be deployed in practice.

Properties of Complex Systems

It is important to distinguish complex systems from merely complicated ones. CT refers to systems that have a specific set of properties. Complicated systems, on the other hand, might appear to be complex, but unless they possess particular properties they would not be susceptible to analysis through CT. If political systems were complicated rather than complex, then an all-embracing theory of international politics might be possible. Many complicated systems have been accurately modeled by science. However, a complex system can never be modeled in a manner that accurately captures its dynamic diversity and modes of interaction. The key properties that mark out complex systems are their irreducible open nature, emergence, self-organization, nonlinearity, and feedback.

All natural and social systems are open systems, and this presents particular problems in terms of their theorization. In simple terms, a closed system is one that has no interactions with its environment. A closed system does not rely on external inputs from its environment or produce outputs into that environment. Its behavioral characteristics are self-contained, and its logics are internally determined. Closed systems do not occur spontaneously in nature and require human intervention. A good example here are laboratory experiments which are explicit attempts by scientists to isolate some or other mechanism from external influence in order to study its behavior (Hacking 1983). Once isolated the behavioral dynamics of the mechanism can be formulated safe in the knowledge that it is the isolated mechanism producing the observed effects. In practice no system can be
totally isolated in terms of interaction with its environment. In closed sys-
tems laws have uniform/linear effects. This means that it is possible to use
the responses to a small set of inputs to predict the response to any possi-
ble input. This makes it possible, in theory at least, to characterize the
system completely. If a system is closed, then the energy contained within
the system is also finite. Once the total sum of energy within the system
has dissipated, the system is said to have reached equilibrium. A system that
has reached equilibrium is a system that is dead; it is a system in which no
change occurs. As Erwin Shroedinger (1944) argued, when a system is iso-
lated, life will eventually come to an end. In a system that reaches this state
no observable events occur. This is known as the state of thermodynamical
equilibrium, or of “maximum entropy.” An organism lives because it absorbs
energy from the external world and processes it in order to maintain itself
and avoid falling into a state of equilibrium. Although we talk in terms of
social systems reaching states of equilibrium, they never actually achieve this
state. Social systems are always undergoing change.

An open system, on the other hand, interacts with its environment.
Biological and social systems are “open” systems in this sense. As W. Koehler
(1981, 73) puts it, “no organism is detached from the rest of the world to
an extent that would make our [closed-system] principles directly appli-
cable to living systems.” The behavioral dynamics of open systems cannot be
explained solely in terms of their internal logics, but rather, depend upon a
specification of their relationships with their environment. This requires a
consideration of the mechanisms and rules determining their regulation of,
and adaptation to, external influences and a consideration of how that exter-
nal environment structures the internal dynamic of the system under study.
Given this, theories of open systems must take into account the external
environment not merely as a complicating factor, but rather as an intrinsic
aspect of the system itself. Open systems inevitably require multidimensional
and holistic forms of theory.

A sophisticated attempt to lessen the impact of open systems on social
theorizing comes in the form of autopoesis, or what are known as self-
producing systems (Mingers 1995). This is a variation on the distinction
between open and closed systems and was originally developed from the
work of Maturana and Varela (1980; 1987). The theory originates in biology,
where it was initially formulated to explain the difference between living and
nonliving systems. Living systems are in a constant state of self-production,
using the individual components that constitute them in the first place to
restructure the system in the on-going process that we call life. Accord-
ing to Maturana and Varela, systems such as this are self-referential and
organizationally closed. It is important to be clear on what this claim entails. Maturana and Varela distinguish between structure and organization. Structure refers to the actual configuration of systems (the components, relations, and processes), while organization is a subset of the relations that apply to all systems of a similar type. Organization specifies the formal characteristics of a system that make it the type of system it is, whereas structure refers to the actual dynamic development of systems in concrete situations. Thus all living systems share an autopoietic organization, but this organization can be realized in a multitude of different structures. Such systems are “organizationally closed” in terms of the relations of self-production, but “structurally open” in that actual systems interact with their environment through their components.

The most sophisticated application of this idea in a social context is that of Niklas Luhmann (1995). Luhmann's theory can be understood as an attempt at restricting the level of complexity in open systems. The core mechanism of Luhmann's social theory is communication. Social systems are theorized purely as systems of communication. In contemporary society, and perhaps as a result of technological developments and processes of globalization, communication is global; hence society today is a global society (Luhmann 1997). According to Luhmann a system is defined by a boundary between itself and its environment, and the boundary immunizes the system from the infinitely complex exterior. Because a system develops its own modes of operation communication within a system only selects a limited amount of information available from outside of the system. Hence, in this respect, any given system can be considered a zone of reduced complexity. Complexity is reduced because self-organizing systems emerge.

In terms of social systems Luhmann treats the various subsystems within society as themselves constituting individual, relatively isolated, autopoietic systems. Each distinct subsystem operates according to its own logic, but organizationally, each is similar insofar as communication is the sole mechanism of exchange in all systems. Equally, within any society certain subsystems will fulfill functions that contribute to “society” as a whole, but this is not a managed, or directed, process but happens more or less by chance, without an overarching vision of society. Again, according to Luhmann, each subsystem works strictly according to its very own logic and has no understanding of the way other systems operate; for example, the political system is about power and control; the economy is all about money. If Luhmann were correct it would imply the possibility of one theory accurately describing the logics of each subsystem. All that would be required would be one overarching theory of communication (the sole mechanism
of social exchange) and a theory of communication relevant to each domain or subsystem, in which case theoretical pluralism is not required, or at least not at the level of individual disciplines.

Luhmann’s theory is problematic on two interrelated grounds, both related to his treatment of the human individual. In Luhmann’s theory human beings are neither part of society nor of any specific subsystem. Obviously, any social system consisting of communication requires humans as a necessary channel for communication to occur. But according to Luhmann, humans are not integral to the system itself, but rather constitute an environmental resource that the system draws on in order to maintain itself. Humans are the medium through which communication takes place, but they are not themselves communicators. Luhmann supposedly once claimed he was not interested in people. The ethical and normative consequences of this position have led a welter of criticism directed at Luhmann (Habermas 1987). But Luhmann’s theory is both logically and empirically problematic without these moral objections.

First, in treating humans as mere communication ciphers, Luhmann replicates some of the worst excesses of systems theory. The “third wave of social systems theory,” as R. Keith Sawyer (2005, 10–26) calls it, explicitly attempted to introduce CT into system thinking without embracing this strict antihumanism. Indeed, the aim of CT is to show how complex systems emerge out of the interactions of their units. Reducing the units to communication and treating the system as organizationally closed might help reduce the levels of complexity, but it does not seem a realistic strategy for any social science to follow. In many respects Luhmann’s theory follows a path well trodden by many theories of social practice. Various forms of systems theory have ignored the individual and attempted to specify the formal characteristics of systems in the hope of reducing the complexity and contingency associated with individual behavior. Modern systems theory, however, sees complexity in the system itself. Human individuals are not only parts of one coherent system—such as the political system—but are parts of many systems at the same point in time; the units are part of the complexity. Hence political actors are also economic actors, and vice versa. Treating the two systems as wholly distinct fails to recognize the connections between them. Interestingly, this point indicates that the theorization of complex systems does not just imply theoretical pluralism at the disciplinary level, but that interdisciplinary research is also required.

The discipline which has most depended upon treating social systems as closed is economics; although approaches to political science that have been colonized by methodologies imported from economics adopt a similar
view. Given the subject matter of economics, it is difficult to explain why it became so reliant on a methodology that assumes a closed system. Yet there is no doubt that such a commitment to closure exists (Lawson 1997; Rothheim 1998). Part of the answer might be some perceived link between mathematical models and science. The advocates of this approach clearly view themselves as taking a logical, more scientific, approach that is superior to the alternatives.

Early economic theory did not depend on the assumption of closure. Classical economic thinkers, such as David Hume and Adam Smith, embraced a relatively open system view. Hume believed that legal institutions demonstrated emergent properties and brought about “spontaneous order” through the independent actions of individuals (Hume 1986). This idea is replicated in theoretically varied attempts to explain the emergence of markets and other economic institutions (Hayek 1982; Olson 2000). In addition, Adam Smith dealt with the complex interactions of individual motives and related these to external factors (Smith 1984). It is difficult to view the “invisible hand” as anything other than an emergent property that comes about through the self-organizing principles of the system. Both Hume and Smith imagined an economic system open to external influences and subject to change. The idea that the economic system is open, complex, and displays emergent characteristics contrasts starkly with the assumptions underpinning the restrictive methodology of contemporary economics.

Another important property of complex systems is that they exhibit properties not expressible in terms of the constituent parts, and they have a propensity for novelty. This is the issue of emergence. There are three core ideas that underpin the notion of emergence. First is the idea of “super-venience”; this means that the emergent properties will no longer exist if the lower level is removed. Second, emergent properties are not aggregates; that is, they are not just the predictable results of the summation of unit properties, and they produce novelty into systems. Third, to be considered emergent, new entities, processes and so on should be causally effective; emergent properties are not epiphenomenal (either illusions or descriptive simplifications only). This means that the higher-level properties should have causal effects on the lower-level ones.

Emergence is often depicted as a process in which macroprocesses and properties “emerge” from micro processes and properties, that is, the properties of the whole emerge from the properties of its parts. These new entities have novel properties in relation to the properties of the constituent parts. In particular, it is not only that the emergent level has its own laws and modes of operation but rather, that it can interact, and causally impact upon, the parts from which it emerged—a process known as downward causation.
The concept of emergence is a central thread uniting many nonreductive approaches to social science. In this respect Durkheim was a key figure, and emergence was a major component of his theoretical and empirical work (Sawyer 2005, 100–24). Durkheim argued that the combined interaction of individuals gives rise to a new emergent entity called society and that this entity could only be understood on its own terms and not in terms of psychology, or even worse, human nature. For Emile Durkheim (1964, 98–103), “society is not a mere sum of individuals;” and if it were, “sociological laws can only be a corollary of the more general laws of psychology; the ultimate explanation of collective life will consist in showing how it emanates from human nature in general.” In the context of IR theory Durkheim was certainly vindicated when Morgenthau produced just such a theory of international politics. The emergentist reaction to Morgenthau came from the structural realism of Kenneth Waltz (1979).

Although not explicitly employing emergence as a central category it is clear that Waltz was keen to develop the notion of an international system structure that has the potential to causally influence the behaviour of its constituent units. His damning critique of “reductionism” begins with the specification of an international “system” composed of a “structure” and “interacting units” (Waltz 1979, 79). Noting that “the same causes sometimes lead to different effects, and the same effects sometimes follow from different causes,” he concludes that “reductionist explanations of international politics are insufficient” (Waltz 1979, 37). In rejecting reductionism Waltz (1979, 39) argued that “outcomes are affected not only by the properties and interconnections of variables but also by the way in which they are organized.” According to Waltz the structure of the international political system possesses causal properties which produce effects, “shaping and shoving” the behavior of the units in predictable ways.

All structural theories of international politics rely on emergence, even if they do not explicitly refer to this process. Although Wendt’s structuralism idealism disagrees with Waltz about how to define structure, he treats his “cultures of anarchy” in emergentist terms, arguing that they have a logic that operates independent of the beliefs of any given individual (Wendt 1999). Wallerstein’s systemic perspective likewise treats the relationship of dependency as an emergent property of the system as a whole, which can only be explained at the level of the system and not at all in terms of the behavior of the individual units (Wallerstein 1976; 1979). Emergence has important implications for how we theorize. It requires that we approach theoretical problems from the standpoint that simple relationships between any two phenomena or elements cannot, in aggregation, provide adequate
explanations of the behavior of real world phenomena. Consequently, emergence encourages a multilevel mapping of processes and interrelationships, which despite the increased level of complexity, improves the standard of analysis.

Related to the concept of emergence is nonlinearity. Nonlinear systems are systems whose dynamics are not expressible as a sum of the behaviors of its parts. Most physical systems are inherently nonlinear; examples of linear physical systems are rare. The behavior of nonlinear systems is not subject to the principle of superposition. According to this principle it is possible to analyze the behavior of linear physical systems by considering the behavior of each component of the system separately and then summing up the separate results to find the total result. If this principle were to hold in social systems it would imply that such systems did not display emergent properties and that reductionism was a valid strategy. In nonlinear systems small changes in any part of the system, or in the system environment, can produce large changes throughout the system. It is this idea that underpins notions of chaos and “butterfly effects” (Lewin 2001; Gribbin 2004).

Taken together emergence and nonlinearity imply a complex view of causal processes. Any system displaying these two properties will not be susceptible to analysis predicated on the attempt to explain outcomes on the basis of a summation of its parts. Nonlinear systems that possess emergent properties are fundamentally incompatible with a scientific method that examines phenomena through the isolation of elements into dependent and independent variables. CT maintains that this approach is incapable of capturing the flux of causation in concrete situations.

Social systems, although complex, are not chaotic or disordered. As such, they can be understood as a form of organized complexity. The question is, How does this organization occur? The answer highlights another key property of complex social systems, and this is their propensity to self-organize. Self-organization can be defined as the spontaneous creation of a coherent pattern out of local interactions. As such self-organizing systems can be characterized as bottom-up systems. The organization that emerges in such systems comes about through the interactions of a mass of individual elements rather than the following of a plan or the influence of a single intelligent executive branch or architect. In open systems the dynamics of self-organization can be affected through an internal change in the system or through changes in the environment. Although many systems are self-organizing, they do not all display the same kind of characteristics or internal structure. Equally, although all social systems begin as self-organizing systems, over time they may develop mechanisms that attempt to exercise some
control and direction over the system. Good examples here are the political system and the economic system. An economic system is self-organizing insofar as it changes its internal behavioral patterns and structure in response to a large number of factors (money supply, rate of growth, political context, resource availability etc.). Individual responses to these factors vary across actors with no single actor possessing complete knowledge of the complexity of the overall situation. Nonetheless, even though individual action only takes place within a limited understanding of its place in outcomes, order does emerge at the system level.

However, evolved social systems do exhibit some control mechanisms that attempt to steer the direction of the system as a whole. Governments, political elites, intellectuals, spiritual leaders, and business leaders all attempt to exercise control on the system through the implementation of policies on the basis of some understanding of perceived outcomes. The effects of these interventions, however, are only predictable in the short term since the spontaneous adjustment of the system involves the complex interaction of too many factors, many of which cannot be controlled at all. The fact that social systems do attempt to react, whether steered or not, in specific ways to changes within the system or the environment, however, does mean that they can be considered as complex adaptive systems (Holland 1995).

Complex adaptive systems contain parts which possess memories and have a series of detailed responses to the same, as well as different, contexts/scenarios. They often have the ability to learn from their mistakes and generate new responses to familiar and novel contexts. Feedback is an integral part of this process, since in their attempts to deal with changes in the system or the system environment, agents feed new processes into the system. Feedback is essentially a series of mechanisms that provide a connection between the output of a system and its input, in other words a causality loop. Feedback can be negative (tending to stabilize the system—order) or positive (leading to instability—chaos). The possibility of exercising some control in complex systems through feedback mechanisms is nicely captured in contemporary debates surrounding systems that can be considered teleological. Although contentious, discussion surrounding teleology in CT has concentrated on the distinction between a system displaying self-organizing principles, or one displaying “directedness,” or purpose by design; evolution for example (Bar-Yam 1997). Because social systems do, however chaotically, consciously attempt to adapt to change through both planning and feedback they cannot be considered as purely self-organizing. Social systems display both self-organizing properties and organized properties, which probably makes it even harder to theorize them.
The idea of organized complexity and self-organization has been articulated in IR by Waltz (1979, 12). For Waltz (1979, 88), the organizing principle of the international states system is “decentralized and anarchic.” Nonetheless, despite being “decentralized and anarchic,” patterns of seemingly organized behavior nevertheless emerge, which he argues “derive from the structural constraints of the system” (Waltz 1979, 92). Drawing on micro-economic theory Waltz also alludes to the ability of social systems to self-organize: “order is spontaneously formed from the self-interested acts and interactions of the individual units” (Waltz 1979, 89). Hence, “[o]rder may prevail without an orderer; adjustments may be made without an adjuster; tasks may be allocated without an allocator” (Waltz 1986, 67). In the final analysis, however, Waltz’s theory disregards these valuable insights in the hope of producing epistemological order through ignoring the more difficult aspects of complex systems in the hope of producing a parsimonious theory of international politics. In effect, he fails to heed his own warning that “[o]ne must choose an approach that is appropriate to the subject matter” (Waltz 1979, 13).

Integrative Pluralism and Institutional Structure

Given the properties possessed by complex social systems, what are the limitations on theorizing them? Even in a relatively simple complex open system there may well be multiple emergent levels and potentially hundreds of interacting feedback loops. Even if we had accurate knowledge of how many levels and an appreciation of all their properties this would still provide us with little understanding of how that system will behave. Causality is such systems is both networked and summative, making it very difficult, if not impossible, to untangle the contribution of individual causal mechanisms, or combinations of them, in explaining specific outcomes. In complex open systems often the only way to determine what is happening, and why, is to sit back and watch the process unfold.

The idea of sitting back and watching, however, is the empiricist fallacy; in order to watch we are going to have to have some idea of what it is we are looking for, and we cannot look for everything at once. Reducing complexity is one of the functions of theory. “Theory,” as Waltz (1979, 8) puts it, “isolates one realm from all others in order to deal with it intellectually.” In building representations of open systems, we are forced to leave things out. All theories, insofar as they attempt to isolate and identify the key components and patterns of interaction between elements, achieve
their aims through abstraction. The process of abstraction is necessarily an attempt to reduce complexity (Sayer 1992). The level of abstraction possible while still permitting a theory to be “realistic” is always questionable. The extent to which abstraction is justified in modeling any system begins with an inherently subjective judgment but will eventually require validation by the wider scientific community. The pursuit of realistic theories will require lesser degrees of abstraction but produce more meaningful but very specific outcomes. Those keen to identify general laws may therefore resort to a greater degree of abstraction in the attempt. Waltz adopts just this strategy; he hopes to explain a lot of behavior by a limited number of variables.

The distinction between open and closed systems becomes important here. Newton, for example, developed a set of equations that could be applied to the real world, by assuming a closed system. He produced a model that represented a determinate system that was amenable to solution by calculus. Newton’s system is a closed system because the equations rely on the fact that “no outside [effects] are to be considered” (Van Gigch 1974, 40). In many respects Newton managed to successfully develop an approach to scientific investigation that was to dominate the natural sciences because the systems he studied were susceptible to such an abstraction. However, despite its success in this domain this particular form of abstraction is not universally applicable. As van Gigch states, “[w]e can only optimize closed systems as models in which all assumptions and boundary conditions are known. Real-life situations are open systems, the portions of which can, at best, be partially optimized” (Van Gigch 1974, 34). Closed-system approaches are typical of the physical sciences, where relationships between variables can be isolated in experiments in order to reveal causal “regularities” in their connections. Denied this opportunity, the biological and social sciences need to oriente their abstractions in a way that reflects the complex nature of their subject matter. Relationships analyzed in the social sciences are more difficult to isolate in any coherent and meaningful way since they are more complex, interrelated, and dynamic. In abstracting a complex system certain properties are necessarily lost.

This implies that we should embrace a pluralist view of theory since each theory may, in its own limited way, capture something important of the object under study. The suggestion that there are multiple valid representations of the same complex system is not new or particularly revolutionary. Different representations capture different aspects of the system’s behavior. The commitment to theoretical pluralism is an acceptance of the fact that there are multiple mechanisms at play in social outcomes. Because theories are abstractions, no theory can specify all the potential mechanisms that
might produce outcomes. Equally, even if we had complete knowledge of all potential mechanisms it would still not be possible to specify their interplay in concrete situations. As John Collier puts it, “[e]ven if we can specify precisely what it is to be an X, it may well not be possible to specify what X’s properties are without considering its relations to other things. This implies a sort of holism of a system and everything with which it interacts” (Collier 2004).

In this situation the importance of context becomes crucial. Each approach in the patchwork will be valid only for a certain range of contexts, so matching theory to context becomes fundamental. However, a feature of complex systems is that context recognition is not a trivial exercise. Contexts that appear similar may actually be quite different, so the process of matching theory to context is problematic at best. Furthermore, complex systems evolve (in a qualitative sense), so fundamentally novel contexts emerge requiring novel theoretical developments.

Sandra Mitchell suggests that one way to think about this is to view theory as an abstract characterization of mechanisms to be deployed in explanations. Theory, of necessity, can only partially describe a limited part of any complex system, yet events in a complex system evolve through the complex interactions of many causal components. “[A]t the theoretical level, pluralism is sanctioned. At the concrete explanatory level, on the other hand, integration is required. However complex and however many contributing causes participated, there is only one causal history that, in fact, has generated the phenomenon to be explained” (Mitchell 2003, 216). Accepting this view, however, requires a reconsideration of the claim that theory is about explaining the relationship between laws (Waltz 1979, 5). Laws, according to the view that dominates IR, are an “observed regular relationship between two phenomena” (Van Evera 1997, 8). Or they can be considered as “a regularity, or repeating pattern, that describes a causal relationship between two or more factors” (Dressler 2003, 390). This view of law is embedded in a Newtonian closed-system view of the world. However, laws in complex open systems do not operate in this way. And the process of theorizing does not depend on explaining relationships between laws, but rather on specifying the properties and potentials of mechanisms and processes. Most theory in IR already engages in this even if it is not explicitly acknowledged.

Waltz, for example, and despite his strong articulation of theory as an explanation of laws, provides an account that specifies the causal power of the structure of the international political system. Certainly, on the basis of this specification, he suggests that some relationships might be law-like, but these conclusions are only possible if the structure has the causal powers he
has ascribed to it. Much the same can be said of Wendt’s alternative theory of the structure of the system. Rejecting Waltz’s overly materialist account of system structure, he suggests that we conceive of the structure in terms of competing cultural logics. He does not attempt to specify a relationship, or regular pattern, between these differing logics but rather articulates what effect they may have in shaping international outcomes. That is, he describes the causal power they are said to possess. On the basis of either theory it may well be that enough empirical research may one day demonstrate that there is a relationship between X structure and Y outcome. And if that were to happen we might be entitled to talk in terms of a law.

However, the complete absence of any such laws in international relations does not suggest the strategy is turning out to be a productive one. Moreover, the nature of complex systems provides an explanation of why such laws have yet to be discovered. Put simply, there aren’t any. In which case, defining theory as the explanation of laws and defining laws as repeating patterns that describe a causal relationship between two or more factors seems doomed to fail. Empirical work, then, can be understood as the study of the interactions of theoretically grounded mechanisms in concrete explanatory problems. Such work will always be embedded within theory, but equally the results may actually lead to conclusions that contradict the theory. How is this possible? The answer to this question demonstrates both the possibility of integrative pluralism and how it is already implemented in practice.

All empirical work proceeds on the basis of some theory or other, but researchers are generally aware of other theories surrounding a given object domain. Obviously in the social sciences, it is not possible for any researcher to claim expertise in all theories. Nonetheless, the theoretical framework chosen for any given project will have been developed through a consideration of alternative views, even if these have only been identified in the process of constructing a literature review. As research proceeds through the design and implementation stages, the researcher, although pursuing the question through a chosen theoretical framework, nonetheless remains cognizant of the alternative views. Often disconfirming results of particular pieces of research are only recognized as being disconfirming because the researcher understands the results, not just as disproving the adopted theory, but lending support to another. In this sense integrated pluralism is at the heart of all research. The matching of theoretical positions to problems is not an arbitrary process but relies on the ability of the researcher, or research team, to make an informed decision about how to proceed. Equally, criticism of any piece of social research comes not only (or normally) from within one
perspective but from theoretical competitors keen to demonstrate alternative views (Wight 1996). Hence integrative pluralism features at the beginning of every research project and at its end.

The fact of theoretical pluralism in the practice of research should not be taken to suggest that all theoretical positions are capable of being integrated in a straightforward manner. Some theories explicitly rule out a consideration of alternatives. But which ones can be integrated and which ones cannot requires a disciplinary conversation prepared to accept that integrative pluralism is at least a possibility. Current theoretical debate in the discipline does not seem conducive to this discussion. Theories seem to function as identity markers within a social system suffused by battles over resources and power. This should not surprise us. Academic disciplines, as social systems, are themselves complex, self-organizing systems, and as such, they possess all the properties detailed above. As a self-organizing system, however, we can at least recognize that we get the intellectual structure that we create (within the limits of already existing structures and environmental constraints), and this opens up the possibility of change, assuming of course we desire it. But change to what end? What institutional arrangements are more likely to facilitate tolerance, learning, and conversations? What are the conditions that might surround productive scholarly exchanges in the field? How might we restructure the field to increase levels of theoretical exchange? Answers to these questions can only be made on the basis of some theory that identifies some of the mechanisms that create an intellectual structure that produces little integrative pluralism.

According to Richard Whitley (2000), scientific disciplines can be understood as reputational organizations. In the sciences the primary mechanism for members to obtain a positive reputation, and hence an enhanced position in the hierarchy of the field, is to make contributions to the knowledge structure of their field. However, although all the sciences depend to some extent on reputation, the structural configuration varies across disciplines. Whitley identifies two mechanism that help explain the process of acquiring reputation: 1) degree of mutual dependency and 2) degree of task uncertainty.

The degree of mutual dependency refers to the process through which researchers in a discipline are dependent on each other to obtain a reputation. Disciplines that have an applied focus will be very open to their environment; hence reputational mutual dependency will be low, since the reputation of an individual researcher may be less dependent on colleagues than on external bodies. As one would expect in complex systems, differences in this dynamic can occur within systems. Hence political scientists
in America have a tradition of interaction with political policy-making elites that those working in Britain do not. The political system in the United States constitutes a more open environment for political scientists than does the British political system. Of course, this is not a uniform process, and some political scientists in Britain do gain some reputational status from external involvement. In a discipline that produces little in the way of applied knowledge, the researchers have to rely on each other for obtaining their reputation. Hence, in such disciplines the process of gaining this recognition is much more dependent on the internal structure of the discipline.

The degree of task uncertainty is related to the uncertainty that surrounds any research when attempting to solve a specific problem. One of the claimed functions of science is to produce new knowledge. Yet, what counts as new knowledge depends, to a large extent, on the background knowledge of the field. If the background knowledge of the field is ordered, systematic, exact, and generalizable, then it increases the ease by which a new contribution can be assessed. Although an unlikely scenario, a good example of this might be a field that has one dominant paradigm. In such a field the background knowledge will be well structured, clear, and comprehensible to all working within the field; hence the task uncertainty of an individual researcher will be low.

Whitley also differentiates between technical and strategic task uncertainty. Technical task uncertainty refers to the degree of disciplinary inconsistency and variability in relation to the methods and procedures accepted to solve problems. In disciplines that are methodologically diverse, it will be difficult to interpret the relevance of test results; hence the degree of technical uncertainty is high. However, if a particular method has been universally accepted as the only legitimate method, the degree of technical task uncertainty is low. Task uncertainty also has a strategic/theoretical aspect. Researchers face uncertainty regarding which problems are important, and what the ultimate goals of their research are. In disciplines displaying a high degree of strategic/theoretical task uncertainty, researchers will be confronted with many different problems, and competing groups within the field will evaluate their relevance and importance differently. Whitley uses these two variables to identify seven structural configurations for scientific disciplines. The most important in terms of the social sciences are partitioned bureaucracy, the polycentric oligarchy, and the fragmented adhocracy.

IR, insofar as it can be considered a discipline, is a fragmented adhocracy. In disciplines of this type there is a high level of task uncertainty both in strategic and technical terms. The solution to both types of uncertainty is to align oneself with one particular approach. In fields of this type
certain research methods can be more fashionable than others, but this may change over time because of the unstable overall situation. The fragmented nature of the field ensures that there is also low mutual dependence between researchers when the field is considered as a whole, which produces high levels of mutual dependency within particular research perspectives. Moreover, as Whitley (2000, 159) puts it, “[t]ypically, these fields are open to the general ‘educated’ public and have some difficulties in excluding ‘amateurs’ from competent contributions and from affecting competence standards. The political system is therefore pluralistic and fluid with dominant coalitions being formed by temporary and unstable controllers of resources and charismatic reputational leaders.”

Fragmented adhocracies display intellectual variety and fluidity with no coherent configuration of clearly defined problem areas. In the absence of clearly demarcated problem areas in need of research, interaction between theoretical perspectives tends to operate on the metatheoretical level. Discussions surrounding ontology, epistemology, and the methodology of research replace the construction of new theories and research programs. To the outsider it is often difficult to identify what the participants do that makes them operate as a whole. There may be no strong coordinating mechanisms that systematically interrelate research results and strategies. No single group controls the discipline and is able to enforce norms of agreed research practices and general research strategies. There may be some interconnection across research groups, but specialization is a predominant feature. As a result, integration of research results into a general framework is not encouraged, and theoretical and empirical diversity is embraced for its own sake. Fragmented adhocracies function without coordination and central reputational control that results in diversity, specialization, and the lack of a theoretical center, or even a core problematique. The absence of such control allows room for more idiosyncratic research practices, since the individual researcher does not have to appeal to the wider research, or public, community for reputational gain. Interestingly, Whitley (2000, 168) argues that in fragmented adhocracies the only sustained controversy, over which the participants genuinely engage in debate, is that of theoretical diversity itself.

Conclusion

Most academic disciplines are in a constant state of flux. Nonetheless, it is possible for them to fall into one of two positions that lead to a state of equilibrium. Since equilibrium is death, disciplines approaching either
of these two states need to take remedial action if they wish to survive. The first position arises when there is too much emphasis placed on the exploitation of an already existing research program and too little attention paid to innovative new approaches. In this state, the discipline focuses on short-term gains more than long-term prospects and consequently reduces the adaptability of the field to new situations. IR in the US might be said to be close to such a state. Complex systems rely on their ability to adapt to survive. Unpredicted crises and chaotic events in the environment of a discipline in this state can lead to crises within the organizational structure such that it is unable to adapt to the changing circumstances in a meaningful way. The end of the Cold War and September 11 might be two such examples.

The second position occurs when there is too much emphasis placed on the exploration of new theories in order to establish new research programs. This leads to a failure to exploit the potential of already existing research programs. Disciplines in this state pay too much attention to the long-term activities of exploration compared to short-term gains achieved through exploitation. IR outside of the United States might be legitimately described as existing in this state. Although it might be concluded that this leaves them well placed to deal with novel events and processes, this is not the case. In complex systems, prediction of novel patterns and new structural configurations is impossible, hence while the development of new theories and approaches might be invigorating, it could also turn out to be a waste of time. Moreover, a discipline in a state of enhanced fragmentation suffers particular problems since it may produce too many new theories at a too fast pace for the scientific community to evaluate them as well as inhibit attempts to integrate them into a reasonably coherent knowledge structure.

Understanding the dynamics of complex systems requires a broader understanding of the complexity that exists within them, and this can only be achieved through some sort of integrative pluralism. The preferred state for all disciplines is to find a balance between exploitation and exploration. There is a complex balance between theoretical unity and theoretical pluralism. Contrary to both the unification and the pluralist position, this chapter argues for a position of “integrated pluralism.”

We need to be guided in our research practices by the fundamental properties that our systems embody, such as complexity, emergence, functionality, intentionality, and we hope, the capacity for symbolic communication. In such complex systems we are guided not just from the bottom up, but also from the top down. This is the most fundamental methodological principle of an organized complexity approach. Integrative pluralism is
not an attempt to forge competing knowledge claims into one overarching position that that subsumes them all. It is not a form of theoretical synthesis (Kratochwil 2003), nor is it a middle ground that eclectically claims to take the best of various theories to forge them into a “grand theory of everything” (Wendt 2000). Integrative pluralism accepts and preserves the validity of a wide range of theoretical perspectives and embraces theoretical diversity as a means of providing more comprehensive and multidimensional accounts of complex phenomena. This should not be misunderstood as a suggestion that a summation of the various theoretical claims will produce a complete account. In the course engagement some theories may ultimately be rejected, and others may undergo substantial change and modification; hence it is not a form of relativism.

Engaging in integrative pluralism carries risks, and some theories may not survive. Which theories contribute to our overall stock of knowledge, and which fall by the wayside, however, is not an issue that can be resolved solely in the heat of metatheoretical debate. The ultimate test of integrative pluralism will be practice, but this is a practice that cannot even begin unless we have some sense of its problems, possibilities, and practicality. Because there are no precise solutions for complexly organized systems, there is no one method for their study. It isn’t quite “anything goes,” but we cannot tell what “goes” without trying it, and there are no rules we can specify in advance that might tell us either how to proceed or when we are achieving success. Integrative pluralism requires creativity and openness that is not necessarily encouraged in current disciplinary research training. The idea of theoretical pluralism is not new, and it is rare to find any theorist consistently arguing against it. Despite the consensus surrounding the need for pluralism, however, there are few, if any, clear attempts to put it into practice (Steinmetz 1993). This chapter has attempted, in its own limited way, to begin the conversation; it cannot end it.

Bibliography


