Bio: Alexander D. Barder is currently Assistant Professor of International Relations at Florida International University in the Department of Politics and International Relations. He is the author of Empire Within: International Hierarchy and its Imperial Laboratories of Governance (Routledge, 2015) and (with François Debrix) Beyond Biopolitics: Theory, Violence and Horror in World Politics (Routledge, 2011). He is currently working on a conceptual analysis of crises theory for international politics.
Neo-Materialist Ecologies and Global Systemic Crises

Abstract: Liberal international relations theory largely rests on the assumption that the contemporary international liberal order is robust enough to withstand crises of political authority and/or economic slumps. Yet this raises a central question: what is a crisis in the deep principles of a global political and economic order? In this essay I seek to rethink crisis theory in light of prevailing assumptions about the longevity of the contemporary liberal international order. I examine how catalysts of crises can be the effects of non-human actors that intensify or crystalize moments of instability. From global ecological feedback loops, to high-frequency trading and automated factories, the processes of production and distribution increasingly reflects global networks that transcend day-to-day human decisions. Rethinking systemic crisis necessitates understanding the ways in which non-human actants constitute and destabilize larger political assemblages.

Keywords: systemic crisis, automation, ecology crisis, actant, post-human
Among liberal international theorists there is a widespread perception that past political and economic crises represent episodic moments rather than systemic instabilities in the contemporary global order. For John G. Ikenberry, in his recent book *Liberal Leviathan: The Origins, Crisis, and Transformation of the American World Order*, this is key to understanding the longevity of the present global order. As he argues, ‘the crisis of the old order transcends controversies generated by recent American foreign policy or even the ongoing economic crisis. It is a crisis of authority within the old hegemonic organization of liberal order, not a crisis in the deep principles of the order itself. It is a crisis of governance’ (Ikenberry, 2012, p. 6). This implies that while there may be a crisis of American hegemony the ‘deep principles of the order itself’ remain legitimate and enduring. Even a relative decline of American power or authority as a result of certain policy choices or the emergence of competing poles of power does not call into question the underlining principles of international liberalism – i.e. the proliferation of democratization, human rights regimes, continued importance of international legal regimes, and especially the continuation of capitalism through the percolation of open markets, free trade and the free flow of finance capital.

Ikenberry’s international liberal order is characterized by ‘trading opportunities, dispute-resolution mechanisms, frameworks for collective action, regulatory agreements, allied security guarantees, and resources in times of crisis’ (2011). The potential rise of the non-Western BRICS (Brazil, Russia, Indonesia, China and South Africa) does not represent a deep challenge to international liberalism. As Ikenberry argues in an essay in *Foreign Affairs*,

The struggle over international order today is not about fundamental principles. China and other emerging great powers do not want to contest the basic rules and principles of the liberal international order; they wish to gain more authority and leadership
within it. Indeed, today’s power transition represents not the defeat of the liberal order but its ultimate ascendance (Ikenberry, 2011).

Ikenberry’s understanding of the international liberal order is predicated on a model of consensual accommodation between a hegemonic, but liberal-democratic United States, and other liberal-democratic (and non-liberal) powers that are incentivized to maintain this order. At work is a ‘political bargain’ based on a conception of rational state interest as being deterministic for system maintenance and legitimacy (Ikenberry, 2012, pp. 213-215).

Ikenberry’s model of how rational state actors place themselves in consensual institutions effectively precludes a deeper investigation into the potential contradictions intrinsic to international liberalism. There is little attempt to grapple with – in his historical narrative of the American post-Second World War order – the hegemonic crisis of the 1970s, the Vietnam War and the collapse of a specific global economic and financial system (Bretton Woods), for example. By contrast, this is precisely what historical sociologists such as Giovanni Arrighi, Immanuel Wallerstein and others have been concerned with. Arrighi and Wallerstein point to the 1970s as a key moment marking the signal crisis of a specific form of American capital accumulation that emerged in the aftermath of the Second World War (Arrighi, 2009, 2010; Wallerstein, 2004). For Arrighi, in particular, the signal crisis marked by a crisis of profitability as a result of increased international intracapitalist (Japan and Germany) competition ran parallel with a deep-seated crisis of American political power as a result of the Vietnam War. This crisis in American hegemony was partly addressed by the process of financialization and its disastrous consequences for the global South (i.e. the series of debt crises), but also with the collapse of the Soviet Union and the end of the Cold War. Fast forwarding to 2003 and the invasion of Iraq, Arrighi claims that this renaissance of American foreign policy imperialism marks then a terminal crisis of this capitalist regime and
a potential global shift in the locus of capitalist production towards East Asia. Key for
Arrighi and Wallerstein is that geopolitical changes work in tandem with systemic economic
contradictions leading to global crises. Historical sociologists, as a consequence, are more
sensitive to the potential politico-economic conjunctions that give rise to systemic crises.

To be sure, the terminal crisis of this particular form of American-centric capital
accumulation with the war in Iraq in 2003 and especially embodied in the global
financial/economic crisis of 2008 is but one dimension of a set of global systemic crises
(Gills, 2010). For Barry Gills, in particular, what characterizes the crisis of our times is also a
‘world systemic crisis (including a global center-shift and hegemonic transition, and a
civilizational crisis, situated in the socio-historical itself’ (2010, p. 169). In particular, the
concept of ‘civilizational crisis’ borrowed from Ibn Khaldun and Robert Cox is important
here (see also, Pasha, 2010). This type of crisis is one whereby ‘the overarching ideational
forms, institutions and practices no longer correspond to or function effectively and
coherently with the underpinning material processes and structures’ (Gills, 2010, p. 177). A
civilizational crisis is one in which there are a significant set of tensions between such
ideational and material structures that ‘provokes a weakening of the hitherto dominant
mentalities that supported the reproduction of the historical structure’ (Ibid). The
incongruence between ideational forms and material processes and structures is, I believe,
becoming apparent in a world where material processes are becoming increasingly
independent of human agency. At a time when global environmental, financial and economic
processes are evolving gradually beyond human control, the ability for such processes to act
as catalysts of crises needs to be better understood. In the end, what characterizes our
contemporary civilizational crisis is a far more radical incompatibility between a liberal
international order premised on human-centric agency versus an increasingly complex material ecology that renders human agency increasingly superfluous.

In this essay, I wish to examine the question of how to understand the conditions of possibility for global systemic crises essentially beyond anthropocentric terms. While the focus on crisis conditions in international theory largely revolve on human or state agents, the ‘subjective considerations’ involved in determining such moments of crisis, I believe that we need to start theorizing systemic crisis as processes of change occurring within assemblages of non-human and human actants. These non-human actants can have significant vitalist material effects that place such assemblages in crisis (Bennett, 2010). In this way, I propose to address the question of systemic crisis in ‘neo-materialist’ terms that does not privilege particular forms of human agency or intentionality over other processes. I begin this essay with a discussion of, what I call, three vignettes that illustrate how post-human/neo-materialist agents or actants may constitute the impulse for systemic crises in, respectively, ecological/political, financial, and economic settings. Following this I show how rationalist and social constructivist approaches remain unable to theorize how such materialist assemblages may become the catalysts that result in a crisis in the very order itself. Lastly, I schematically propose how a neo-materialist ontology, one that displaces the centrality of human agency, may allow us to understand the very inchoate conditions for crisis formation and generation.

ON CRISIS: THREE NEO-MATERIALIST VIGNETTES

The etymology of the word crisis going back to Greek word *Krisis* or *krinein*, means a moment of ‘judgment’, ‘decision’, a forced ‘choice’ at a crucial moment when the political order was placed in question. Yet it also possessed a medical definition: to understand the
etiology, progress and course of a disease in a human body (Koselleck, 2006, p. 360). The applicability of this medical definition of crisis to the body politic is predicated on a whole host of agents/actants that act to create a moment of acute transformation. We can observe this more clearly in the case of Thucydides’ *The History of the Peloponnesian War* which was influenced by this medico-historiographical notion of crisis. The plague in Chapter VII acts insofar as it provokes a significant ethical decline over the course of Athenian history during the war. ‘The effects of the plague,’ Mary Francis Williams writes, ‘comprise a complete inversion of those virtues which Pericles had praised and illustrate how the might of the Athenians and the sophistication of its society were capable of being completely overturned within a very brief space of time through the introduction of an uncalculated variable’ (Williams, 1998, pp. 128-129). The crisis of the Athenian polity occurs as an effect of this ‘uncalculated variable’ and how it disrupts its socio-economic fabric in very significant ways. Looking at the emergent crisis between the plague and Athens is necessarily distinct from a systems approach to crisis genesis. The latter approach emphasizes certain internal contradictions that result in a general destabilization. However, as Jürgen Habermas originally noted, an emphasis on internal structural incompatibilities presupposes a notion of bounded social systems which becomes increasingly difficult to analytically achieve (Habermas, 1984, p. 3).

Systemic crisis may occur beyond the intentions or intersubjective relations between individuals or states within the international system; systemic crises may also occur beyond internal contradictions, an analysis of which presupposes bounded humanly constructed socio-economic systems. Thus, for example, a limitation in Marxist theories of crisis is precisely the assumption that the crisis conditions are largely derived from system immanent features such that the ‘system allows fewer possibilities for problem solving than are
necessary to the continued existence of the system’ (Habermas, 1984, p. 2). The three examples that I discuss below illuminate the limitations of systemic theories of crises in taking account of such ‘uncalculated variables’ that can destabilize systems. What distinguishes the examples below is not only an emphasis on the effectivity of non-human agency or actants, but that this effectivity occurs at various temporalities: for ecology, centuries; for finance, micro-seconds; for economic processes, years or decades. In other words, we need to be able to think about crisis-formation with different forms of agency, a multiplicity of temporalities and a much more open conception of what we understand as social space than is commonly assumed.

My first example concerns ecological crisis. There is a growing sense among climate scientists that planetary climactic transformations are becoming irreversible and may lead to environmental, population and/or resource shifts. Such shifts substantially call into question the longevity of our contemporary liberal order, and even that of the state system (Christoff and Eckersly, 2005, pp. 5-6). Susan Solomon, Gian-Kaspar Plattner et al., for example, show that ‘anthropogenic carbon dioxide already in the atmosphere today are expected to be largely irreversible’ (2009). Over timeframes of centuries, if not sooner, this sets in motion a series of ecological changes, rising sea-levels, temperature differences, loss of ice-sheets in the northern and southern poles, mass extinction, disruption of the food supply, etc. that are increasingly beyond the capacity human action to address. This naturally poses substantial political, economic and social questions concerning the longevity of our current political-economic order based on continuous economic growth models. To be sure, this is not just a recent concern; in the 1970s Habermas recognized that ‘exponential growth of population and production…must someday run up against the limits of the biological capacity of the environment” (Habermas, 1984, p. 42). Likewise, Robert Heilbroner in his Inquiry into the
Human Prospect also identified the limitations of capitalist expansionism in the early 1970s (1991). However, for Heibroner the consequence of ecological collapse is the possibility of increasing authoritarianism: ‘only an authoritarian, or possibly only a revolutionary, regime will be capable of mounting the immense task of social organization needed to escape catastrophe’ (1991, p. 24). This authoritarianism, William Ophuls and A. Stephan Boyan Jr. have argued, will necessarily be at the global level in order to restrain the various nation-states that are incessantly competing for resources (1992, p. 278; Kuchls, 1996, p. 99). IR theorists have also argued that ecological crises might reconfigure the contours of the international system in substantial ways (See, for example, Lafferière and Stoett, 1999; Lipietz, 1997; Barry and Eckeresly, 2005; Park, Conca and Finger, 2008; Imber and Vogler, 1996).

Where climactic patterns are having significant effects on global politics is how drought is coming to play an increasing role in precipitating crises. Such ecological changes can act as trigger mechanisms for conflict, as in Darfur, or in precipitating internal population displacements, more recently, Syria. In a recent article in the magazine Science, Solomon Hsiang, Marshall Burke and Edward Miguel examine the causal evidence between temperature changes and human conflict (2013). What they argue is that ‘large deviations from normal precipitation and mild temperatures systematically increase the risk of many types of conflict, often substantially, and that this relationship appears to hold over a variety of temporal and spatial scales’ (Hsiang, Burke and Miguel, 2013, p. 1; see also, Hsiang and Burke, 2012). More recently, the Syrian civil war is perhaps an evident example of this relationship between climate change and violence. In his essay entitled “Water, Drought, Climate Change, and Conflict in Syria” Peter Gleick shows how between 2006 and 2011 unprecedented drought lead to substantial population flows from rural environments to
urban centers (2013; see also de Châtel, 2014). On top of profound governmental mismanagement of the water supply, this environmental process exacerbated latent class and social tensions within Syria until 2011. To be sure, the argument here is not that drought caused the Syrian civil war; rather, the drought should be thought of as one of many variables to act as a catalysts for political crises to emerge (Dalby, 2002). Nonetheless, while many have continued to draw attention to the ramifications of environmental changes for disrupting international political order, there is increasing evidence that the collective action problem posed by climate change cannot be addressed by our current international order and the limitations and that our theoretical knowledge is ‘caught in a series of disciplinary and institutional limitations that fail to grapple with either the scale of the problem or its historical trajectory’ (Dalby, 2002, p. 80). As Gills argues, what fundamental ecological changes highlight is more precisely a civilizational crisis, which ‘exposes the failure of the existing paradigm and political structure to adapt, even as threats to human survival continue to mount’ (Gills, 2010, p. 180).

The consequence of climactic change on international politics is not just a contemporary or future concern. Historians have been debating the environmental conditions that gave rise to past systemic crises. Eric Hobsbawn originally referred to the 17th century as a ‘General Crisis’ that mainly reflected significant economic shifts within Europe (1954). Although, historians of the 17th century have shown how the upheavals occurring throughout that century were, at once, multi-causal, reflecting significant political and social changes that resulted in incessant warfare and rebellion, many are turning to global factors such as climactic changes that were global in scope (Parker and Smith, 1997). What accounts for the global nature of this ‘General Crisis’, the historian Geoffrey Parker argues, are dramatic changes in global weather patterns resulting in longer and harsher
winters that disrupted agricultural supplies (2013). Parker’s work demonstrates the important linkage between changes in historical climatic patterns and global patterns of violence and social dislocation which has yet to be fully explored in international relations (Hornborg, McNeill and Martinez-Alier, 2007; see also Zhang et al., p. 19217). Emphasizing historical and contemporary climatic effects does not diminish the importance of human agency; rather, it is to acknowledge that climactic patterns in conjunction with human actions constitute a vast assemblage that can create the conditions of possibility for systemic crises. Paul Edwards notes, understanding this assemblage necessarily requires the ‘knowledge infrastructure’ that ‘comprise robust networks of people, artifacts, and institutions that generate, share, and maintain specific knowledge about the human and natural world’ (2010, p. 17).

My second illustrative example of how non-human actants comes to act as catalysts of crisis come from finance. Recent years have seen the rise of high-frequency and automated trading on major financial markets. That is, computerized trading has largely taken over from human decision-making from order execution to proprietary trading because humans have become much too slow in processing information. Tom Lin calls this transformation in finance a transition from human-centric decision-making to ‘cyborg finance’ (2013). ‘A key feature of cy-fi,’ Lin continues, ‘is the use of incredibly powerful and fast computers to analyze and execute trading opportunities based on complex mathematical models. Many have referred to computer-programmed trading collectively as “black box trading”. Today, almost every major financial institution and hedge fund employs blackbox trading in one form or another’ (2013, p. 689). In contrast to the above ecological example which operates on time-horizons of hundreds of years, high-frequency computer trading reflects what Nick Srnicek and Alex Williams term a ‘dromological acceleration’ in which ‘at
the extremes some firms refuse any human intervention in their automated processes’ (2013, pp. 2, 4). Time scales for order execution by computer algorithms have been reduced to microseconds and an ever-increasing arms race to increase software and hardware speeds is currently in place. The necessity of such speeds reflecting high-frequency strategies link to arbitrage: programs attempt to determine price disparities between different but comparable financial instruments in order to book risk-free profits. Some strategies involve a form of front-running (i.e. of sniffing out large customer orders being executed on various exchanges and attempting to purchase the stock microseconds beforehand) which has recently gained notoriety (Lewis, 2014). An entire infrastructure is being built to continuously shave off microseconds for order executions that place structural advantages for firms located within certain geographical locations.

However, as noted, these material transformations increasingly move capital allocation decisions beyond the capacity of human cognition. At one level, there is necessarily the risk that human software development results in catastrophic failure. One example is the failure of Knight Capital, ‘which lost $440 million in 45 ghastly minutes on the morning of 1 August 2012. An old, long-unused trading program mistakenly left on one of its servers suddenly sprang to life, while the piece of program that kept track of the execution of its orders no longer worked’ (MacKensie, 2014). Beyond the capacity for human error, such algorithmic trading ‘produce[s] emergent phenomenon such as flash crashes and ultrafast black swans’ (Srnicek & Williams, 2013, p. 9). For example, on May 6, 2010 the DJI fell 9% in the space of minutes and yet recovered just as quickly when computer algorithms essentially withdrew from the market. What such a flash crisis signifies is a moment in time when ‘price discovery’ mechanisms essentially break down. But while such breakdowns have evidently occurred in the past, what is new is that the causal
mechanisms that are responsible are increasingly opaque to human consciousness. What then does a post-human-centric theory of finance capital entail for the emergence of systemic financial crises that that pose substantial risks for the global economy (Arнут and Saluzzi, 2012)? What do we mean then by systemic risk in such situations where artificial intelligent algorithms replace human beings in capital allocation decisions?

These questions reveal that cyborg finance currently constitutes what Neil Johnson calls an ‘ultrafast machine ecology’ at timescales of less than one second. Johnson, Zhao, Hunsander et. al. demonstrate that at these miniscule timescales, financial markets behave in ways that traditional theories of finance no longer appear to function. In particular, rather than adding liquidity to the market, high-frequency trading reflects a convergence of strategies ‘hence simultaneously flood the market with the same type of order, thereby generating the frequent extreme price-change events’ (Johnson et. al., 2013, p. 5; see also Sornette and Von der Becke, 2011). This simultaneous convergence of orders creates the conditions for extreme forms of volatility in various financial instruments that can exacerbate systemic risks between financial institutions (Bodek, 2012). In fact, one Federal Reserve working paper specifically details how ‘Systemic risk may be amplified [because of high-frequency trading].

An error at a relatively small algorithmic trading firm may cascade throughout the market, resulting in a sizable impact on the financial markets through direct errors or the reactions of other algorithms to the error.

Clearinghouses and central counterparties (CCPs) may also be affected by erroneous trades, though their degree of exposure to clearing members may be limited depending upon the product category involved and the nature of the events (Senior Supervisors Group, 2015, p. 2).
Given that the global North’s economy is increasingly governed by the financial sector such volatility will increasingly have reverberations across the non-financial economy.

The increasing importance of algorithmic processes and artificial intelligence are not limited to simply increasing the velocities of finance capital; they proliferate in the productive economy as well. Thus my third example concerns what some refer to as the roboticization or expansion of intelligent automation of the means of production. Advances in robotics are making production a much less human-centric occupation (see especially, Brynjolfsson and McAfee, 2014; Cowen, 2014; Carr, 2014; Ford, 2009). Advances in artificial intelligence may signify dramatic shifts in the relationship between gainful employment and economic production and services thereby rendering a large part of the global workforce essentially superfluous to the requirements of capital and its maintenance. John Maynard Keyes recognized the importance of technological innovation in the 1930s when he coined the term ‘technological unemployment’ (1930). While Keynes saw this as ‘a temporary phase of maladjustment’ the rise in intelligent automation potentially signals something novel in that surplus labor is no longer as essential. A 2013 study by Carl Benedikt Frey and Michael A. Osborne entitled ‘The Future of Employment: How Susceptible are Jobs to Computerization’ argues that technological advances results in 47% of employment in the US labor market at risk (p. 37). As the economist Noah Smith recently argued, 

Once human cognition is replaced, what else have we got? For the ultimate extreme example, imagine a robot that costs $5 to manufacture and can do everything you do, only better. You would be as obsolete as a horse.³

For some economists such as Brynjolfsson and McAfee the secular decline in median income is intimately tied to technological disruptions over the past decade (Brynjolfsson and
McAfee, 2014, p. 51). Martin Ford adds that recent technological disruptions may not mainly fall on low-skilled employment, but actually on ‘knowledge workers’. Ford argues that ‘in the future, automation will fall heavily on knowledge workers and in particular on higher paid workers’ (2009, p. 73). Indeed, what is potentially unique with the emergence of artificial intelligence is that gainful employment would no longer assured for even skilled workers based on educational levels. Thus, rather than outsourcing production in search of cheap labor, what if we arrive at a point in the future when *homo economicus* becomes decoupled from global economic welfare?

Some on the other hand, such as Jeremy Rifkin, see this as the emergence a global society dominated by the ‘Internet of Things’ which makes production ultimately a ‘zero marginal cost’ (Rifkin, 2014). This imminent third industrial revolution ushers in capital’s dream of near perfect technical efficiency with the liberation of mankind from the drudgery of labor and its hostage to the whims of the labor market. For Rifkin then,

Consumers are becoming their own producers, eliminating the distinction.
Prosumers will increasingly be able to produce, consume, and share their own goods and services with one another on the Collaborative Commons at diminishing marginal costs approaching zero, bringing to the fore new ways of organizing economic life beyond the traditional capitalist market model.
Secondly, the automation of work is already beginning to free up human labor to migrate to the evolving social economy…A half century from now, our grandchildren are likely to look back at the era of mass employment in the market with the same utter disbelief as we look upon slavery and serfdom in former times’ (Rifkin, 2014, pp. 132-3).
Others, however, are much more sanguine about this transition to an increasingly automated form of economic reproduction. Paul Krugman, for example, notes that this transition could eviscerate any semblance of a ‘middle class’ and the social welfare state as is currently conceived (2013). Whether Rifkin’s vision about the emancipation of humanity is wishful thinking or not it reflects a vision of a world in which a vast portion of humanity essentially becomes increasingly superfluous to its (i.e. its economic) reproduction. In such a condition, what would a post-humanecentric theory of capitalist crisis even mean? And what would this imply more generally for theories of international political economy?

**IR AND THE CONCEPTUALIZATION OF CRISIS**

The previous section was meant to be illustrative of potentially disruptive changes in the global environment, financial and economic system. In international relations theory, however, the conditions for crises to emerge are often reduced to a function of state or individual agency. In *A Study of Crisis*, Michael Brecher and Jonathan Wilkendfeld catalogue and systematize the history of crisis in world politics (2000). However, their analysis of crisis remains largely framed in anthropocentric terms. What they term ‘foreign policy crisis’ is one in which ‘an individual state’ perceives ‘a threat to one or more basic values, along with an awareness of finite time for response to the value threat, and a heightened probability of involvement in military hostilities’ (2000, p. 3, emphasis in the original). However, this does not adequately address what can cause a crises in the deep principles of an order itself. Robert Gilpin’s *War and Change in World Politics* (1981) remains one of the more important works on the subject of systemic crisis and political change. Gilpin understands the constitution of an international system as reflective of how ‘actors enter social relations and create social structures in order to advance particular sets of political, economic, or other types of interests’ (1981, p. 9).
Such interests, Gilpin argues, reflect distributions of power. Yet, as Gilpin asserts, ‘over time…the interests of individual actors and the balance of power among the actors do change as a result of economic, technological, and other developments’ (ibid). What ultimately constitutes the catalysts for economic, technological and other developments is for Gilpin directly reflective of individual or collective actors: ‘As is the case in any social or political system, the process of international political change ultimately reflects the efforts of individuals or groups to transform institutions and systems in order to advance their interests’ (ibid: 10).

Gilpin’s understanding of agency is thus firmly human-centric. This is not surprising given his emphasis on a rational choice ontology in which humans and states continuously conduct a cost/benefit analysis in response to changes in the material disposition of other agents. However, the fact that he adumbrates that material dispositions are influenced by ‘environmental factors’ indicates the potentiality that such material factors could in themselves be understood as actants that have effects upon the international order. In other words, changes in military technological development, communications and transportation and economic organization have profound effects upon how not only actors calculate their respective positions within the international system (ibid, 56). However, this materiality may be the catalyst of systemic crises.

The key conceptual arguments raised by Gilpin, and other political realists on the question of change in IR, were challenged over the course of the 1990s and 2000s with the emergence of social constructivist ontologies and methodologies. More specifically on the question of crisis, Wesley W. Widmaier, Mark Blyth & Leonard Seabrooke, in a forum that appeared in ‘International Studies Quarterly’ in 2007, challenged the rationalist and materialist strand that characterizes Gilpin’s early work on change. For Widmaier et. al. the
The problem with rationalist approaches is that, first, ‘they obscure the influence of intersubjective understandings on agents’ interpretations of material incentives’ (Widmaier et al., p. 748). Moreover, ‘materialist approaches obscure the full scope of agency, limiting it to strategic interaction or adaptation, suggesting that agents rather automatically and unproblematically respond to material shifts in easily predictable ways’ (ibid). Key for their agent-centered constructivist approach is the idea that crises are ‘events which agents intersubjectively interpret as necessitating change’ (ibid; emphasis in the original). Their emphasis then is on how various elite and mass public agents interpret, give meaning to and persuade each other of the necessity of change during periods of war and economic crises. Thus, as they write, ‘war and crises act as effective turning points not because of changes in material structures per se, but because of transformations in the broader intersubjective understandings’ (Widmaier et al., p. 757).

More recently, Andrew Phillips tackles the issue of change in international orders by a realist-constructivist synthesis (2011, pp. 10-11). For Phillips, international orders fall into crisis when their constitutive units begin to call into question the legitimacy of the order. Though violent confrontations increase in intensity and occurrence during periods of systemic crises, Phillips emphasizes that institutional decay ‘manifest themselves in each instance in a growing contrast between the claims legitimising an order and its growing inability to fulfill those claims’ (2011, p. 46). Nonetheless, Phillips account, though seeking a middle ground between the determinism of Gilpin’s hegemonic crisis and the constructivist emphasis on how agents narrate crisis, remains firmly about a type of ‘self-conscious’ agency. While social constructivism in its broad sense focuses on the importance of narrative representations for the determination of crises conditions, the last section of the essay elaborates what might a materialist or neo-materialist perspective on crisis achieve.
AGENTIAL ASSEMBLAGE AND CRISIS THEORY

Limiting the scope of research to intersubjective interpretations and the intentionality of human-centric agents constricts the very complexity of the effects of non-human actants. Rather than speaking of agents *qua* human as the determining unit in IR, an avenue for critical IR theory would be to expand notions of agency as a function of effects. With the examples mentioned above, this may include reconsidering machines such as high-frequency trading computers or systems of automated factories as actor-machines capable in themselves of generating surplus value. Indeed, rethinking the concept of labor-power to include non-human actants that become self-reproducing (i.e. robots making robots, or software creating software) would expand Marxian derived crisis theories determined to highlight the intrinsic contradictions within ‘systemic processes of accumulation’ (Arrighi, 2010, p. 220). Importantly, a focus on the effects of such non-human actants reveals the difficulties of delineating the boundaries of social systems necessary for such an analysis.

One such possibility then is to use the concept of assemblage. The term assemblage (*agencement*), coined by Gilles Deleuze and Felix Guattari, refers to a loosely defined ensemble of forces, flows, entities or elements that generate affective intensities in various bodies: a ‘collective assemblage of enunciation, of acts and statements, of incorporeal transformations of bodies’ (Deleuze & Guattari, 1987, p. 88). John Johnston, for example, describes an assemblage as,

[A] specific functional arrangement of heterogeneous flows and interactions, a concrete set-up of connections between humans and machines that ensures both the coding and decoding of fluxes of matter, energy, and signs (information). Feudalism, psychoanalysis, the war machine, a performance by the composer John Cage – there is
no limit to their variety. Assemblages arise, mutate, and disappear at specific
conjunctions of material and historical forces; hence they are always dated (Johnston,

There are two key aspects to an assemblage that should to be highlighted. First, is the
openness of an assemblage to a variety ‘heterogeneous’ relationships between human and
non-human, between corporeal and incorporeal, elements that in one form or another
constitute reverberating feedbacks and effects across itself. Second, is this very idea that an
assemblage is inherently transitory on the basis of aleatory (or not) conjunctions of such
‘material and historical forces.’ ‘Assemblages are not,’ as Jane Bennett writes, ‘governed by
any central head: no one materiality or type of material has sufficient competence to
determine consistently the trajectory or impact of the group’ (Bennett, 2010, p. 24). Nor is
an assemblage reducible to its constituent elements to determine the locus of agential
capacity: ‘Each member and proto-member of the assemblage has a certain vital force, but
there is also an effectivity proper to the grouping as such: an agency of the assemblage’
(Bennett, 2010, p. 24). Assemblages then are potentially non-linear periodic moments of
crystallization that can become unstable, bifurcate (i.e. prone to crisis) on the basis of a
variety of effects.

The concept of the assemblage then is helpful to understand how concatenations of
human and non-human elements coalesce and are prone to moments of instability or crisis.
An assemblage, for Deleuze and Guattari, reverberates and mutates through processes of
what they call, coding and decoding, territorialization and deterritorialization (1987, p. 56).
Coding enables the ordering of matter while territorialization is the ordering of bodies into
various assemblages. What is perhaps less clear in Deleuze and Guattari, as John Johnston
rightly notes, are the conditions when an assemblage begins to lose its coherence. ‘In short,’ Johnston writes, ‘the moment of crisis and dissolution may well be described…as a bifurcation in which constituent processes become chaotically unstable and vacillate among a set of possible solutions’ (2008, p. 118). This process of deterritorialization and crisis remains vague in Deleuze and Guattari and a turn to recent advances in complexity theory or non-linear dynamical system theory may provide a vocabulary for describing the very processes of dissolution and reconstitution that is currently lacking in IR theory. To be sure, assemblages are complex emergent entities that oftentimes cannot be reduced to their constituent parts.

Jane Bennett, for example, discusses the event of the 2003 northeast blackout as an example of how an assemblage comprised of a spectrum of human and non-human actants becomes destabilized. On August 14, 2003 approximately 55 million lost power across the United States and Canada. The stated cause of the blackout was a software bug located in one utility company’s alarm system. Nonetheless, what Bennett demonstrates is that this failure was in reality a concatenation of effects. The assemblage constituting the electrical power grid is made up of various materials, such as electricity (the flow of electrons), transmission wires, power plants, and human centered corporations, legal frameworks governing market mechanisms for the distribution and transmission of power and practices, etc. The halt in the electrical grid occurred not only because of a software issue that acted as a catalyst but because of a series of cascading events: ‘of voltage collapses, self-protective withdrawals from the grid and human decisions and omissions’ (Bennett, 2010, p. 25). To understand this collapse ‘agential loci’ needs to be understood not just in terms of human or intersubjective intentionality (i.e. as willing subjects making bad decisions) but as a kind of emergent swarm effect. Causality here is also important: moments of destabilization are just
a function of efficient cause, in which one body acts upon another; rather, causality reflect a type of emergent causality, one that ‘places the focus on the process as itself an actant, as itself in possession of degrees of agentic capacity’ (Bennett, 2010, p. 33). What Bennett reveals then is that to understand the processes of this destabilization an expansive notion of agency is required, one that does not necessarily privilege human intentionality.

While questions concerning the longevity of American hegemony and the international liberal order are obviously significant, we need to expand our focus on events and processes that may result in moments of systemic crisis that can radically call into question our contemporary global order. Debates concerning the longevity of this order largely focus on the extent to which other, primarily non-Western powers, are perceived to have a stake in maintaining this order or not. Yet this persistent focus on how human-centered agents (whether individuals or states) blinds us to the surprising novelty of emergent effects of non-human actants. Research trends in critical IR theory should then pose questions concerning the effects of multiple actants and how assemblages of such actants may evolve, change or become catalysts for global systemic crises.

1 Bruno Latour describes an actant as ‘any entity that modifies another entity…’ (2004). Key is the idea of modification which does not imply an idea of intentionality. Thus non-human actants become actors insofar as they modify assemblages of relations thereby giving rise to something novel in the world.

2 For example, Mahmood Mamdani situates the conflict in Darfur in a context of global climate change resulting in the ‘desertification and soil erosion’ (Mamdani, 2010, p. 10).

The issue here, however, isn’t the temporality of the event per se but of the compounded effects of when such an assemblage falls into crisis. That is, the time of a crisis may be momentary (i.e. a flash crash) or centuries in the making (ecological) but the important point is in tracing the changes in assemblages that resulted in such a crisis and the effects thereafter.

References


