## 1NC

### 1NC – Complexity – Long

#### The 1AC’s founded on a Newtonian narrative of IR as a linear system of states maximizing self-interest---that shuts out complexity which guarantees serial policy failure

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**CT = complexity thinking**

International Relations (IR) has struggled to foster different ways of seeing and encountering the world that can help it generate meaningful answers to the pressing questions of our times. The dominant models of IR are implicated in the construction of a world that is unravelling socially, fracturing economically, and deteriorating ecologically. There is an urgent need for a change in perception, outlook, and vision that can help uncover new modes of thinking and doing world affairs that transcend established paradigms and practices. Proponents of Complexity Thinking (CT)1 have responded to this call by drawing attention to the radical relationality of global life, which contests the Eurocentrism and anthropocentrism that informs the IR mainstream. In the process, CT makes available much-needed vocabularies and optics for engaging phenomena, practices, and dynamics that cut across the turbulent pluriverse of global life. The claim is that CT advances a valuable alternative picture (simultaneously in analytical, ontological, and normative terms) of the fundamental characteristics and purposes of world politics. This article draws attention to such alternative by foregrounding the connection between complexity, relationality and the study of IR.

The point of departure for such “complexification” is the recognition that IR is marked by a poignant lack of ontological pluralism. Regardless of their distinct theoretical commitments, IR scholars tend to subscribe to a “Newtonian” vision of the “world out there” as a closed system populated by states whose interactions are motivated by power-maximization in the pursuit of their own self-interest.2 Thus, given the dynamics of linear causality that backstop this metanarrative, what comes to pass in world affairs is positioned as subject to anticipation as a result of reductionist models which postulate that all physical phenomena change in gradual manner and following foreseeable trajectories. This “atomistic ontology” asserts that all social phenomena are quantifiable and predictable.3 The normative fundamentalism of this stance leads IR to adapt a mindset of continuities that makes it difficult to address chance, change, and uncertainty.4 In particular, the framework of instrumental-rational action has become the standard against which alternative claims are judged. Thus, the “international” produced in this manner is an artefact of ontological and historical constructs with significant epistemic and ethical effects.

According to the proponents of CT, the mechanistic (and nearly clockwork) features of this Newtonian imaginary disclose a normalisation of oppression evidenced by the control, domination and exploitation of various others – be they human (indigenous, non-Western, gender, and other vulnerable communities) or non-human (nature, species, and objects). To be sure, some international phenomena – especially, when treated in isolation – may appear orderly at times (that is, predictable, rational, and linear); however, the point of CT is that systemically, global politics as a whole is defined by non-linearity, recursivity, and unpredictability. Thus, by painting itself in the Newtonian corner, the disciplinary mainstream has, on the one hand, evaded the need to recognise that there are dynamics which are not only unknown, but probably cannot ever be meaningfully rendered comprehensible, and, on the other hand, has stifled endeavours that can engage in thoughtful deliberation of the discontinuities, unpredictability, and non-linearity of global life.5

#### This complexity results in self-organization – adaptive and co-evolving systems which are multifaceted and make monocausal analysis impossible

Kavalski 07 [Emilian Kavalski, the Li Dak Sum Chair Professor in China-Eurasia Relations and the Director of the Global Institute for Silk Roads Studies at the University of Nottingham Ningbo, 9-4-2007, "The fifth debate and the emergence of complex international relations theory: notes on the application of complexity theory to the study of international life," Taylor &amp; Francis, https://www.tandfonline.com/doi/abs/10.1080/09557570701574154, accessed 4-9-2021]LHSBC

Complexity theory proffers two dominant types of self-organization: adaptation and co-evolution (Guastello 2002). Adaptation reflects complexity’s ability to learn to adapt to transformations in its internal and external environments (Axelrod 1997, 153). Such adjustment concerns either the system as a whole, or its parts, or both (Cederman 1997, 50), and reflects the ability of complex systems to keep their essential structures within acceptable limits (Rosenau 2003, 214). The notion of co-evolution refers to the capacity of a system to change with the environment. Since the environment is composed of other systems, those other systems also change and impact on each other as a result of this interaction (Walby 2007). It should be emphasized that adaptation and co-evolution are complementary (and often simultaneous) processes of selforganization (Rihani 2002, 236; Rosenau 1990, 174) which indicate the resilience of complex systems—that is, their ability to adjust to change.6 The notion of resilience calls attention to the significance of feedback for the ways complex systems behave (Jervis 1997). Such focus on feedback emphasizes the centrality of complex interactions—that is, the multidirectional feedback dynamics—to the process of self-organization. Most authors distinguish between positive and negative feedback (Jervis 1997, 125–130; Manson 2001, 407). Positive feedback is self-reinforcing—that is, a change in one direction sets in motion pressures that produce further change in the same direction. For instance, trivial events could be magnified, through positive feedback, into major upheavals—as indicated by the ‘Romanian Revolution’ of 1989 that started as an isolated incident involving primarily the Hungarian minority in the town of Timis¸oara (that is, the eviction of the local priest La´szlo To˝ke´s), but which grew into demands for broader political reform and led to the removal and eventual execution of Nicolae and Elena Ceaus¸escu.7 Negative feedback is stabilizing—that is, the change triggers forces that counteract the initial alteration and return the system to something like its original position. Thus, regardless of the upheaval caused by the 1989 student protests on Beijing’s Tiananmen Square and the subsequent crackdown, the Chinese Communist Party has remained (arguably) unperturbed in its control of the country (Rosenau 1990). ∂ These instances draw attention to the issue of causality in complex systems. Owing to the unpredictability of interactions, it is impossible to discern ‘the causal arrows, precisely because in feedback loops causal arrows are directionless or circular’ (Hoffman and Riley 2002, 311). In this respect, complex systems indicate sensitivity to alterations in initial conditions and random events. Thus, actions have indirect and complicated effects and outcomes may not correspond with the intentions of any of the actors. Interactions are more likely than not to call up unintended consequences that can defeat purposive behaviour, because, in a system, the fates of the units and their relations with others are strongly influenced by interactions at other places and at earlier periods of time ... [and] it is hard to treat issues separately: disputes that would be small if they could be isolated are highly consequential because the world is tightly interconnected. (Jervis 1997, 17–24) It is this density of self-organization that makes complex systems—like the pattern of international politics—hard to understand (Snyder and Jervis 1993, 5). The following sections address the frameworks for understanding and explanation implied in the use of CT to the study of international life and the ways in which it constitutes a complex system.

#### “IR expertise” is a reverse qualification.

Menand 5 – Louis Menand has contributed to The New Yorker since 1991 and has been a staff writer since 2001. His book “The Metaphysical Club” was awarded the 2002 Pulitzer Prize for history and the Francis Parkman Prize from the Society of American Historians. He was an associate editor at The New Republic from 1986 to 1987, an editor at The New Yorker from 1992 to 1993, and a contributing editor at The New York Review of Books from 1994 to 2001. He is the Lee Simpkins Family Professor of Arts and Sciences and the Anne T. and Robert M. Bass Professor of English at Harvard University. In 2016, he was awarded the National Humanities Medal by President Obama, November 28th ("Everybody’S an Expert", New Yorker, Available online at https://www.newyorker.com/magazine/2005/12/05/everybodys-an-expert, Accessed 11-10-2020)

It is the somewhat gratifying lesson of Philip Tetlock’s new book, “Expert Political Judgment: How Good Is It? How Can We Know?” (Princeton; $35), that people who make prediction their business—people who appear as experts on television, get quoted in newspaper articles, advise governments and businesses, and participate in punditry roundtables—are no better than the rest of us. When they’re wrong, they’re rarely held accountable, and they rarely admit it, either. They insist that they were just off on timing, or blindsided by an improbable event, or almost right, or wrong for the right reasons. They have the same repertoire of self-justifications that everyone has, and are no more inclined than anyone else to revise their beliefs about the way the world works, or ought to work, just because they made a mistake. No one is paying you for your gratuitous opinions about other people, but the experts are being paid, and Tetlock claims that the better known and more frequently quoted they are, the less reliable their guesses about the future are likely to be. The accuracy of an expert’s predictions actually has an inverse relationship to his or her self-confidence, renown, and, beyond a certain point, depth of knowledge. People who follow current events by reading the papers and newsmagazines regularly can guess what is likely to happen about as accurately as the specialists whom the papers quote. Our system of expertise is completely inside out: it rewards bad judgments over good ones. “Expert Political Judgment” is not a work of media criticism. Tetlock is a psychologist—he teaches at Berkeley—and his conclusions are based on a long-term study that he began twenty years ago. He picked two hundred and eighty-four people who made their living “commenting or offering advice on political and economic trends,” and he started asking them to assess the probability that various things would or would not come to pass, both in the areas of the world in which they specialized and in areas about which they were not expert. Would there be a nonviolent end to apartheid in South Africa? Would Gorbachev be ousted in a coup? Would the United States go to war in the Persian Gulf? Would Canada disintegrate? (Many experts believed that it would, on the ground that Quebec would succeed in seceding.) And so on. By the end of the study, in 2003, the experts had made 82,361 forecasts. Tetlock also asked questions designed to determine how they reached their judgments, how they reacted when their predictions proved to be wrong, how they evaluated new information that did not support their views, and how they assessed the probability that rival theories and predictions were accurate. Tetlock got a statistical handle on his task by putting most of the forecasting questions into a “three possible futures” form. The respondents were asked to rate the probability of three alternative outcomes: the persistence of the status quo, more of something (political freedom, economic growth), or less of something (repression, recession). And he measured his experts on two dimensions: how good they were at guessing probabilities (did all the things they said had an x per cent chance of happening happen x per cent of the time?), and how accurate they were at predicting specific outcomes. The results were unimpressive. On the first scale, the experts performed worse than they would have if they had simply assigned an equal probability to all three outcomes—if they had given each possible future a thirty-three-per-cent chance of occurring. Human beings who spend their lives studying the state of the world, in other words, are poorer forecasters than dart-throwing monkeys, who would have distributed their picks evenly over the three choices. Tetlock also found that specialists are not significantly more reliable than non-specialists in guessing what is going to happen in the region they study. Knowing a little might make someone a more reliable forecaster, but Tetlock found that knowing a lot can actually make a person less reliable. “We reach the point of diminishing marginal predictive returns for knowledge disconcertingly quickly,” he reports. “In this age of academic hyperspecialization, there is no reason for supposing that contributors to top journals—distinguished political scientists, area study specialists, economists, and so on—are any better than journalists or attentive readers of the New York Times in ‘reading’ emerging situations.” And the more famous the forecaster the more overblown the forecasts. “Experts in demand,” Tetlock says, “were more overconfident than their colleagues who eked out existences far from the limelight.” People who are not experts in the psychology of expertise are likely (I predict) to find Tetlock’s results a surprise and a matter for concern. For psychologists, though, nothing could be less surprising. “Expert Political Judgment” is just one of more than a hundred studies that have pitted experts against statistical or actuarial formulas, and in almost all of those studies the people either do no better than the formulas or do worse. In one study, college counsellors were given information about a group of high-school students and asked to predict their freshman grades in college. The counsellors had access to test scores, grades, the results of personality and vocational tests, and personal statements from the students, whom they were also permitted to interview. Predictions that were produced by a formula using just test scores and grades were more accurate. There are also many studies showing that expertise and experience do not make someone a better reader of the evidence. In one, data from a test used to diagnose brain damage were given to a group of clinical psychologists and their secretaries. The psychologists’ diagnoses were no better than the secretaries’. The experts’ trouble in Tetlock’s study is exactly the trouble that all human beings have: we fall in love with our hunches, and we really, really hate to be wrong. Tetlock describes an experiment that he witnessed thirty years ago in a Yale classroom. A rat was put in a T-shaped maze. Food was placed in either the right or the left transept of the T in a random sequence such that, over the long run, the food was on the left sixty per cent of the time and on the right forty per cent. Neither the students nor (needless to say) the rat was told these frequencies. The students were asked to predict on which side of the T the food would appear each time. The rat eventually figured out that the food was on the left side more often than the right, and it therefore nearly always went to the left, scoring roughly sixty per cent—D, but a passing grade. The students looked for patterns of left-right placement, and ended up scoring only fifty-two per cent, an F. The rat, having no reputation to begin with, was not embarrassed about being wrong two out of every five tries. But Yale students, who do have reputations, searched for a hidden order in the sequence. They couldn’t deal with forty-per-cent error, so they ended up with almost fifty-per-cent error. The expert-prediction game is not much different. When television pundits make predictions, the more ingenious their forecasts the greater their cachet. An arresting new prediction means that the expert has discovered a set of interlocking causes that no one else has spotted, and that could lead to an outcome that the conventional wisdom is ignoring. On shows like “The McLaughlin Group,” these experts never lose their reputations, or their jobs, because long shots are their business. More serious commentators differ from the pundits only in the degree of showmanship. These serious experts—the think tankers and area-studies professors—are not entirely out to entertain, but they are a little out to entertain, and both their status as experts and their appeal as performers require them to predict futures that are not obvious to the viewer. The producer of the show does not want you and me to sit there listening to an expert and thinking, I could have said that. The expert also suffers from knowing too much: the more facts an expert has, the more information is available to be enlisted in support of his or her pet theories, and the more chains of causation he or she can find beguiling. This helps explain why specialists fail to outguess non-specialists. The odds tend to be with the obvious. Tetlock’s experts were also no different from the rest of us when it came to learning from their mistakes. Most people tend to dismiss new information that doesn’t fit with what they already believe. Tetlock found that his experts used a double standard: they were much tougher in assessing the validity of information that undercut their theory than they were in crediting information that supported it. The same deficiency leads liberals to read only The Nation and conservatives to read only National Review. We are not natural falsificationists: we would rather find more reasons for believing what we already believe than look for reasons that we might be wrong. In the terms of Karl Popper’s famous example, to verify our intuition that all swans are white we look for lots more white swans, when what we should really be looking for is one black swan. Also, people tend to see the future as indeterminate and the past as inevitable. If you look backward, the dots that lead up to Hitler or the fall of the Soviet Union or the attacks on September 11th all connect. If you look forward, it’s just a random scatter of dots, many potential chains of causation leading to many possible outcomes. We have no idea today how tomorrow’s invasion of a foreign land is going to go; after the invasion, we can actually persuade ourselves that we knew all along. The result seems inevitable, and therefore predictable. Tetlock found that, consistent with this asymmetry, experts routinely misremembered the degree of probability they had assigned to an event after it came to pass. They claimed to have predicted what happened with a higher degree of certainty than, according to the record, they really did. When this was pointed out to them, by Tetlock’s researchers, they sometimes became defensive. And, like most of us, experts violate a fundamental rule of probabilities by tending to find scenarios with more variables more likely. If a prediction needs two independent things to happen in order for it to be true, its probability is the product of the probability of each of the things it depends on. If there is a one-in-three chance of x and a one-in-four chance of y, the probability of both x and y occurring is one in twelve. But we often feel instinctively that if the two events “fit together” in some scenario the chance of both is greater, not less. The classic “Linda problem” is an analogous case. In this experiment, subjects are told, “Linda is thirty-one years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice and also participated in antinuclear demonstrations.” They are then asked to rank the probability of several possible descriptions of Linda today. Two of them are “bank teller” and “bank teller and active in the feminist movement.” People rank the second description higher than the first, even though, logically, its likelihood is smaller, because it requires two things to be true—that Linda is a bank teller and that Linda is an active feminist—rather than one. Plausible detail makes us believers. When subjects were given a choice between an insurance policy that covered hospitalization for any reason and a policy that covered hospitalization for all accidents and diseases, they were willing to pay a higher premium for the second policy, because the added detail gave them a more vivid picture of the circumstances in which it might be needed. In 1982, an experiment was done with professional forecasters and planners. One group was asked to assess the probability of “a complete suspension of diplomatic relations between the U.S. and the Soviet Union, sometime in 1983,” and another group was asked to assess the probability of “a Russian invasion of Poland, and a complete suspension of diplomatic relations between the U.S. and the Soviet Union, sometime in 1983.” The experts judged the second scenario more likely than the first, even though it required two separate events to occur. They were seduced by the detail. It was no news to Tetlock, therefore, that experts got beaten by formulas. But he does believe that he discovered something about why some people make better forecasters than other people. It has to do not with what the experts believe but with the way they think. Tetlock uses Isaiah Berlin’s metaphor from Archilochus, from his essay on Tolstoy, “The Hedgehog and the Fox,” to illustrate the difference. He says: Low scorers look like hedgehogs: thinkers who “know one big thing,” aggressively extend the explanatory reach of that one big thing into new domains, display bristly impatience with those who “do not get it,” and express considerable confidence that they are already pretty proficient forecasters, at least in the long term. High scorers look like foxes: thinkers who know many small things (tricks of their trade), are skeptical of grand schemes, see explanation and prediction not as deductive exercises but rather as exercises in flexible “ad hocery” that require stitching together diverse sources of information, and are rather diffident about their own forecasting prowess. A hedgehog is a person who sees international affairs to be ultimately determined by a single bottom-line force: balance-of-power considerations, or the clash of civilizations, or globalization and the spread of free markets. A hedgehog is the kind of person who holds a great-man theory of history, according to which the Cold War does not end if there is no Ronald Reagan. Or he or she might adhere to the “actor-dispensability thesis,” according to which Soviet Communism was doomed no matter what. Whatever it is, the big idea, and that idea alone, dictates the probable outcome of events. For the hedgehog, therefore, predictions that fail are only “off on timing,” or are “almost right,” derailed by an unforeseeable accident. There are always little swerves in the short run, but the long run irons them out. Foxes, on the other hand, don’t see a single determining explanation in history. They tend, Tetlock says, “to see the world as a shifting mixture of self-fulfilling and self-negating prophecies: self-fulfilling ones in which success breeds success, and failure, failure but only up to a point, and then self-negating prophecies kick in as people recognize that things have gone too far.”

#### Observer effect prevents effective projections.

Obi-Okolie 14 – Obi-Okolie, Favour, Delta State University, Abraka Delta State, Nigeria, 2014 (“Towards A Quantum Mechanical Model of Foreign Policy Analysis”, International Affairs and Global Strategy, Vol.27, ISSN 2224-574X (Paper) ISSN 2224-8951 (Online), Available online at <https://www.iiste.org/Journals/index.php/IAGS/article/view/18219/18594>, Accessed 11-08-2020)

Uncertainty, as noted earlier, is one of the key features of quantum mechanics. It holds that no matter how carefully we observe, even with adequate knowledge of initial conditions, we can never objectively understand a physical reality. Applying the concept to politics, Cioffi-Revilla defines uncertainty as the “lack of sureness or absence of strict determination in political life”44 Rathbun furthers that “information is ambiguous because the world is complex and can only be approximated and partially understood due to cognitive limitations.”45 He therefore sought to explain the element of uncertainty within mainstream IR theories. For realists, it is experienced in fear of each other’s intention, while rationalists try to cope with uncertainty through international institutions charged to monitor and signal benign intent. For constructivists, uncertainty stems from an assumption that states are uncertain about action to take when norms as defined by identity are absent. Then cognitivists argue that uncertainty emanates from the confusion caused by the complexity of international politics as well as mental limitations of statesmen. 46 Assessing uncertainty from the quantum mechanical framework, we begin with Heisenberg who is arguably the first to introduce the principle. From his perspective, we cannot completely describe an object since we cannot simultaneously describe its momentum and position with exactitude. The more accurately we understand position, the less accurately we understand the momentum, vice versa. As such, it becomes impossible to predict the destination of a moving object since we cannot accurately determine its position and momentum at the same time. From quantum mechanical thought, this is may be due to hidden variables and/or non-locality. Non-locality describes the possibility of a quantum state to interact with another quantum state of the same pair, even when separated by large distances without an established means of communication. By position we refer to the location of an object relative to a reference point while momentum is taken to mean the measure of the motion of an object relative to its mass and velocity. Position in theoretical physics is synonymous with the condition of a State prior to an action or event being analysed. By condition we mean the geographic and politico-economic structure of a State. In the same vein, the foreign policy action of a State in a given case, accounts for momentum in physics. Therefore, by directly applying Heisenberg’s argument to foreign policy analysis, it is impossible to completely understand foreign policy behaviour of a State by merely understanding its condition prior to the behaviour being analysed. Also, it is impossible to predict the outcome of a given foreign policy behaviour. This explains why despite efforts to predict the outcome of a given foreign policy behaviour, mainstream approaches to foreign policy analysis have routinely fallen short in this regard. A good example showing the compatibility of Heisenberg’s uncertainty in foreign policy analysis could be found in the recent Arab Spring. An understanding of the socio-political landscape of the Arab world had led scholars of different schools to conclude that democracy was essentially incompatible with the Arab world. However, at the outbreak of the region-wide uprising, scholars began to foretell democratization. Soon, scholars began to make reversals in their predictions, such that it is no longer fashionable to equate the Arab uprising with democratization. What is deducible from this instance is that, in agreement with Heisenberg’s uncertainty, it is impossible to understand the present and predict the future by simply understanding initial conditions. This position is also understood by recalling that whereas the Cold War engaged IR scholars in a war of paradigms, none of the theories and models predicted the end of the conflict.47 Schrodinger’s wave equation furthers our understanding of the compatibility of quantum mechanics with foreign policy analysis. Inferring from his postulation, it is impossible to understand the totality of a State’s foreign policy behaviour. Rather, every State possesses every possible theoretical element that can be attributed to a State’s foreign policy. For instance, before observation is made, every state is weak and strong at the same time; aggressive and accommodating; cooperative and competitive. However, upon observation, the observer interferes with reality such that the condition of the State aligns with the premonition of the observer/analyst. Thus, we are uncertain of a State’s foreign policy behaviour until we decide to observe and/or analyse. Upon analysis, our uncertainty is substituted by the ‘creation’ of reality. It is at this point therefore that the foreign policy analyst relinquishes every claim to objectivity, having created the reality s/he claims to analyse. Relating the foregoing to Bohr’s contribution to Quantum Mechanics, the foreign policy analyst can no longer be regarded as an impartial observer but as an active participant. The instrument with which s/he assesses a phenomenon directly interacts with the physical object being observed to influence the result obtained. Consequently, we could safely assume that if no one was observing, then nothing would be existing. Then, should we now assume that occurrences in international politics are the creation of analysts? To a large extent, the answer weighs to the affirmative and accounts for why certain state and non-state actors, cognizant of this fact, have immensely invested towards gaining the attention of observers/analysts. Terrorist organizations routinely post videos of violence on the internet for analysts to ‘create’ their existence. States regularly release videos and images of military drills and military hardware. The essence is to gain attention of analysts who would therefore ‘create’ the desired reality. Indeed, terrorism is non-existent until it is so designated by analysts. More so, war is simply what analysts and observers make of it. In addition to the foregoing, quantum mechanics gives us insight in understanding causation. This is chiefly in its notion of interconnectedness which carries potentially far-reaching implications for foreign policy analysis. According to Senge, et al, we are now aware that interconnectivity is the organizing principle of the universe.48 The universe is interconnected in a complex web or relationships such that we cannot adequately understand a physical reality without acknowledging its web of relationships. However, this aspect of the universe was ignored by the Newtonian scientists perhaps as a result of the pervasiveness of relationships which can sometimes fade into the background so that “only the apparently separate ‘things’ of the world are noticed.”49 If objects are interconnected within the universe, do we then assume same for humans and States? Of course, yes. This is largely because humans as well as States share the same feature with all other objects: wave-particle duality. As particles they have form, boundaries, and identity while as wave, they possess an unstructured potential which, according to Zohar, spreads out across the boundaries of space, time, choice and identity.50 Therefore, State and non-State actors, as applicable to other objects, are interconnected or better still entangled in a complex manner that makes it particularly tasking if not impossible to accurately assess foreign policy behaviour. From the foregoing, it could be assumed that quantum mechanics emphasizes what we cannot do over what we can do. How does it then help our understanding of foreign policy? The answer is not far-fetched. By identifying what we cannot do, quantum mechanics saves us from raising false alarms and making erroneous claims. It rather makes case for intellectual diligence by encouraging cross-paradigmatic approach to foreign policy analysis. It underscores that no single theory or approach to foreign policy analysis is on its own adequate for foreign policy analysis. Thus, by engaging all possible approaches, the analyst increases the proportion of objectivity in his/her analysis

#### These unnatural impositions on the system result in worse system blowup down the line. Volatility always exists within the world order – it’s just a question of whether we can see it.

Taleb & Blythe 11 – \*Distinguished Professor of Risk Engineering at New York University’s Polytechnic Institute, AND \*\*Professor of International Political Economy at Brown University (Nassim and Mark, May/June 2011, “The Black Swan of Cairo How Suppressing Volatility Makes the World Less Predictable and More Dangerous,”

Why is surprise the permanent condition of the U.S. political and economic elite? In 2007–8, when the global ﬁnancial system imploded, the cry that no one could have seen this coming was heard everywhere, despite the existence of numerous analyses showing that a crisis was unavoidable. It is no surprise that one hears precisely the same response today regarding the current turmoil in the Middle East. The critical issue in both cases is the artiﬁcial suppression of volatility—the ups and downs of life—in the name of stability. It is both mis- guided and dangerous to push unobserved risks further into the statistical tails of the probability distribution of outcomes and allow these high-impact, low-probability “tail risks” to disappear from policymakers’ ﬁelds of observation. What the world is witnessing in Tunisia, Egypt, and Libya is simply what happens when highly constrained systems explode. Complex systems that have artiﬁcially suppressed volatility tend to become extremely fragile, while at the same time exhibiting no visible risks. In fact, they tend to be too calm and exhibit minimal variability as silent risks accumulate beneath the surface. Although the stated intention of political leaders and economic policymakers is to stabilize the system by inhibiting ﬂuctuations, the result tends to be the opposite. These artiﬁcially con- strained systems become prone to “Black Swans”—that is, they become extremely vulnerable to large-scale events that lie far from the statistical norm and were largely unpredictable to a given set of observers. Such environments eventually experi- ence massive blowups, catching everyone off-guard and undoing years of stability or, in some cases, ending up far worse than they were in their initial volatile state. Indeed, the longer it takes for the blowup to occur, the worse the resulting harm in both economic and political systems. Seeking to restrict variability seems to be good policy (who does not prefer stability to chaos?), so it is with very good intentions that policymakers unwittingly increase the risk of major blowups. And it is the same misperception of the properties of natural systems that led to both the economic crisis of 2007–8 and the current turmoil in the Arab world. The policy implications are identical: to make systems robust, all risks must be visible and out in the open— ﬂuctuat nec mergitur(it ﬂuctuates but does not sink) goes the Latin saying. Just as a robust economic system is one that encourages early failures (the concepts of “fail small” and “fail fast”), the U.S. gov- ernment should stop supporting dictato- rial regimes for the sake of pseudostability and instead allow political noise to rise to the surface. Making an economy robust in the face of business swings requires allowing risk to be visible; the same is true in politics. SEDUCED BY STABILITY Both the recent ﬁnancial crisis and the current political crisis in the Middle East are grounded in the rise of complexity, interdependence, and unpredictability. Policymakers in the United Kingdom and the United States have long promoted policies aimed at eliminating ﬂuctuation— no more booms and busts in the economy, no more “Iranian surprises” in foreign policy. These policies have almost always produced undesirable outcomes. For example, the U.S. banking system became very fragile following a succession of pro- gressively larger bailouts and government interventions, particularly after the 1983 rescue of major banks (ironically, by the same Reagan administration that trum- peted free markets). In the United States, promoting these bad policies has been a bipartisan effort throughout. Republicans have been good at fragilizing large corpora- tions through bailouts, and Democrats have been good at fragilizing the government. At the same time, the ﬁnancial system as a whole exhibited little volatility; it kept get- ting weaker while providing policymakers with the illusion of stability, illustrated most notably when Ben Bernanke, who was then a member of the Board of Gover- nors of the U.S. Federal Reserve, declared the era of “the great moderation” in 2004. Putatively independent central bankers fell into the same trap. During the 1990s, U.S. Federal Reserve Chair Alan Greenspan wanted to iron out the economic cycle’s booms and busts, and he sought to control economic swings with interest-rate reductions at the slightest sign of a downward tick in the economic data. Furthermore, he adapted his eco- nomic policy to guarantee bank rescues, with implicit promises of a backstop—the now infamous “Greenspan put.” These policies proved to have grave delayed side effects. Washington stabilized the market with bailouts and by allowing certain com- panies to grow “too big to fail.” Because policymakers believed it was better to do something than to do nothing, they felt obligated to heal the economy rather than wait and see if it healed on its own. The foreign policy equivalent is to support the incumbent no matter what. And just as banks took wild risks thanks to Greenspan’s implicit insurance policy, client governments such as Hosni Mubarak’s in Egypt for years engaged in overt plunder thanks to similarly reliable U.S. support. Those who seek to prevent volatility on the grounds that any and all bumps in the road must be avoided paradoxically increase the probability that a tail risk will cause a major explosion. Consider as a thought experiment a man placed in an artiﬁcially sterilized environment for a decade and then invited to take a ride on a crowded subway; he would be expected to die quickly. Likewise, preventing small forest ﬁres can cause larger forest ﬁres to become devastating. This property is shared by all complex systems. In the realm of economics, price con- trols are designed to constrain volatility on the grounds that stable prices are a good thing. But although these controls might work in some rare situations, the long-term effect of any such system is an eventual and extremely costly blowup whose cleanup costs can far exceed the beneﬁts accrued. The risks of a dictatorship, no matter how seemingly stable, are no different, in the long run, from those of an artiﬁcially controlled price. Such attempts to institutionally engineer the world come in two types: those that conform to the world as it is and those that attempt to reform the world. The nature of humans, quite reasonably, is to in- tervene in an effort to alter their world and the outcomes it produces. But government interventions are laden with unintended— and unforeseen—consequences, particularly in complex systems, so humans must work with nature by tolerating systems that absorb human imperfections rather than seek to change them. Take, for example, the recent celebrated documentary on the ﬁnancial crisis, Inside Job, which blames the crisis on the malfea- sance and dishonesty of bankers and the incompetence of regulators. Although it is morally satisfying, the ﬁlm naively over- looks the fact that humans have always been dishonest and regulators have always been behind the curve. The only diªerence this time around was the unprecedented magnitude of the hidden risks and a mis- understanding of the statistical properties of the system. What is needed is a system that can prevent the harm done to citizens by the dishonesty of business elites; the limited competence of forecasters, economists, and statisticians; and the imperfections of regulation, not one that aims to eliminate these ﬂaws. Humans must try to resist the illusion of control: just as foreign policy should be intelligence-proof (it should minimize its reliance on the competence of information-gathering organizations and the predictions of “experts” in what are inherently unpredictable domains), the economy should be regulator-proof, given that some regulations simply make the system itself more fragile. Due to the complexity of markets, intricate regulations simply serve to generate fees for lawyers and proﬁts for sophisticated derivatives traders who can build complicated ﬁnancial products that skirt those regulations. DON’T BE A TURKEY The life of a turkey before Thanksgiving is illustrative: the turkey is fed for 1,000 days and every day seems to conﬁrm that the farmer cares for it—until the last day, when conﬁdence is maximal. The “turkey problem” occurs when a naive analysis of stability is derived from the absence of past variations. Likewise, conﬁdence in stability was maximal at the onset of the ﬁnancial crisis in 2007. The turkey problem for humans is the result of mistaking one environment for another. Humans simultaneously inhabit two systems: the linear and the complex. The linear domain is characterized by its predictability and the low degree of interaction among its components, which allows the use of mathematical methods that make forecasts reliable. In complex systems, there is an absence of visible causal links between the elements, masking a high degree of interdependence and extremely low predictability. Nonlinear elements are also present, such as those commonly known, and generally misun- derstood, as “tipping points.” Imagine someone who keeps adding sand to a sand pile without any visible consequence, until suddenly the entire pile crumbles. It would be foolish to blame the collapse on the last grain of sand rather than the structure of the pile, but that is what people do consistently, and that is the policy error. U.S. President Barack Obama may blame an intelligence failure for the gov- ernment’s not foreseeing the revolution in Egypt (just as former U.S. President Jimmy Carter blamed an intelligence failure for his administration’s not fore- seeing the 1979 Islamic Revolution in Iran), but it is the suppressed risk in the statis- tical tails that matters—not the failure to see the last grain of sand. As a result of complicated interdependence and conta- gion eªects, in all man-made complex systems, a small number of possible events dominate, namely, Black Swans. Engineering, architecture, astronomy, most of physics, and much of common science are linear domains. The complex domain is the realm of the social world, epidemics, and economics. Crucially, the linear domain delivers mild variations without large shocks, whereas the complex domain delivers massive jumps and gaps. Complex systems are misunderstood, mostly because humans’ sophistication, obtained over the history of human knowl- edge in the linear domain, does not transfer properly to the complex domain. Humans can predict a solar eclipse and the trajectory of a space vessel, but not the stock market or Egyptian political events. All man-made complex systems have commonalities and even universalities. Sadly, deceptive calm (followed by Black Swan surprises) seems to be one of those properties. THE ERROR OF PREDICTION As with a crumbling sand pile, it would be foolish to attribute the collapse of a fragile bridge to the last truck that crossed it, and even more foolish to try to predict in advance which truck might bring it down. The system is responsible, not the compo- nents. But after the ﬁnancial crisis of 2007–8, many people thought that predict- ing the subprime meltdown would have helped. It would not have, since it was a symptom of the crisis, not its underlying cause. Likewise, Obama’s blaming “bad in- telligence” for his administration’s failure to predict the crisis in Egypt is symptomatic of both the misunderstanding of complex systems and the bad policies involved. Obama’s mistake illustrates the illusion of local causal chains—that is, confusing catalysts for causes and assuming that one can know which catalyst will produce which effect. The ﬁnal episode of the upheaval in Egypt was unpredictable for all observers, especially those involved. As such, blam- ing the ciais as foolish as funding it to forecast such events. Governments are wasting billions of dollars on attempting to predict events that are produced by interdependent systems and are therefore not statistically understandable at the individual level. As Mark Abdollahian of Sentia Group, one of the contractors who sell predictive analytics to the U.S. government, noted regarding Egypt, policymakers should “think of this like Las Vegas. In blackjack, if you can do four percent better than the average, you’re making real money.” But the analogy is spurious. There is no “four percent better” on Egypt. This is not just money wasted but the construction of a false conﬁdence based on an erroneous focus. It is telling that the intelligence analysts made the same mistake as the risk-management systems that failed to predict the economic crisis—and oªered the exact same excuses when they failed. Political and economic “tail events” are unpredictable, and their probabilities are not scientiﬁcally measurable. No matter how many dollars are spent on research, predicting revolutions is not the same as counting cards; humans will never be able to turn politics into the tractable random- ness of blackjack. Most explanations being oªered for the current turmoil in the Middle East follow the “catalysts as causes” confusion. The riots in Tunisia and Egypt were initially attributed to rising commodity prices, not to stiﬂing and unpopular dictatorships. But Bahrain and Libya are countries with high gdps that can aªord to import grain and other commodities. Again, the focus is wrong even if the logic is comforting. It is the system and its fragility, not events, that must be studied—what physicists call “percolation theory,” in which the proper- ties of the terrain are studied rather than those of a single element of the terrain. When dealing with a system that is inherently unpredictable, what should be done? Diªerentiating between two types of countries is useful. In the ﬁrst, changes in government do not lead to meaningful diªerences in political outcomes (since political tensions are out in the open). In the second type, changes in govern- ment lead to both drastic and deeply unpredictable changes. Consider that Italy, with its much- maligned “cabinet instability,” is economi- cally and politically stable despite having had more than 60 governments since World War II (indeed, one may say Italy’s stability is because of these switches of government). Similarly, in spite of consis- tently bad press, Lebanon is a relatively safe bet in terms of how far governments can jump from equilibrium; in spite of all the noise, shifting alliances, and street protests, changes in government there tend to be comparatively mild. For exam- ple, a shift in the ruling coalition from Christian parties to Hezbollah is not such a consequential jump in terms of the country’s economic and political stability. Switching equilibrium, with control of the government changing from one party to another, in such systems acts as a shock absorber. Since a single party cannot have total and more than temporary control, the possibility of a large jump in the regime type is constrained. In contrast, consider Iran and Iraq. Mohammad Reza Shah Pahlavi and Sad- dam Hussein both constrained volatility by any means necessary. In Iran, when the shah was toppled, the shift of power to Ayatollah Ruhollah Khomeini was a huge, unforeseeable jump. After the fact, analysts could construct convincing accounts about how killing Iranian Communists, driving the left into exile, demobilizing the demo- cratic opposition, and driving all dissent into the mosque had made Khomeini’s rise inevitable. In Iraq, the United States removed the lid and was actually surprised to ﬁnd that the regime did not jump from hyperconstraint to something like France. But this was impossible to predict ahead of time due to the nature of the system itself. What can be said, however, is that the more constrained the volatility, the bigger the regime jump is likely to be. From the French Revolution to the triumph of the Bolsheviks, history is replete with such examples, and yet somehow humans remain unable to process what they mean. THE FEAR OF RANDOMNESS Humans fear randomness—a healthy ancestral trait inherited from a different environment. Whereas in the past, which was a more linear world, this trait enhanced ﬁtness and increased chances of survival, it can have the reverse effect in today’s complex world, making volatility take the shape of nasty Black Swans hiding behind deceptive periods of “great moderation.” This is not to say that any and all volatility should be embraced. Insurance should not be banned, for example. But alongside the “catalysts as causes” confusion sit two mental biases: the illusion of control and the action bias (the illusion that doing something is always better than doing nothing). This leads to the desire to impose man-made solutions. Greenspan’s actions were harmful, but it would have been hard to justify inaction in a democracy where the incentive is to always promise a better outcome than the other guy, regard- less of the actual, delayed cost. Variation is information. When there is no variation, there is no information. This explains the cia’s failure to predict the Egyptian revolution and, a generation before, the Iranian Revolution—in both cases, the revolutionaries themselves did not have a clear idea of their relative strength with respect to the regime they were hoping to topple. So rather than sub- sidize and praise as a “force for stability” every tin-pot potentate on the planet, the U.S. government should encourage countries to let information ﬂow upward through the transparency that comes with political agitation. It should not fear ﬂuc- tuations per se, since allowing them to be in the open, as Italy and Lebanon both show in diªerent ways, creates the stability of small jumps. As Seneca wrote in De clementia, “Repeated punishment, while it crushes the hatred of a few, stirs the hatred of all . . . just as trees that have been trimmed throw out again countless branches.” The imposition of peace through repeated punishment lies at the heart of many seemingly intractable conﬂicts, including the Israeli-Palestinian stalemate. Further- more, dealing with seemingly reliable high-level officials rather than the people themselves prevents any peace treaty signed from being robust. The Romans were wise enough to know that only a free man under Roman law could be trusted to engage in a contract; by extension, only a free people can be trusted to abide by a treaty. Treaties that are negotiated with the consent of a broad swath of the populations on both sides of a conﬂict tend to survive. Just as no central bank is powerful enough to dictate stability, no superpower can be powerful enough to guarantee solid peace alone. U.S. policy toward the Middle East has historically, and especially since 9/11, been unduly focused on the repression of any and all political ﬂuctuations in the name of preventing “Islamic fundamentalism”— a trope that Mubarak repeated until his last moments in power and that Libyan leader Muammar al-Qaddaﬁ continues to emphasize today, blaming Osama bin Laden for what has befallen him. This is wrong. The West and its autocratic Arab allies have strengthened Islamic funda- mentalists by forcing them underground, and even more so by killing them. As Jean-Jacques Rousseau put it, “A little bit of agitation gives motivation to the soul, and what really makes the species prosper is not peace so much as freedom.” With freedom comes some unpredictable ﬂuctuation. This is one of life’s packages: there is no freedom without noise—and no stability without volatility.∂

#### The Newtonian paradigm risks extinction.

Pan 20 – Chengxin Pan, Faculty of Arts and Education, Deakin University, Australia, 2020 (“Enfolding wholes in parts: quantum holography and International Relations”, European Journal of International Relations 2020, Vol. 26(S1) 14–38 © The Author(s) 2020 Article reuse guidelines: sagepub.com/journals-permissions DOI: 10.1177/1354066120938844 journals.sagepub.com/home/ejt, Available online at <https://journals.sagepub.com/doi/pdf/10.1177/1354066120938844>, Accessed 11-08-2020)

In the IR context, the whole goes well beyond states and the totality of their interactions. It embodies the whole social and ecological systems as well as their explicate and implicate relations both between and embedded within their constituent “parts.” Such “parts” may include regions, states, societies, cultures, religions, peoples, economies, markets, goods, histories, ideas, emotions, materials, creatures, and natural phenomena. Of course, what exactly makes up the whole for IR cannot be exhaustively tallied a priori, because by definition such a task is impossible in any given space-time. But the point is that wholeness should be given a higher ontological priority in IR. Just as trees do not grow as assemblages of previously separate branches, leaves, and roots, the world does not start off with merely fragmented parts and preexisting sovereign states which then come together to form a global system; it is the other way round: the whole permeates through the parts and forms the essential relational conditions under which parts emerge and exist. This approach makes it imperative for IR to look for relations in much broader contexts which otherwise have been invisible, understudied, or artificially carved up by mainstream IR. To advocate for wholeness does not mean always privileging “macro-level” issues at the global level. In any case, whole-part or macro-micro issues are always already entangled and co-emergent (Wendt, 2015: 257). Micro parts and issues, precisely because they are microscopic, may be particularly prone to be diffusely spread and enfolded into various parts of the whole. As a result, micro parts simultaneously develop an emergent, holographic property of the whole. The fact that the tiny coronavirus can be quickly enfolded into almost every corner of the whole world and turn global life upside down illustrates the part-whole entanglement, and we dismiss its holographically holistic nature and impact at our own peril. To further illustrate, often traditionally considered outside the purview of IR, micro issues or events such as music (Gienow-Hecht, 2015), sports (e.g. ping-pong diplomacy), the Chernobyl disaster (e.g. the collapse of the Soviet Union, van der Veen, 2013), a flight school in Florida (e.g. 9/11), US subprime mortgage crisis, Fukushima, Wikileaks, melting polar ice caps, a Tunisian street vendor (e.g. the Arab Spring and the Syria conflict) and now even COVID-19 may be all in various ways “localized” holographic instantiations of the wholes. As such, they can and do play an important part in both reflecting and shaping the whole, especially in the form of some unexpected events and surprising turns, such as the end of the Cold War, 9/11, the global financial crisis, the rise of Donald Trump, and the current global pandemic. True, some of those “micropolitical” issues have begun to attract IR’s attention (Kertzer, 2017; Solomon and Steele, 2017), but overall the discipline lacks an explicit and holographic ontological and conceptual foundation for a more systematic engagement with the duality of whole-part. Of course, we cannot deal with “the whole of reality all at once” (Bohm, 1980: 2; see also Wendt, 1999: 14). Often it is necessary to take things “apart” and analyze them as if they were separable units. But it is important to always remember the “as if” caveat, lest we reify them as something objectively autonomous. It is also worth remembering that ontologically international relations are always a holographic part of bigger wholes, not closed or autonomous systems or units in and of themselves. In this context, a quantum holographic perspective becomes imperative especially in the face, for example, of the increasingly apparent human-nature holographic entanglement as evidenced by mounting “glocal” environmental crises and their implications for economic development, international conflict, and planetary survival. Contrary to the prevailing IR approaches that continue to subordinate environmental issues to a state-centric framework and a “national economic” imperative (Saurin, 1996), a quantum holographic approach has the potential to bridge the ontological and conceptual division between the parts and the wholes.

#### Complexity theory can inform positive policy-making but it requires fully embracing the idea that system level outcomes are deeply unpredictable and thus deliberate manipulation of policy inputs is counterproductive. The alternative embraces uncertainty and maximizes flexibility to respond to unforeseen events

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One answer to the policy-maker’s paradox might be that by sharpening their awareness of nonlinear unpredictability, complexity-infused thinking can encourage leaders to take approaches to policy making that anticipate the possibility of unforeseen outcomes. Complexity, that is, can teach decision makers to make postures, policies, and organizational forms as flexible and resilient as possible in order to maximize their ability to survive unexpected perturbations. This is only a partial answer to the paradox of course, for it addresses only the problem of unanticipated bumps along the road, rather than whether one can coherently plan one’s journey at all. Nevertheless, the art of “perturbation management” provides at least some riposte to the challenges of unknowability.

In some sense, perturbation management long predates complexity theory, inasmuch as the famous Prussian military theorist Carl von Clausewitz, for instance, placed great emphasis upon the unpredictable impact of “friction” and the notorious “fog of war.”

The purpose of any theory of war for Clausewitz is to explore the entire range of possibilities, including counterfactuals in the sense that physicists understand them. It is not to generate a preconceived set of stable relationships, a checklist of laws valid upon any occasion, “since no prescriptive formulation universal enough to deserve the name of a law can be applied to the constant change and diversity of the phenomena of war.” (Beyerchen 1997, 160)

On the basis of just such an understanding of the impact of friction—as suggested by Helmuth von Moltke of the Prussian general staff, perhaps best remembered today for his pithy but telling observation that no plan survives first contact with the enemy—much of modern Western military science has come to emphasize small unit autonomy and operational flexibility within broad guidance set by a higher-level commander’s intentions (Schmitt 1997, 239–41). (Some modern writers, explicitly invoking CT, have advocated similar approaches for managing high-tech commercial enterprises [Maxfield 1997, 188].)

In the mid- and late twentieth century, the field of systems analysis also came to emphasize the kind of operational flexibility that would enable systems to survive and function in the face of unwelcome perturbations. The founder of the Washington, D.C., think tank Hudson Institute, for instance—the seminal nuclear strategist and futurologist Herman Kahn— preached the virtues for public policy making of what he called “a kind of planned muddling through.” In this vision, it was the aim of policy research to “prevent[] the foreclosure of options that would make muddling through impossible, and enhance[] the consensus on basic directions and destinations that makes muddling through successful” (Kahn 2009, 164). As a result, he felt, “[s]ystems, programs[,] and policies should . . . be made as flexible as possible, and be designed to enable future decision-makers to ‘muddle through’” (Kahn 2009, 182–83).

One way to do this, Kahn suggested, was to modify systems in order to “enable [them] to cope with ‘off-design’ situations,” in the sense not only of “acquiring emergency capabilities for dealing with relatively less favorable— including improbable—contingencies than those expected” but also of being “able to take advantage of unexpected but more favorable situations if they arise” (Kahn 2009, 165). He also exhorted policy makers to approach their work with intellectual humility, alive to the inescapable possibility that their theories might be wrong. Advocating the “agnostic use of information and concepts,” Kahn urged us to be

genuinely agnostic about many of the themes we use; we simply do not know whether they are correct or not, or if they are, we are not sure of the extent of their validity. It is therefore important to hedge against these theories being right without relying on their being right. (Kahn 2009, 169)

We should, in other words, prepare not only our organizational forms and policy toolkits for “‘off-design’ situations,” but indeed prepare our minds as well. In this light, an important criterion for evaluating policy alternatives is how any particular course of action would likely fare in the event that its animating assumptions turn out to be wrong.

Kahn’s analysis was not explicitly built upon CT, but it is obviously quite alive to the challenges of nonlinear unpredictability and outcome unknowability, and thus provides one type of answer to the policy-maker’s paradox. This is an answer that concedes that we cannot really predict or control the future, but which nonetheless aspires to limit the damage that might be caused by potentially destructive perturbations, and to make leaders as prepared as they can be to take advantage of unforseen opportunities.

And indeed, in recent decades there has been significant growth in organizational and management thinking designed to achieve these ends. Beginning with the work of Pierre Wack for Royal Dutch Shell in the 1970s, for example, businesses have been learning a great deal about the importance of scenario-based planning—a method of trying to cope with the unpredictable nonlinearity of one’s operating environment that does not tie an organization’s fate quite so dangerously to the linear assumptions of traditional trend-extrapolating strategic planning.

As popularized by Peter Schwartz and others, such scenario-based methods are not always articulated in terms of CT. Indeed, Schwartz goes so far as to suggest that scenario planning enables leaders to “reduce th[e] complexity . . . [and] unpredictability” of their future environment (Schwartz 1996, 15), which in CT terms is preposterous. In fact, as we have seen, scenario planning is aimed principally at preparing one to handle unforeseen events, by encouraging the development of institutional and psychological agility and the maintenance of a maximally broad repertoire of adaptive behaviors which can be drawn upon in unanticipated situations. (As indicated earlier, cyberneticists talk of a “law of requisite variety” pursuant to which the larger the variety of actions available to a control system is, the greater the range of perturbations will be that system can handle without failure. In effect, scenario planning is designed to help build just such variety. It is not, however, about making the future any more “certain” or “predictable” than before.)

As coping strategies in the face of uncertainty about one’s future environment, such approaches do offer ways to help minimize hazards presented by the unpredictability that CT teaches us to expect in environments characterized by pervasive nonlinearity and extreme sensitivities to initial conditions. And indeed there is surely much that the public policy community can learn from such approaches, for with the exception of a relatively small number of components of the U.S. policy world—and here the Pentagon’s Office of Net Assessments comes to mind, headed as it has been since 1973 by Herman Kahn’s former colleague at the RAND Corporation, Andrew Marshall—scenario-based planning seems to figure remarkably little in America’s civilian policy development. Nevertheless, since the domestic and international political arenas probably are complex adaptive systems (Mann 1997, 136)—and if indeed U.S. officials are today increasingly forced to spend their time merely trying, as Leon Wieseltier once put it, to “catch up with the contingencies” (Wieseltier 2009) of their environment—then there is surely much to be said for trying more explicitly to plan not just for a single hoped-for outcome but also against a broader landscape of possibilities, both positive and negative.

As we have seen, however, perturbation management is only a partial answer to the policy-maker’s paradox. Indeed, it must be admitted that it is also only a reactive or negative vision, for it consigns public policy, traditionally an arena in which well-intentioned people aspire to change the world for the good, to the unromantic and grimmer business of merely trying to keep functioning under a hail of unexpected shocks. In Thomas Czerwinski’s words, after all, CT teaches us to eschew “solving the problem” and to focus instead, and more prosaically, upon how to “cope with the environment” (Czerwinski 1998, 57). As Professor Peter Senge of the Sloan School of Management has also observed, the Complexity-wise systems analyst avoids prediction, and remains content merely

to perturb the model, trying out different variables in order to learn about the system’s critical points and its homeostasis (resistance to change). The modeler is not seeking to control the complex system by quantifying it and mastering its causality. (Czerwinski 1998, 114)

#### Pluralism leads to a plurality of errors.

Scartozzi 18 – Scartozzi, Cesare M., The University of Tokyo, Graduate School of Public Policy, Department Member. International Relations, Political Philosophy, Political Science, International Security, Complexity Theory, Non-Traditional Security, editor-in-chief of Global Politic Review, Spring 2018 (“A New Taxonomy for International Relations: Rethinking the International System as a Complex Adaptive System”, Journal on Policy and Complex Systems Volume 4, Number 1, Available online at <https://mpra.ub.uni-muenchen.de/95496/2/MPRA_paper_95496.pdf>, Accessed 08-28-2020)

Where Does Complexity Theory Stand? The fourth inter-disciplinary debate between positivist and post-positivist scholars has succeeded in moving out IR from a strictly positivist ground,1 but it has failed in creating cohesion over a new philosophical system. On theoretical pluralism, Dunne, Hansen and Wight wrote: Only pluralism can deal with a multi faceted and complex reality and only pluralism can deliver substantial progress in terms of knowledge. Given the lack of agreed epistemological standards for assessing competing knowledge claims, we should embrace all perspectives. [ ... ] Our view is that we should attempt to move towards a position we will term ‘integrative pluralism’. [ ... ] 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 multi dimensional accounts of complex phenomena [emphasis added]. (Dunne et al., 2013, p. 417) However, there is an inconsistency in this argument: a sum of not-good-enough theories does not make for a good enough theory. Traditional IR theories are just not equipped with the necessary epistemology and methodology to make sense of complex adaptive systems. Pluralism, in this case, can only lead us to a plurality of errors and misinterpretations. Sure, the more theories we use, the more likely we are to find a tangential explanation for our phenomenon of interest, but none of those explanations will be able to grasp the core dynamics of the international system (adaptation, emergence, and self-organization). For this reason, we should start using complex systems theory also in IR. Moreover, complex systems theory has the potential of reestablishing agreed-upon epistemological standards and promotes consilience in the field of IR. It does so as a non-positivist theoretical framework that integrates concepts and methods used by both positivist and post-positivist scholars. Where positivist implemented an “outside view” of social sciences and post-positivist an “inside view” of it, complexity theory integrates the two views into an “inside-out” ontology that takes account of the nonlinear dynamics that occurs between agents and system in international politics (Harrison & Singer, 2006, p. 38). Notwithstanding its potential, IR scholars have largely ignored or misused complexity science. Often, scholars have sloppily borrowed and decontextualized its taxonomy. This is, for instance, the case of Dunne et al. (2013), who, without ever mentioning complexity theory, defined the international system as a CAS.2 Another scholar that misused complexity theory is Alexander Wendt (1987, 2003), who decontextualized complexity theory as an analogy to support his own arguments; even though his arguments were unsupported from the epistemological and methodological standpoints of complex system theory.3 It appears that Wendt and many other post-positivists in IR have, to some extent, grasped the nonlinearity of social systems. However, they missed to follow through the study of nonlinearity with the appropriate modeling methods and instead used hermeneutic and subjective analyses. This trend is pitiful because the computational techniques offered by complex system theory and agent-based modeling would have allowed them to make large-scale models of system dynamics generated bottom up using the “inside view” that they favor. In sum, whereas positivist scholars bluntly ignored nonlinearity in international affairs, post-positivists ignored the methodologies and analytical tools that could be used to study it. Consequently, both scholarships “missed a lot” by not being able to observe or explain the emergent global dynamics resulting from nonlinear interactions of composite agents in the international system (Richards, 2000a, p. 2). As Diana Richard (2000a) wrote: No wonder very few clear empirical relationships have been found over decades of political science. If it is a nonlinear world and we are looking with “linear vision,” then we can only catch a small portion. Furthermore, our models of constant effects will miss something fundamental about what we are studying; as the saying goes, it’s like throwing a dead bird to model the flight of a live bird. (p. 2) As this paper advocates, it is time for IR to stop missing out. Hence, the need for IR to embrace complex systems theory, pose much-needed ontological and epistemological questions, and develop a new taxonomy that will improve interoperability between different epistemological communities and provide the basis for nonlinear modeling in IR.

### 1NC – Complexity – Short

#### The 1AC’s founded on a Newtonian narrative of IR as a linear system of states maximizing self-interest---that shuts out complexity which guarantees failure and ecological collapse---adopt an alternative, relational model instead

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**CT = complexity thinking**

International Relations (IR) has struggled to foster different ways of seeing and encountering the world that can help it generate meaningful answers to the pressing questions of our times. The dominant models of IR are implicated in the construction of a world that is unravelling socially, fracturing economically, and deteriorating ecologically. There is an urgent need for a change in perception, outlook, and vision that can help uncover new modes of thinking and doing world affairs that transcend established paradigms and practices. Proponents of Complexity Thinking (CT)1 have responded to this call by drawing attention to the radical relationality of global life, which contests the Eurocentrism and anthropocentrism that informs the IR mainstream. In the process, CT makes available much-needed vocabularies and optics for engaging phenomena, practices, and dynamics that cut across the turbulent pluriverse of global life. The claim is that CT advances a valuable alternative picture (simultaneously in analytical, ontological, and normative terms) of the fundamental characteristics and purposes of world politics. This article draws attention to such alternative by foregrounding the connection between complexity, relationality and the study of IR.

The point of departure for such “complexification” is the recognition that IR is marked by a poignant lack of ontological pluralism. Regardless of their distinct theoretical commitments, IR scholars tend to subscribe to a “Newtonian” vision of the “world out there” as a closed system populated by states whose interactions are motivated by power-maximization in the pursuit of their own self-interest.2 Thus, given the dynamics of linear causality that backstop this metanarrative, what comes to pass in world affairs is positioned as subject to anticipation as a result of reductionist models which postulate that all physical phenomena change in gradual manner and following foreseeable trajectories. This “atomistic ontology” asserts that all social phenomena are quantifiable and predictable.3 The normative fundamentalism of this stance leads IR to adapt a mindset of continuities that makes it difficult to address chance, change, and uncertainty.4 In particular, the framework of instrumental-rational action has become the standard against which alternative claims are judged. Thus, the “international” produced in this manner is an artefact of ontological and historical constructs with significant epistemic and ethical effects.

According to the proponents of CT, the mechanistic (and nearly clockwork) features of this Newtonian imaginary disclose a normalisation of oppression evidenced by the control, domination and exploitation of various others – be they human (indigenous, non-Western, gender, and other vulnerable communities) or non-human (nature, species, and objects). To be sure, some international phenomena – especially, when treated in isolation – may appear orderly at times (that is, predictable, rational, and linear); however, the point of CT is that systemically, global politics as a whole is defined by non-linearity, recursivity, and unpredictability. Thus, by painting itself in the Newtonian corner, the disciplinary mainstream has, on the one hand, evaded the need to recognise that there are dynamics which are not only unknown, but probably cannot ever be meaningfully rendered comprehensible, and, on the other hand, has stifled endeavours that can engage in thoughtful deliberation of the discontinuities, unpredictability, and non-linearity of global life.5

CT challenges the atomistic metanarrative of IR by proposing a relational ontology in which global life resonates with and through complex and interpenetrating presences whose sociability is infused with the contingent opportunities inherent in the encounter with the other. The very claim that the world is populated by and emerges through the continuous interactions between plentiful varieties of life and matter calls for the positing of alternative ontologies that exceed what is possible (and imaginable) under the Newtonian metanarrative of IR. At the same time, the “comlexifying” move recognises that the current ecological crises are profoundly shaped by the histories of colonialism and the practices of plunder and exploitation. Thus, by moving away from the atomistic universe of IR, CT amplifies the call for relational ethics and politics claiming “a more just coexistence of worlds”.6 CT’s irruptive translation of such coexistence brings in dialogue the form and the substance of the languages and experiences of the diverse and infinitely complex worlds cohabiting in global life. Such relationality becomes coextensive of and standing together with the interpolating spontaneity of surrounding events and things.

#### It’s try or die for the alternative---continued investment in the 1AC’s decision making model locks in escalating global violence to sustain our belief in linear predictive models---only a rejection of the “predict then act” policy model creates a tolerant, caring foreign policy

Emilian Kavalski 20, the Li Dak Sum Chair Professor in China-Eurasia Relations and the Director of the Global Institute for Silk Roads Studies at the University of Nottingham Ningbo, China, 2020, “Inside/Outside and Around: Complexity and the Relational Ethics of Global Life,” Global Society, DOI: 10.1080/13600826.2020.1745158

**CT = complexity thinking**

The discussion of improvisation above backstops the normative suggestion of the complexification of IR – namely, that the capacity to respond creatively to the contingent interaction of global life requires learning the art of acting politically. Global life is not necessarily a place where international actors merely find themselves; it is where they get lost in the complexity of interactions and relationships. In lieu of prescribing absolutes, ethical political action in this setting embraces the relationality of global life and stresses the possibilities emerging from the enmeshment of diverse modes of living. The contention is that in a complex world, relational activities engage individuals as conscious subjects in a responsible and sustainable interaction with each other and their environments. Such a contingent setting rejects established “‘predict-and-act’ models” of management and calls for adaptive policy-making with the “flexibility to respond both to new situations and to new knowledge of the situation”.70 This framing also suggests the emancipatory potential embedded in the “explanatory critique” of CT, which reconfigures political choices in their contextual entanglement with the world.71

Normatively speaking, the complexity of global life confronts IR with the “political effects of agents that are not conventionally perceived as ‘political’” – such as, natural disasters, epidemics, etc.72 Hence, the “threats”, “dangers”, and “insecurity” emanating from non-Western and non-human systems are not conventionally perceived as intentional – i.e. there is no conflict of wills between distinct (and opposing) strategic actors. The focus is on how can we all participate meaningfully in something that can plausibly, but still only vaguely, be called international politics populated by actors whose subjectivity lacks “agential intentionality”73? While this question does not have a singular and definitive answer, a crucial feature of the responses suggested by CT is the demand for an ethos willing to accept and engage with the ambiguity of global life. Such an approach has enormous bearing for an ethics of action in world affairs, especially with regards to issues such as conscience, responsibility, and accountability in situations where prediction and control are elusive. Political action, in this setting, becomes a co-creative process in which people, events, and their “environing circumstances” are in responsive resonance with one another as well as are simultaneously shaped by and shape the spatio-temporal contexts of their interaction.74

As Edgar Morin reminds us, such framing has important effects on the ethics of relational practice: (i) its “multiplication of alternatives” creates favourable conditions for spontaneity and innovative strategies; (ii) its randomness underscores the increasing significance of individual decisions, which can lead to irreversible and unpredictable changes for the entire process. Such “ethical complexification” suggests a relational “ecology of action”, which Morin calls “living life” – i.e. “not just living” (that is, merely existing reactively), but “knowing how to resist in life” by “daring the acceptance to risk”.75 This understanding backstops an ethic of “living otherwise-relationally”76 – namely, the cultivation of relational practices and nuanced adaptations sensitive to the emergent, historically-contingent, and self-organising character of global life. The point is that while global life keeps on asserting its complexity, our policy making seems to be invested in stringent models insisting on staying the course and the “dogged, single-minded pursuit of an effect that is no longer important or even obtainable in the evolutionary system of strategic interaction”.77 CT views global life as a messy social reality, always emergent, embedded in contingent spatio-temporal contexts, and shaped by interrelations with others (as well as the multitude of meanings that such interactions engender as their iterations are themselves inseparable from the multiple webs of relations through which such communication gets refracted).78

The art of acting politically under complexity attests to an ethic of receptivity in resonance with living and becoming in uncertainty. A key feature of this normative framework is the expectation of long-term reciprocity as a result of a “more volatile image of being” that pauses and listens “to the various relays with the world”.79 Such relational ethics offer a marked divergence from the ethics of power politics informing the atomistic ontology of IR. By asserting the stabilising effects of the structure of the international system, the latter “authorizes violence in the name of civilization” in order to sustain the belief in a predictable international life; in other words, the more the world is under “our” control, domination, and conquest, the more secure it is assumed to be – thus, stifling political imaginations and limiting options for action.80 In contrast, CT’s normative stance recalls the intuition that the “realization of the complexity of world politics should make for a more tolerant and broad-minded attitude to foreign policy”.81 Such relational ethics recall an outlook which favours contextual sensitivity to the subtleties of specific interactions at the expense of strict adherence to precise and rigid formulations. Decision making free from the aspiration to control rests on a choice to generate “desirable pathways” in the face of rapid and fast alterations and pervasive uncertainty and risk.82

CT’s relational ontology presages an ethic of care, responsiveness, indebtedness, and mutuality that embraces the multiple interpenetrating enmeshments of global life and values the uncertainty and unintended consequences of these entanglements – all of which, of course, are not limited to the human dimension, but have a cosmic reach.83 At the same time, such “complexification” enables “our assumption of responsibility”. Such relational ethics call for frameworks, policies, and actions informed by a conscious nurturing of meaningful interactions rooted in the ontology of complex interconnections. Thus, acting politically under the conditions of complexity entails rejecting “security seeking” in the conventional sense of this term and taking responsibility for leaving an impact, for forcing things in one direction rather than another – “since there is no way of guaranteeing in advance whether an act is good or bad…[thus] in a specific situation, one must run the risk that the effects of one’s actions turn out bad”.84 In this setting, relational ethics are not about the hubris that we can control outcomes and steer history, but about care, attentiveness, humility, and responsibility to others attuned to the complex trajectories of living together in a shared global life. Thus, the reference to the art of acting politically reveals that the study and practice of IR should not aim at reducing (and controlling) the complexity of global life, but by acknowledging its interwovenness develop adaptive capacities for celebrating and working with the creative possibilities of change.

#### The Newtonian paradigm risks extinction.

Pan 20 – Chengxin Pan, Faculty of Arts and Education, Deakin University, Australia, 2020 (“Enfolding wholes in parts: quantum holography and International Relations”, European Journal of International Relations 2020, Vol. 26(S1) 14–38 © The Author(s) 2020 Article reuse guidelines: sagepub.com/journals-permissions DOI: 10.1177/1354066120938844 journals.sagepub.com/home/ejt, Available online at <https://journals.sagepub.com/doi/pdf/10.1177/1354066120938844>, Accessed 11-08-2020)

In the IR context, the whole goes well beyond states and the totality of their interactions. It embodies the whole social and ecological systems as well as their explicate and implicate relations both between and embedded within their constituent “parts.” Such “parts” may include regions, states, societies, cultures, religions, peoples, economies, markets, goods, histories, ideas, emotions, materials, creatures, and natural phenomena. Of course, what exactly makes up the whole for IR cannot be exhaustively tallied a priori, because by definition such a task is impossible in any given space-time. But the point is that wholeness should be given a higher ontological priority in IR. Just as trees do not grow as assemblages of previously separate branches, leaves, and roots, the world does not start off with merely fragmented parts and preexisting sovereign states which then come together to form a global system; it is the other way round: the whole permeates through the parts and forms the essential relational conditions under which parts emerge and exist. This approach makes it imperative for IR to look for relations in much broader contexts which otherwise have been invisible, understudied, or artificially carved up by mainstream IR. To advocate for wholeness does not mean always privileging “macro-level” issues at the global level. In any case, whole-part or macro-micro issues are always already entangled and co-emergent (Wendt, 2015: 257). Micro parts and issues, precisely because they are microscopic, may be particularly prone to be diffusely spread and enfolded into various parts of the whole. As a result, micro parts simultaneously develop an emergent, holographic property of the whole. The fact that the tiny coronavirus can be quickly enfolded into almost every corner of the whole world and turn global life upside down illustrates the part-whole entanglement, and we dismiss its holographically holistic nature and impact at our own peril. To further illustrate, often traditionally considered outside the purview of IR, micro issues or events such as music (Gienow-Hecht, 2015), sports (e.g. ping-pong diplomacy), the Chernobyl disaster (e.g. the collapse of the Soviet Union, van der Veen, 2013), a flight school in Florida (e.g. 9/11), US subprime mortgage crisis, Fukushima, Wikileaks, melting polar ice caps, a Tunisian street vendor (e.g. the Arab Spring and the Syria conflict) and now even COVID-19 may be all in various ways “localized” holographic instantiations of the wholes. As such, they can and do play an important part in both reflecting and shaping the whole, especially in the form of some unexpected events and surprising turns, such as the end of the Cold War, 9/11, the global financial crisis, the rise of Donald Trump, and the current global pandemic. True, some of those “micropolitical” issues have begun to attract IR’s attention (Kertzer, 2017; Solomon and Steele, 2017), but overall the discipline lacks an explicit and holographic ontological and conceptual foundation for a more systematic engagement with the duality of whole-part. Of course, we cannot deal with “the whole of reality all at once” (Bohm, 1980: 2; see also Wendt, 1999: 14). Often it is necessary to take things “apart” and analyze them as if they were separable units. But it is important to always remember the “as if” caveat, lest we reify them as something objectively autonomous. It is also worth remembering that ontologically international relations are always a holographic part of bigger wholes, not closed or autonomous systems or units in and of themselves. In this context, a quantum holographic perspective becomes imperative especially in the face, for example, of the increasingly apparent human-nature holographic entanglement as evidenced by mounting “glocal” environmental crises and their implications for economic development, international conflict, and planetary survival. Contrary to the prevailing IR approaches that continue to subordinate environmental issues to a state-centric framework and a “national economic” imperative (Saurin, 1996), a quantum holographic approach has the potential to bridge the ontological and conceptual division between the parts and the wholes.

#### Complexity theory can inform positive policy-making but it requires fully embracing the idea that system level outcomes are deeply unpredictable and thus deliberate manipulation of policy inputs is counterproductive. The alternative embraces uncertainty and maximizes flexibility to respond to unforeseen events

Christopher A. Ford 15, former senior fellow at the Hudson Institute, former senior U.S. State Department official, proprietor of the New Paradigms Forum, 2015, “Musings on Complexity, Policy, and Ideology,” in World Politics at the Edge of Chaos: Reflections on Complexity and Global Life, ed. Kavalski, p. 89-97

One answer to the policy-maker’s paradox might be that by sharpening their awareness of nonlinear unpredictability, complexity-infused thinking can encourage leaders to take approaches to policy making that anticipate the possibility of unforeseen outcomes. Complexity, that is, can teach decision makers to make postures, policies, and organizational forms as flexible and resilient as possible in order to maximize their ability to survive unexpected perturbations. This is only a partial answer to the paradox of course, for it addresses only the problem of unanticipated bumps along the road, rather than whether one can coherently plan one’s journey at all. Nevertheless, the art of “perturbation management” provides at least some riposte to the challenges of unknowability.

In some sense, perturbation management long predates complexity theory, inasmuch as the famous Prussian military theorist Carl von Clausewitz, for instance, placed great emphasis upon the unpredictable impact of “friction” and the notorious “fog of war.”

The purpose of any theory of war for Clausewitz is to explore the entire range of possibilities, including counterfactuals in the sense that physicists understand them. It is not to generate a preconceived set of stable relationships, a checklist of laws valid upon any occasion, “since no prescriptive formulation universal enough to deserve the name of a law can be applied to the constant change and diversity of the phenomena of war.” (Beyerchen 1997, 160)

On the basis of just such an understanding of the impact of friction—as suggested by Helmuth von Moltke of the Prussian general staff, perhaps best remembered today for his pithy but telling observation that no plan survives first contact with the enemy—much of modern Western military science has come to emphasize small unit autonomy and operational flexibility within broad guidance set by a higher-level commander’s intentions (Schmitt 1997, 239–41). (Some modern writers, explicitly invoking CT, have advocated similar approaches for managing high-tech commercial enterprises [Maxfield 1997, 188].)

In the mid- and late twentieth century, the field of systems analysis also came to emphasize the kind of operational flexibility that would enable systems to survive and function in the face of unwelcome perturbations. The founder of the Washington, D.C., think tank Hudson Institute, for instance—the seminal nuclear strategist and futurologist Herman Kahn— preached the virtues for public policy making of what he called “a kind of planned muddling through.” In this vision, it was the aim of policy research to “prevent[] the foreclosure of options that would make muddling through impossible, and enhance[] the consensus on basic directions and destinations that makes muddling through successful” (Kahn 2009, 164). As a result, he felt, “[s]ystems, programs[,] and policies should . . . be made as flexible as possible, and be designed to enable future decision-makers to ‘muddle through’” (Kahn 2009, 182–83).

One way to do this, Kahn suggested, was to modify systems in order to “enable [them] to cope with ‘off-design’ situations,” in the sense not only of “acquiring emergency capabilities for dealing with relatively less favorable— including improbable—contingencies than those expected” but also of being “able to take advantage of unexpected but more favorable situations if they arise” (Kahn 2009, 165). He also exhorted policy makers to approach their work with intellectual humility, alive to the inescapable possibility that their theories might be wrong. Advocating the “agnostic use of information and concepts,” Kahn urged us to be

genuinely agnostic about many of the themes we use; we simply do not know whether they are correct or not, or if they are, we are not sure of the extent of their validity. It is therefore important to hedge against these theories being right without relying on their being right. (Kahn 2009, 169)

We should, in other words, prepare not only our organizational forms and policy toolkits for “‘off-design’ situations,” but indeed prepare our minds as well. In this light, an important criterion for evaluating policy alternatives is how any particular course of action would likely fare in the event that its animating assumptions turn out to be wrong.

Kahn’s analysis was not explicitly built upon CT, but it is obviously quite alive to the challenges of nonlinear unpredictability and outcome unknowability, and thus provides one type of answer to the policy-maker’s paradox. This is an answer that concedes that we cannot really predict or control the future, but which nonetheless aspires to limit the damage that might be caused by potentially destructive perturbations, and to make leaders as prepared as they can be to take advantage of unforseen opportunities.

And indeed, in recent decades there has been significant growth in organizational and management thinking designed to achieve these ends. Beginning with the work of Pierre Wack for Royal Dutch Shell in the 1970s, for example, businesses have been learning a great deal about the importance of scenario-based planning—a method of trying to cope with the unpredictable nonlinearity of one’s operating environment that does not tie an organization’s fate quite so dangerously to the linear assumptions of traditional trend-extrapolating strategic planning.

As popularized by Peter Schwartz and others, such scenario-based methods are not always articulated in terms of CT. Indeed, Schwartz goes so far as to suggest that scenario planning enables leaders to “reduce th[e] complexity . . . [and] unpredictability” of their future environment (Schwartz 1996, 15), which in CT terms is preposterous. In fact, as we have seen, scenario planning is aimed principally at preparing one to handle unforeseen events, by encouraging the development of institutional and psychological agility and the maintenance of a maximally broad repertoire of adaptive behaviors which can be drawn upon in unanticipated situations. (As indicated earlier, cyberneticists talk of a “law of requisite variety” pursuant to which the larger the variety of actions available to a control system is, the greater the range of perturbations will be that system can handle without failure. In effect, scenario planning is designed to help build just such variety. It is not, however, about making the future any more “certain” or “predictable” than before.)

As coping strategies in the face of uncertainty about one’s future environment, such approaches do offer ways to help minimize hazards presented by the unpredictability that CT teaches us to expect in environments characterized by pervasive nonlinearity and extreme sensitivities to initial conditions. And indeed there is surely much that the public policy community can learn from such approaches, for with the exception of a relatively small number of components of the U.S. policy world—and here the Pentagon’s Office of Net Assessments comes to mind, headed as it has been since 1973 by Herman Kahn’s former colleague at the RAND Corporation, Andrew Marshall—scenario-based planning seems to figure remarkably little in America’s civilian policy development. Nevertheless, since the domestic and international political arenas probably are complex adaptive systems (Mann 1997, 136)—and if indeed U.S. officials are today increasingly forced to spend their time merely trying, as Leon Wieseltier once put it, to “catch up with the contingencies” (Wieseltier 2009) of their environment—then there is surely much to be said for trying more explicitly to plan not just for a single hoped-for outcome but also against a broader landscape of possibilities, both positive and negative.

As we have seen, however, perturbation management is only a partial answer to the policy-maker’s paradox. Indeed, it must be admitted that it is also only a reactive or negative vision, for it consigns public policy, traditionally an arena in which well-intentioned people aspire to change the world for the good, to the unromantic and grimmer business of merely trying to keep functioning under a hail of unexpected shocks. In Thomas Czerwinski’s words, after all, CT teaches us to eschew “solving the problem” and to focus instead, and more prosaically, upon how to “cope with the environment” (Czerwinski 1998, 57). As Professor Peter Senge of the Sloan School of Management has also observed, the Complexity-wise systems analyst avoids prediction, and remains content merely

to perturb the model, trying out different variables in order to learn about the system’s critical points and its homeostasis (resistance to change). The modeler is not seeking to control the complex system by quantifying it and mastering its causality. (Czerwinski 1998, 114)

### 1NC – Floating PIK

#### The alternative is to reject the prognostication of the aff and instead engage in bottom up solutions which gradually scale through a process of trial and error

Mueller 20 [Bernardo Mueller, PhD @ UIUC, May–August 2020 and current lecturer @ U of Brazilia, "Why public policies fail: Policymaking under complexity," [EconomiA](https://www.sciencedirect.com/science/journal/15177580) [Volume 21, Issue 2](https://www.sciencedirect.com/science/journal/15177580/21/2), May–August 2020, Pages 311-32, https://www.sciencedirect.com/science/article/pii/S1517758019300931, accessed 4-9-2021]LHSBC

Another approach is to give up the pretension of prognostication and rely instead on experimentation and trial-and-error. Watts (2011, p. chap. 8) gives several examples of strategies for what he calls ‘reacting to the present’.4The first is the strategy used by the Spanish clothing retailer Zara for deciding on future designs, styles, fabrics, etc. Instead of depending on the wisdom of stylists and couturiers to divine the fashions that the whims of consumers will favor inthe upcoming season, Zara follows what they call a measure-and-react strategy, where they have a large number of agents across the world go to places where people gather and transit, to harvest ideas from what the man and womenon the street are currently wearing. These inspirations are quickly designed and produced in small batches that are,in a short span of time and at low cost, tried out in stores across the world. Those that are well-accepted have their production expanded and further pursued, while those that fail are quickly abandoned. This strategy has made Zara(Inditex fashion group) the top fashion apparel retailer in the world (in 2017) and its founder, Amancio Ortega, thethird richest man in the world (January 2018).This strategy allows the design to emerge from the bottom up rather than being decided from the top. It could potentially be used for public policy purposes in those situations where it is hard to predict how the subject of the policy will react or what are their preferences. This would require, however, a change in society’s and the government’s mentality towards public policy, as the strategy necessarily involves error and failure. The traditional approach to public policy see’s failure not as a means to learn and reveal information, but as incompetence and something that must beaverted and punished.

### 1NC – AT: Realism

#### Realism – only works because it omits every domestic variable.

Garlick 16 – Jan Masaryk Centre for International Studies, Faculty of International Relations, University of Economics, Prague, Czech Republic, (“Not So Simple: Complexity Theory and the Rise of China”, China Report (2016), Available online at DOI: 10.1177/0009445516661884, Accessed 09-14-2020)

For Waltz, states in the anarchic international system are, according to the well-worn metaphor, like billiard balls bouncing off each other and jostling for position in order to serve their own interests. Waltz’s theory implies that China, like all other states, will compete for power, territory and resources amid the Hobbesian anarchy of the Westphalian system of sovereign states. Waltz’s neorealism is a parsimonious theory which depends on a structural analysis of the international system to predict a dog-eat-dog world of competing states. However, the very parsimony of the theory means, as Humphreys (2006) points out, that its explanatory power is limited and unsatisfactory. For Humphreys, the main problem with Waltzian neorealism lies in the fact that it inexplicably attempts to reduce the complexity of the international system to a single independent variable (anarchic structure). This means that Waltz perceives the international system in a linear fashion, with the independent variable of anarchy (i.e., the ‘war of all against all’) exerting a direct causative effect on states’ behaviour in the international system, leading them to pursue strategies of self-help. The linearity of Waltz’s theory may appear parsimoni- ous and compelling, but, as neoclassical realists and complexity theorists point out, fails to account for complex phenomena in terms, for instance, of how foreign policy impacts upon and is impacted by developments in international affairs (see for instance Bousquet and Curtis 2011; Kavalski 2007; Rathbun 2008; Rose 1998). In the specific case of China’s rise, Waltz’s focus on anarchy tells us that China will compete with other states, but not how. In essence, he does not tell us enough to enable us to see anything beyond a vague picture of China and self-help, undifferentiated from all the other ‘like units’ (states). Waltz’s neorealism cannot predict in what direction China’s rise will take both it and the world in general, beyond a general expectation of competition and increasing influence as China’s capabilities increase. Thus, it does not provide us with any detailed or useful explanation or prediction beyond what is already quite obvious. This is largely because of what Waltz consciously leaves out. He claims that the logic of his structural analysis necessitates omitting ‘attributes and interactions’, by which he means ‘questions about the cultural, economic, political, and military interactions of states’, as well as ‘the kinds of political leaders, social and economic institutions, and ideological commitments states may have’ (1979: 80). Questions concerning ‘environment, situation, context and milieu’ are, according to Waltz, ‘vague and vary- ing systemic notions’ which can be entirely replaced by the analysis of structure alone because they have no explanatory value in a theoretical sense (1979: 80). Waltz does attempt to account for differences in the sizes and capabilities of states, but does not satisfactorily build these factors into his states-as-like-units model. For understanding a rising China, then, there is ostensibly little more that can usefully be gleaned from Waltzian neorealism beyond the general expectation of Hobbesian self-help in an anarchic international system. Because Waltz believes that the international level of analysis has to be sharply demarcated from the domestic, and so he thinks it is necessary to omit all information about China’s culture, economy, politics, and so on, his theory cannot reveal anything about the detailed mechanics of China’s rise on the international stage as the nation interacts and develops its relation- ships with other actors. On the other hand, neoclassical realism offers an interesting development of Waltzian neorealism, in that it attempts to analyse the complex impact of domestic policy on international affairs. Neoclassical realists such as Rose (1998), Christensen (1996), Wohlforth (1993) and Zakaria (1999) base their theorising on Waltz’s emphasis on structure and anarchy, but attempt to develop his theory further by giving more weight to domestic factors in foreign policy decision-making. Christensen’s (1996) study is particularly interesting for students of China because it attempts to apply a ‘two-level’ analysis of international and domestic factors to Sino-US relations between 1947 and 1958. Neoclassical realists, in essence, claim that neorealism, by focusing exclusively on the international level of analysis, does not account for ‘domestic politics and ideas’ (Rathbun 2008: 294) in its analysis of states’ behaviour at the international level. However, there is disagreement about the value of neoclassical realism, and also about whether neoclassical realists are really doing something different to neorealists in general or just expanding on its ideas about structure and anarchy (see Legro and Moravscik 1999; Rathbun 2008; Vasquez 1997). Two notable neoclassical realists (Thomas J. Christensen and Jack Snyder) have even further muddied the waters by going so far as to decline to take part in a debate about whether they are neorealists or not; they do this on the basis that they neither want to be ‘apologists for neorealism’ nor to attempt to ‘reconcile the heterogeneous arguments’ of scholars who are gener- ally labelled ‘neorealist’ (Christensen and Snyder 1997: 919). The other major weakness of the neoclassical realist project is that it has not yet come to fruition in terms of being fully expounded in theoretical terms. To be specific, while there is value in pointing out that domestic variables need to be incorporated into realist theory, neoclassical realism has not yet managed to convincingly posit an explicit theoretical framework within which this can be done. It is for this reason perhaps that neoclassical realism has been criticised for being ‘an ad hoc and theoretically degenerative effort to explain away anomalies for neorealism’ (Rathbun 2008: 294), since neoclassical realists’ ‘use of whatever tools are necessary to plug the holes of a sinking ship’ results in ‘paradigmatic incoherence and indistinctiveness’ (Rathbun 2008: 295). There, therefore, remains an obvious need to develop a clear and convincing theoretical framework for neoclassical realism’s attempt to take neorealism in a direction which systematically accounts for the effect of domestic variables on foreign policy. Thus, the possibility that CT might be able to provide the missing link from neorealism to neoclassical realism, by supplying some conceptual tools with which to study the way in which foreign policy interacts with international phenomena, is an intriguing one. In this article it is not possible to do more than point out the need for more research into the possibility of CT providing a set of tools for filling out the internal mechanics of neorealism and neoclassical realism, and to suggest that this could be done in order to attempt to develop a more complete theoretical framework within which to analyse complex international phenomena such as China’s rise.

# 2NR

## Overview

### Overview

#### Our argument is that the affirmative is invested in a linear, newtonian, and deterministic of International relations – this debate is not a question of the plan but rather consequences of the decision-making model that the plan uses –

#### The thesis of their advantage is that nations need to be rationally convinced that other nations won’t obliterate them with their [lethal autonomous weapons] and this will recalibrate deterrence and the geopolitical order to a point of stability – the underlying assumption of “equal and opposite” forces bringing through peace conceives of international states as a linearly-bounded physics experiment, that there are two-ended strings that must maintain balance. They treat geopolitics as an equation that can be solved by plugging in a variable. This incessant cry for determinism in IR boils down geopolitics to a set of rules which makes embracing the complexity paradigm impossible.

#### Multiple impacts –

#### 1 – Serial Policy Failure – linear scenario planning can’t accurately grapple with the multifaceted world of public policy because it always misdiagnoses the problem and solution – it’s try or die for a better form of policymaking – Kavalksi 20

#### 2 – Global violence – in an attempt to suppress volatility and force the world to conform to its rigid rules of IR, states mobilize militaries to keep the peace – empirically proven by the way that the US mobilized armies in vietnam, libya, and iraq which only lead to worse system blowups – that’s Taleb and Blythe 11

#### 3 – Ecological destruction – linear models foreclose tackling complex threats – global warming has a multiplicity of causes and solutions and framing the world through only states and the rules that governs them forecloses the policies necessary to avert extinction – that’s Pan 20

## Alternative

### Alternative

#### The alternative is complexity theory – we should adopt a paradigm of adaptable and flexible policymaking that recognizes the inherent unpredictability of the modern world. Instead fo rigidly planning for a single outcome, policies should prepare for a range of possible scenarios ensuring systems can withstand unforeseen opportunities. This looks like designing disaster response plans that account for multiple and possibly simultaneous emergencies

#### Solves case – instead of confining to a strict managerial paradigm that flounders when encountering black swan events, the alternative establishes flexible and reactive policy that dampens any affect

### Floating PIK

#### The alternative is a floating PIK – the sheer complexity of the world order means it’s impossible to macro level solutions right 100% time – we should instead adopt policies on a small scale and gradually scale them up and gauge the international order’s response and immediately abandon it if it goes wrong – in the context of the aff, it looks like gradually rolling back autonomous tech in some military companies and gradually building that out towards the rest of the world.

### AT: Perm Do Both

#### 1 – Links are disadvantages to the permutation – you can’t say “states will definitely proliferate laws and definitely deploy them and definitely use them in an escalatory and unstable manner” and then also say that IR is complex and that we can’t predict actions

#### 2 – Severance is a voter – shifts the aff and makes it impossible for the negative to generate links or offense

#### 3 – Footnoting – scholars will footnote complexity theory by briefly mentioning it but then asserting their linear readings of the world are are superior – proven by the way the aff tries to combine itself with complexity theory but then still asserts their linear predictions are correct

#### 4 – If they win a perm, judge kick the alt and vote on risk of their decision making model and presumption on case

### AT: Perm Double Bind

#### Intrinsic permutations are a voting issue – you wouldn’t let a team answer the regulations counterplan with “do the aff and the counterplan in all other countries” – intrinsic permutations means the neg loses every time because it lets the aff spike out of all core negative disagreement – the only neg advocacy under their model is “ban the plan”

## Predictions

### Predictions are impossible

#### Linear predictions within International Relations is impossible

#### 1 – Self-organization – IR isn’t one part influencing another but rather a whole comprised of parts that act and react to each other constantly – monocausal analysis ignores these feedback loops which make IR dynamic and resilient - that’s kavalski 07

#### 2 – Too much knowledge – Menand says that empirically IR experts are worse at predicting events because they overemphasize underlying rules of the global order instead of contingency and common sense

#### 3 – Observer Effect – the more we know about the status quo the more we foreclose the possibility of changes within that system proven by the Arab Spring – scholars were certain that the middle east couldn’t be democratized because of their certainty of the status quo – that’s the ev Obi-Okli 14

#### 4 – Empirics – Collapse of the Soviet Union, 9/11, 08 economic recession, 2015 European immigration crisis, election of Donald Trump, and Covid-19 all were not predicted

### AT: Specificity

#### 1 – Do not fall prey to the cult of specificity – We’ve forwarded a structural claim about deterministic IR and they have no reasoning to disprove the rule – the link work above should prove why the aff isn’t “specific”

#### 2 – It cuts the other way – none of their evidence is specific to the claims about IR that we’ve made

#### 3 – If anything, this just means vote negative on presumption – taiwan, SCS, islands in the phillipines sea, hypersonics, precision guided munitions, nuclear modernization are all mass thumpers that the specificity of the aff can’t solve

### AT: Data

#### 1 – The aff doesn’t use data – it uses postulating from military documents

#### 2 – This card doesn’t justify linearity at all

#### 3 – if predictions can get better this debate proves that you should vote negative and tell the aff to use complexity modeling

#### Linear regressions have predicted 0% of conflicts. Conflict data is a joke.

Crammer and Desmarais 17 – Skyler J. Cranmer, The Ohio State University, Department of Political Science, and Bruce A. Desmarais, Pennsylvania State University, Department of Political Science, April 24th (“What Can We Learn from Predictive Modeling?”, Political Analysis, Vol 25, pp. 145-166, Available online via USC Libraries, Accessed 10-09-2020)

Illustrative Application: Predicting International Conflict We now endeavor to demonstrate as many of the advantages of predictive models discussed above as possible within the confines of a single example. We attempt the prediction of violent international conflict, something notoriously hard to predict, and consider what predictive modeling can teach us about this process. 5.1 The paucity of predictive models of interstate conflict Empirical analysis in conflict processes research relies almost exclusively on explanatory modeling, typically using regression. Predictive models, which do not necessarily aim to operationalize a causal theory, are then often seen as the tools of applied scientists or policy analysts rather than of the basic, explanatory science in which we typically engage (Schneider, Gleditsch, and Carey 2010, 2011). It is perhaps not surprising then that there is little predictive work in this field and what does exist is relatively recent. Beck, King, and Zeng (2000) touched off the contemporary debate on predictive models for conflict with a study that uses a neural network approach, which predicts 17% of conflicts, compared to 0% by a conventional logistic regression. This study led to much debate over the utility of restricting samples to only dyads that had a reasonable chance of conflict in the first place, and even sparked some interest in neural networks (which we discuss further below), but failed to produce a substantial literature on predictive models for conflict. In one of the few studies of conflict prediction that followed Beck, King, and Zeng (2000), Ward, Siverson, and Cao (2007) use a Bayesian, Hierarchical, Bilinear, Mixed-Effects model stratified by time to gain an improvement in out-of-sample prediction, again over a fairly standard logistic regression; in this case, the one originally proposed by Oneal and Russett (1999). The model offers a substantial improvement in predictive ability over logit, but does not compare the performance of its method directly to that used by Beck, King, and Zeng (2000). One reason the predictive literature on international conflict is so sparse may be that the structure of the conflict data is such that predictive modeling is difficult with existing technology. For example, time-series approaches to prediction, well established in both economics and political science, are difficult to apply to data that span every possible conflictual relationship in the world over time. None-the-less, there has been a recent increase in predictive work on other conflict processes, including civil wars (Rost, Schneider, and Kleibl 2009; Ward, Greenhill, and Bakke 2010), transnational terrorism (Desmarais and Cranmer 2011), and single-conflict timeseries analyses (Pevenhouse and Goldstein 1999; Schrodt and Gerner 2000; Brandt, Freeman, and Schrodt 2011; Schneider 2012).

### Threats are real

#### 1 – Not responsive – our argument is not your threats are constructed but rather you cannot make predictions about IR in the first place

#### 2 – Predictions impossible – IR couldn’t predict the end of the Cold War, 9/11, 08 economic recession, 2015 european immigration crisis, election of donald trump, and covid-19 – force the 2AR to name examples of when IR theory could adequately predict and solve a global threat

#### 3 – Even if they win that IR can explain those events, they haven’t won that IR can predict existential events – there’s a difference between being able to explain things after the fact and being able to predict them beforehand – we say you can’t do the latter

#### 4 – Conflict of Interest – their authors ­make a living off of making predictions about IR – of course they’d say their predictions work or else they’d be out of a job.

## Framework

### Framework v2

#### Our interpretation is that the affirmative should justify the legitimacy of their predictive model before they get access to the plan – logic –

### Framework

#### Our interpretation is that the affirmative is an object of research and the aff needs to win its research model is ethical prior to weighing the consequences of the aff

#### prefer because debate and its research practices alter subjectivities proven by the saturation of hyper-leftists in the activity – there’s a reason so many debaters are activists, scholars, public defendants

#### Even if they win they get to weigh the aff, we get links to their epistemology because it would otherwise sanitize racial slurs, misgendering, and other problematic discourses because case outweighs

#### We also have a link to the plan – the aff’s policy of supressing volatility only creates more violence and black swan blowups down the road – Taleb and Blythe

### AT Fairness

#### 1 – Valuing competition bad – pushes people out of the activity because they’re taught to cut cards until 2AM and be jerks for the sake of perceptual dominance – independently causes valorization of debaters just for their own competitive merit even when they commit heinous violence outside of the round.

#### 2 – Structural unfairness non-uq’s – cutting cards, more coaches, going to camp, getting faster etc.

#### 3 – They chose advantage areas and had infinite prep to do so, they should defend them – also critical literature has been around before the judge was born and normalized into every learning institution proven by the endless slew of camp lectures which means they should have some prep

#### 4 – They can weigh their research model – just win that your version of IR is better

#### 5 – Use strength of link – some marginal fairness harm doesn’t outweigh our massive subject formation disad

#### 6 – No intrinsic value to fairness—you can get it from playing monopoly. Fairness only matters to the point where it offers an internal link to the education allowed by debate. If we win that the education you create is unethical, that outweighs a marginal decrease of fairness.

### AT Clash

#### 1 – Impact turned – refinement of linear models is counter-productive and produces bad impacts – that was above

#### 2 – Restrict debate down to a 5 second plan text – interrogating the rest of the 1AC allows for a broader more nuanced debate

#### 2 – They should be prepared

#### [that was above] OR

#### [They chose advantage areas and had infinite prep to do so, they should defend them – also critical literature has been around before the judge was born and normalized into every learning institution proven by the endless slew of camp lectures which means they should have some prep]

### AT Scenario Planning

#### Scenario planning is charting problems, laying out potential paths of actions, and identifying potential uncertainties which the aff isn’t – they dogmatically pick the biggest baddest problem and only one solution while asserting that it’ll work 100% of the time

# More Cards

### To Sort

#### AT Perm?

Mueller 20 [Bernardo Mueller, PhD @ UIUC, May–August 2020 and current lecturer @ U of Brazilia, "Why public policies fail: Policymaking under complexity," [EconomiA](https://www.sciencedirect.com/science/journal/15177580) [Volume 21, Issue 2](https://www.sciencedirect.com/science/journal/15177580/21/2), May–August 2020, Pages 311-32, https://www.sciencedirect.com/science/article/pii/S1517758019300931, accessed 4-9-2021]LHSBC

There are several innovative approaches in business and in government that have characteristics that make themsuitable for dealing with complex problems. Many of them use new information technologies to get around thoseobstacles and enable solutions to emerge, many times, from the bottom up. I describe some of these approaches below.Yet, though these solutions are promising and many times even astonishing, it is important to point out that they areusually not silver bullets that suddenly allow all policy goals to be magically reached. I argue that even when thesecomplexity-compatible approaches are used, they usually only ameliorate some dimensions or aspects of the problemand not the entire policy concern. The fundamental complexity of the problem remains. Therefore, it is essential that inaddition to using smarter and more appropriate tools and approaches, one realistically reassess what can be expectedfrom the policy. Almost always, what can truly be achieved is much less than our expectations demand. Smarterapproaches can greatly improve a complex situation, but they cannot transform a complex situation into a simpleproblem that can be controlled at will. Complex policy areas remain complex and some objectives simply cannot beachieved, so we should soberly downgrade our expectations.In some cases, this means simply abandoning the intent to pursue that specific policy. It’s just too complex, too riskyand can fail in ways that do not compensate the risk. An example is a policy to forcefully promote democracy, rule oflaw and other liberal values into other nations. There is much evidence that such efforts have not fared well historically,and in some cases, has been disastrous, e.g. Iraq and Afghanistan (Diamond and Plattner, 2015; Hermann and Kegley,1998). Most policies that fit this category are controversial for a lot of reasons, political, ethical, philosophical, etc. Buteven setting aside these ideological issues, policies like geoengineering, cloning, and new planned cities, are probablytoo complex and interdependent to ever get right

#### At perm 2

Cairney 12 [Paul Cairney, 8-7-2012, "Complexity Theory in Political Science and Public Policy," SAGE Journals, https://journals.sagepub.com/doi/10.1111/j.1478-9302.2012.00270.x, accessed 4-11-2021]LHSBC

The second source of potential regards ‘impact’. Complexity theory appears more likely to be used to produce practical advice to practitioners than to inform the wider theological debates on structure and agency that we find in political science. Further, as Room (2011, p. 306) suggests, complexity may compete well (for example, within government training courses) with ‘policy cycle’ models based on the division of tasks into discrete stages (see Cairney, 2012, pp. 32–4). In this context, the restatement of themes that are already in good political science currency is less problematic. These points are perhaps being restated because the lessons from ‘bottom-up’ studies have been lost or ignored, and governments continue to operate in a top-down manner rather than engaging in a more meaningful dialogue between those who design and those who deliver and use public services (Butler and Allen, 2008; Kernick, 2006, p. 388).The academic world is well placed to foster that conversation.

### Yingling

#### Squo engagement coupled with recognition fails

Yingling 11 [Paul Yingling, 12-2-2011, "Why an Army colonel is retiring early — to become a high school teacher," Washington Post, https://www.washingtonpost.com/opinions/why-an-army-colonel-is-retiring-early--to-become-a-high-school-teacher/2011/12/02/gIQAB2wAMO\_story.html, accessed 4-8-2021]LHSBC

My friends express these concerns reluctantly; they may hold teaching in low regard but don’t want to be seen as holding it in low regard. More important, they remind me, I’m not just any soldier. Casting aside false modesty (the only kind we colonels know), I admit that my military career has followed an unusual path. Over the past decade, I’ve written articles and given speeches on the failure of senior officers to adapt to the challenges of irregular warfare. I’ve advocated reforming the military’s seniority-based personnel system to reward moral courage and intellectual rigor. My best-known article, [“A Failure in Generalship,”](http://www.armedforcesjournal.com/2007/05/2635198) appeared in 2007 and caused the Army to rethink the way it educates its generals. My work on warfare and leadership has been cited by political leaders and included in the curricula of military academies and war colleges.∂ My friends and colleagues assumed that I had a bright future in the Army, or else a lucrative new career as a defense contractor or consultant. They expected that, at age 45, I would do something more with the second half of my professional life. Not just different, but more — meaning that teaching isn’t very much, or at least not as much as I could do.∂ So why teach? For me, the answer lies in two moments. The first has occurred a half-dozen times over the past five years in conversations with four-star generals and politicians. Behind closed doors in Washington, there is widespread recognition that while our troops are remarkable, the great majority of our generals are not. In private meetings with senior leaders, I explain how parochialism, ambition and greed have corrupted our national security apparatus. Bad advice and bad decisions are not accidents, but the results of a system that rewards bad behavior.∂ When I finish, I see a glimmer of recognition in their faces, a sense that the problems I’ve described are real but not intractable. They ask a question, and then interrupt my answer with another, and another after that: We’re better than this, aren’t we? But soon the glimmer fades, and the eyes shift downward, as if to calculate the odds and costs of reforming an entrenched bureaucracy. The voices go flat and the faces impassive.∂ The second moment is the polar opposite. Unbeknownst to all but my closest friends, my great passion is not military reform but youth baseball. I’ve coached since my 18-year-old son was old enough to hold a bat, and at all ages from preschool to high school. Every spring, I tell each kid to have fun, hustle every play, get better every day and be a good teammate. Every batting practice, I give the same tips — hands back, knees bent, level swing, eye on the ball.∂ Every season, there is at least one kid who just doesn’t get it, who is embarrassed about not getting it, who leaves practice on the verge of tears, determined never to pick up a baseball again. Every season, I work with that kid one on one, before and after practice, on Sunday afternoons, anytime when other kids aren’t looking and there’s no reason to be embarrassed. After about the third practice, I see in that kid a glimmer of recognition, a sense that he or she is getting it, can do it and doesn’t have to be embarrassed.∂ There is no calculation of odds or costs, only a sense of expanding possibilities. The glimmer grows each day — if I can hit a ball, what else can I do? It spreads — if one of us can get better, why can’t we all? This moment becomes a series of moments, experienced individually and as part of a larger whole.∂ Spring turns into summer, and this series of moments becomes a set of habits. These habits — a passion for excellence, a willingness to work, a commitment to others — are more about character than baseball. Shaped carefully, they cement the foundation of a young person’s character.∂ Weighing these two moments, and alternative futures filled with many more like them, my new career choice became as obvious to me as it was perplexing to my friends. I will leave the Army two years too early to retire with the benefits of a full colonel, but just in time to start teaching next fall. Though I lack an education degree or experience as a student teacher, the [Troops to Teachers program](http://www.proudtoserveagain.com/) helped me complete the requirements for certification as a non-traditional teacher, an apt description of me if ever there was one.∂ Another high school teacher, Aristotle, believed that people form communities not just to preserve life but to pursue the good life. The iconic, life-preserving figures of the post-9/11 era — soldiers, police officers, firefighters — certainly deserve the adulation they receive. However, security is merely instrumental; peace and freedom make a good life possible but not inevitable. Especially in a democracy, we ought to respect most those who foster the character traits that make self-government attainable — parents and teachers, coaches and ministers, poets and protesters. When I hear the Army motto, “This We’ll Defend,” it’s them I have in mind.∂ I’ve served five combat tours in Desert Storm, the Balkans and Iraq, and I’ve had cause to reflect on what it means to live well. It has little to do with money or social status or proximity to power. Instead, amid the clamor of a youth baseball practice, I’m part of a conversation on character that echoes in eternity. The opportunity to engage in that conversation more often is why I want to teach.