

# Intelligence in Postnormal Times

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[journals.sagepub.com/home/wfr](http://journals.sagepub.com/home/wfr)**Jordi Serra<sup>1</sup> and Ziauddin Sardar<sup>1</sup>**

## Abstract

Intelligence services are under an enormous pressure. They have to deal with unusual threats that exhibit unprecedented behavior and often provoke unexpected and disproportionate impacts. They are increasingly ill prepared to meet new and emerging challenges largely because traditional methods are becoming less and less reliable, especially against asymmetric threats. This paper presents a postnormal times (PNT) perspective on intelligence, and argues that intelligence services must do more to cope with radically new hazards without understanding the characteristics and nature of postnormal change. It is necessary to appreciate how contradictions and complexity lead to chaotic behavior in any given situation, and come to terms with evolving levels of uncertainty and ignorance. PNT requires us to rethink the basic axioms of intelligence strategies and tactics.

## Keywords

postnormal times, intelligence cycle, contradictions, complexity, chaos, uncertainties, surface uncertainty, shallow uncertainty, deep uncertainty, ignorances, plain ignorance, vincible ignorance, invincible ignorance, postnormal intelligence

## Introduction

Intelligence services have been struggling with their diminishing capacity to understand, manage, and anticipate complex issues for some time. But with the emergence of postnormal times (hereafter PNT), conventional ways of gathering and assessing intelligence are increasingly proving inadequate and ineffective. The theoretical structure of intelligence discourse revolves around the notion of “secret” or “reserved” information, and intelligence officers still seek vital pieces of information that will uncover the truth and enable them to prevail over their adversaries. Yet, the nature of what constitutes “intelligence analysis or assessment” has changed radically; in an Age of the Snowden revelations and Wikileaks age, many intelligence reports are not all that secret. Moreover, information is not static—to be acquired once and for all as a gold nugget and used again and again. It changes rapidly;

the environment in which information is produced itself experiences accelerated change. Information has thus become a dynamic, ever-mutating entity. The “threats” that intelligence services seek to thwart are also different in nature than they were just a short time ago. The “adversary” is no longer a single, identifiable, monolithic entity. We are now facing increasing threats from non-state actors—not just terrorists, but also criminals with capability to bring down the infrastructure of an industrial state, rogue hackers who can destabilize networks that sustain our economic and financial activities, and contagions that can spread rapidly (naturally or through nefarious designs)

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and decimate huge populations, and all these threats can come simultaneously and from insiders as well as outsiders. Threats and opponents are now diffused and move swiftly, embedded in a web of complexity and entrenched in a host of political, social, and cultural contradictions.

Thus, for intelligence services to remain intelligent they need to give serious attention to the fact that the world has changed fundamentally: it has become postnormal, where “normal,” conventional ideas, methods, approaches, and processes are at best inadequate and, at worse, not working at all. We need new ways of understanding what constitutes intelligence analysis in PNT—both the intelligence services and their users will have to come to terms with the fact that we find ourselves in uncertain and unforeseen circumstances. And a first proof of this is that there are signs that the organizational arrangement of some intelligence agencies is changing. To begin with, some intelligence services have grown and become more diverse. They have embraced many instances from different government and legislative bodies, but not all these institutions are truly part of the services themselves. Therefore, the notion of an intelligence system or community was coined to refer to this all-encompassing grouping. However, the awareness of the need for inclusiveness has not been coupled with the development of real systemic (or communitarian) structures or functioning, as Hammond (2007, 401) points out. Even more, according to Diaz (2016, 59–64), there is not even an accepted and common definition of how such a system or community should be organized and operate. All and all, the capacity to collect inputs from different sources and nature has increased manifold, but our capacity to make sense of them has not increased correspondingly. Furthermore, some intelligence agencies and communities have only been restructured following catastrophic failures, such as what MI6 did following the Iraqi WMD fiasco. The same happened in the United States, and it was only after the Snowden leaks that a major reshuffling that led to a new focus on “digital espionage” took place (Slick 2016). What can

intelligence agencies and communities do to confront the diffuse challenges and threats of PNT? What types of strategies and tactics are needed to help navigate the unthought securitization dynamics of PNT?

## The Emerging Landscape

The notion of postnormal was first introduced by Funtowicz and Ravetz in relation to science. They noticed that in certain areas of science, “facts are uncertain, values in dispute, stakes high and decisions urgent” (Funtowicz and Ravetz 1993, 739). Thus, in areas like climate change and genetic engineering, the unintended consequences of scientific endeavors were hard to grasp and that posed an imminent challenge and threat. It was necessary to define a new approach: “Postnormal Science.” What was limited to the domain of science in the 1980s and 1990s, increasingly became the general condition of our epoch after the turn of the millennium. In 2010, Sardar came up with, and provided a theoretical structure for, the term that has been used more widely since: PNT. He pointed out that we are now living in interconnected, complex networks that are constantly taking us toward the edge of chaos. The postnormal condition, he suggested, is a product of the interaction of three factors: complexity, chaos, and contradictions—the 3Cs of PNT. The 3Cs combine and, with the addition of different varieties of uncertainty and ignorance, make facts, situations, and developments progressively difficult to comprehend, and increasingly problematic to analyze (Sardar 2010, 435).

PNT theory raises some critical questions: can we recognize the emergence of postnormalcy? Can we do anything to prevent systems from going postnormal? How do we cope with uncertainty and ignorance in postnormal situations? The Centre for Postnormal Policy & Futures Studies (CPPFS) has been researching these issues, and initial work at CPPFS has shed some light on these questions.

Let us take a closer look at each element of the emerging postnormal landscape.

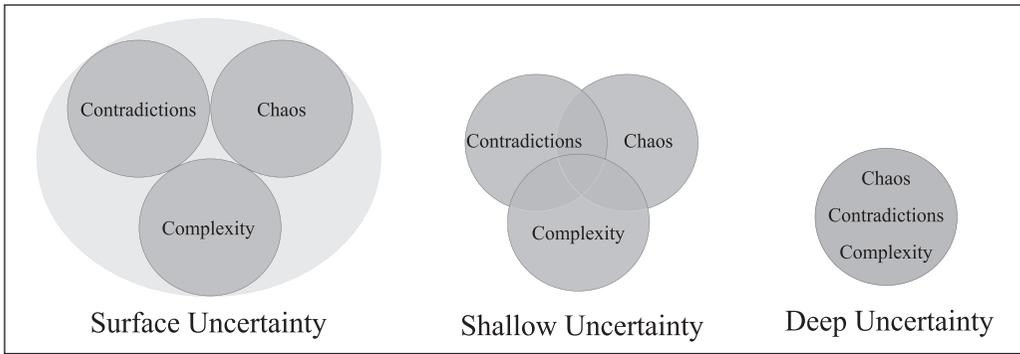
The most common meaning of complexity refers to the features of an interconnected,

networked system whose components can relate or interact in many different ways. “In analysing a complex system,” note David Colander and Roland Kupers (2014, 13), “you have to consider the interconnectedness of the parts together with the parts themselves, which implies that in a complex system, the whole is not necessarily equal to the sum of the parts.” The static and dynamic blend together, and comprehending, managing, analyzing, and hence anticipating them “becomes wickedly difficult.” Complexity is a product of living in a global world of plethora of networks and instant communication. The global dimension not only determines the growing interdependence of our present reality, but it also enhances and diversifies our link to the rest of the world, that is, it makes us more interconnected than ever before and at an unprecedented speed. Information and communication technologies have given complex phenomena a lightning velocity, so they spread rapidly and appear simultaneously. What this means is that our convention notions of cause and effect are no longer valid. With elements that have mutating fluxes of interaction and that appear to show concurrent behavior, we find ourselves incapable of finding neat, linear causal relations. As Serra points out, A no longer causes B; instead A could lead to G, P, X, and Z seem to pop up at the same time due to a conundrum with C, H, L, and M (Serra 2014, 5). So in evaluating a complex postnormal situation, we need to be aware of its interlinked, networked nature, the global scale of the problem, and that fact that it is embedded in an environment of accelerating change.

When great many independent variables interact in many different ways in a networked complex system, a potential outcome is Chaos. Indeed, chaotic behavior can be produced in such systems as the result of minimal variations in the initial conditions that lead to greatly differing effects (the famous “butterfly effect”). Such systems have the ability to balance order and chaos. This balancing point is called the Edge of Chaos: it is where the system is in a kind of suspended animation between stability and total dissolution into turbulence. At the edge of chaos, complex system

can collapse or self-organize into a new order (Sardar 1998). Chaotic behavior is hardly new; we can find numerous examples of systems that exhibit chaotic behavior in many fields—the heart can sometimes beat in a chaotic fashion, a magnetic pendulum can oscillate chaotically, even gravity can behave chaotically in three bodies. As all meteorologists know, the weather is perhaps the most notorious chaotic system of all. But chaotic behavior in financial markets is relatively new, and it is a predominantly new phenomenon in social networks largely because communication had been slow and provided a longer time frame for us to understand (or to construct) social evolution. Now, information reaches us far faster than our capacity to cope with it. Social media connects us instantly; news is broadcast twenty-four hours without any regard for its relevance, even less for its impact. And now there are concerns over fake news spreading across social media, including questions as to whether or not such disinformation can sway national elections. Hence, we have created a competitive world in which being the first to say, send, share, link, tweet, rate, or “like” something is more important than the actual fact or news that it is being transmitted. Therefore, chaos is produced not only as a result of these minimum initial variations but it is also the consequence of our lack of responsibility when using digital media networks.

Contradictions are a natural by-product of living in a complex world that shows chaotic behavior. Yet, contradictions are not just logical inconsistency between two (or more) opposing propositions; they also relate to the fact that nowadays no new phenomenon or development is totally positive or negative, good or bad, but rather simultaneously both. In PNT, we have to abandon the modern notion of progress as something essentially, inherently good and to accept that progress can also lead to hazardous consequences, even catastrophe. At best, progress can be ambivalent. A good illustration is how economic progress has led to fewer and fewer people becoming richer faster and faster, while more and more people are becoming poorer. According to Oxfam, the world’s 388 richest people owned the same



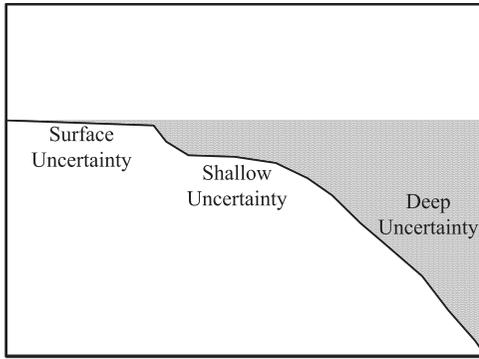
**Figure 1.** Levels of uncertainties.

wealth as the poorest 50 percent. That was in 2010. In 2014, this number dropped to the richest eighty people. By 2015, the richest sixty-two people in the world owned as much wealth as the bottom half of the population (3.5 billion people; Hardoon et al. 2016). The combined wealth of the richest 1 percent was more than the other 99 percent of people on the planet by the end of 2016. Capitalism intrinsically promotes inequality, and though there have been cracks in the system, it persists as the dominant socio-economic paradigm (Piketty 2014). Similarly, advances in knowledge also simultaneously increase our ignorance. We are constantly connected yet quite isolated from other people. Although we know more and more about our bodies thanks to advances in medicine, we seem to know less and less about ourselves and other cultures. Such contradictions can lead to alienation, strife, and conflict, which in a complex, interconnected environment produce social and cultural chaos. Indeed, contradictions enhance positive feedback that accelerates a complex system toward the edge of chaos. Usually, contradictions are the first of the 3Cs to be recognized; often it is the presence of a big contradiction that cannot be resolved that makes us realize that a postnormal phenomenon may be unfolding.

Of course, the 3Cs do not operate at equal levels on all situations. In some cases, complexity may be the biggest component; in others, it may be chaos or contradiction. But, in general, as the 3Cs accelerate and grow, they combine to produce a postnormal situation.

## Uncertainty and Ignorance

Regardless of their specific dimensions, 3Cs interact and overlap to produce three varieties of uncertainties and ignorance (Sardar and Sweeney 2016, 5). Figure 1 illustrates the type of uncertainties that are generated. The specific shape of every PNT situation will be particular and distinctive, and, because of the combination of the different elements, the nature of uncertainty will also be diverse. There will be cases where the 3Cs do not overlap and each has its own defined area; under these circumstance we may have general knowledge of the direction in which change occurs but we are unsure of the probability or impact of its consequences: this is *surface uncertainty* which may be able to manage (up to a point) by using foresight tools. In other cases, such as those in which two of the 3Cs overlap and their overlapping areas are bigger, we would be unable to determine the magnitude and direction of change and therefore would require awareness of its impact and consequences. This is *shallow uncertainty* that requires deeper inquiries to grasp but it cannot be managed or controlled. Moreover, there will be cases where we are not only oblivious of the direction, dimension, and impact of change, but we are also incapable of knowing what is happening to the system because our worldview or epistemology is totally inadequate. This is *deep uncertainty*, and it occurs where the 3Cs overlap together. We must remember that all this is happening in an environment where change is accelerating and new



**Figure 2.** Levels of uncertainties (2).

technologies, innovations, processes, and social and political relations are constantly transforming the emerging landscape. As Alex Younger, head of MI6, said in March 2016, “Britain’s intelligence agencies are engaged in a ‘technology arms race’ with terrorists, cyber-criminals and other ‘malicious actors’ bent on causing the country harm” (*The Guardian* 2015).

An alternative way of thinking about the three uncertainties, and the different kind of actions we can or have to undertake regarding each uncertainty, is to imagine them as distinct points on a beach—as illustrated in Figure 2. Surface uncertainty will be that part where waves end and where water is just a thin layer over the sand. In this part of the beach we can do everything we can normally do on dry sand or soil. Our feet may get wet, but we can walk, run, play, or jump without any problems. The knowledge and experience we have gained on dry land serves us reasonably well. The situation changes in shallow waters depending on the depth. Now, we are unable to walk, run, or play as on dry land. The water will slow us down and we will have to learn to do things a bit differently; in some cases, it may be better to lie down and use both hands and feet. Similarly, in shallow uncertainty we cannot totally rely on previous knowledge and experience, we also have to find new ways of dealing with the situation we find ourselves in, and we may even have to accept that we may not know the evolution or outcome of certain phenomena. Deep uncertainty is like getting into deep

water where we cannot act like we are on the surface or shallow part of the beach. We need to swim or we will drown! Similarly, when faced with deep uncertainty, we can no longer judge or decide on the basis of our previous knowledge and experience. Rather, we need radically new perspectives and approaches to cope with deep uncertainty.

Each type of uncertainty is associated with a particular category of ignorance. The surface uncertainty is connected with *plain ignorance*, which can be defined as the absence of knowledge; it relates to those items or phenomena that we do not recognize but can comprehend with some effort. This is the ignorance we may encounter in a complex or contradictory situation, which may be overcome by understanding the complex networks involved, or appreciating the simultaneous “truths” of actors with contradictory demands (e.g., a government that needs development and a community that wants to preserve its environment, land, and heritage). This is the easiest kind of ignorance as it can be overcome by learning, acquiring new knowledge, appreciating the viewpoints of others, and asking the right questions. The second deeper level of ignorance is *vincible ignorance* and it is related to shallow uncertainty and those situations where we are not sure what questions to ask. But it also has another dimension: the answers to any pertinent questions, if we could ask them, can only be found in future time. A simple example would be the effect of certain genetically modified (GM) foods or the impact of human cloning: we cannot know their side effects in present time. Only when GM foods have been consumed for a number of years, and human cloning has been around for a few decades, will their unintended, second- and third-order, consequences begin to emerge. Vincible ignorance cannot be overcome by learning as there is nothing yet to learn. This ignorance can only be overcome through further research sometime in the future. But it does require us to be aware of, and know, what we do not know! The next level is categorized as *invincible ignorance* and it is linked with deep uncertainty: it is the ignorance of our ignorance, the in-built ignorance of the potential risks of

recent developments, and the ignorance generated from information overload. Invincible ignorance is invincible because it requires us to dispense with our conventional ideas, notions, and accepted paradigms, which prevent us from grasping it. In other words, invincible ignorance cannot be defeated by our conventional tools as it connects with the *unthought* parts of our own worldview; it is the ignorance that compels us to action with a false sense of confidence in existing paradigms and present modes of knowing, being, and doing. We can only grapple with invincible ignorance by questioning our axioms, by critiquing our basic and long-cherished assumptions, by totally rethinking our worldview.

Thus, surface uncertainty can only happen in situations where our ignorance is plain at best, that is, in circumstances in which we may have the data and the information, but we still need to make sense of it—to transform it into knowledge and wisdom. Shallow uncertainty may imply the presence of vincible ignorance as the intervention of complexity, chaos, and contradictions produce outcomes that only manifest themselves in the future. Here, the mere acquisition of data and information will not help; actually, it may make the situation worse by lulling us in a false sense of security and thinking we know that which we cannot know at the present time. Deep uncertainty usually emerges in cases in which invincible ignorance is at work; these are the situations with greater postnormal potential involving greater risks of chaotic behavior and with potential for collapse.

The three levels of uncertainty and ignorance enable us to determine the postnormal potentiality of a particular situation. In the first instance, we attempt to reduce uncertainty by processing the available information to produce hypotheses that could throw some light on what we are seeing. If available information is not enough, we will have to determine if gathering more data will help or not. If uncertainty continues to deepen, it would be an indication that we are moving toward vincible ignorance: we would now have to determine what lines of inquiry could possibly produce appropriate knowledge and the time horizons

involved in acquiring that knowledge. Finally, if the situation has reached a chaotic stage, we know we are dealing with deep uncertainty. We now have to consider if it is our paradigm itself that is failing us, and that would indicate the presence of invincible ignorance. The most appropriate action now is to work toward an alternative, better paradigm.

## Going Postnormal

Any given situation that is complex and contradictory can become chaotic and thus has the potential of going postnormal. But the factors that determine its development toward a fully postnormal phenomenon are the level of ignorance involved and the acceleration of change. It could be argued that uncertainty and ignorance are two sides of the same coin. However, what we learn from PNT theory is that whereas uncertainty is mostly a factual assessment of what we do not know, ignorance is more a perceptual or volitional state of what we fail to know or prefer not to know. In most postnormal situations, there seems to be a moment in which assumed knowledge leads to hasty action, given that there is some urgency involved, and decisions are made without appreciating the full dynamics of the situation.

Let us illustrate this with a few examples: what happened when British Petroleum (BP) decided to extract oil from the Mexican Gulf using the Deepwater Horizon drilling rig (Wikipedia 2017), and the Spanish government's Castor project, the construction of a sea subterranean gas deposit on the Mediterranean coast (Dundee Energy Limited 2017). In both cases, the multinational companies involved undertook several research projects to show that the operations did not involve risks that could not be handled or prevented. The key point here is that in both cases the studies were conducted under the premise (assumed knowledge) that all would go according to plan (or within the contemplated variance) and, therefore, there would not be any unforeseen circumstances or incidents simply because all possible eventualities were already accounted for. And yet unexpected things happened. The BP project caused a major oil spill with a huge

environmental impact that has cost the company billions of dollars (*The Guardian* 2016) - and it may cost it even more as the long-term effects of the disaster are still to be fully measured (Goldenberg 2011). The Castor project did not have such an ecological impact, but it also revealed ignorance of the geology and ecology when coastal villages near the platform began to experience earthquakes. A later study stated that the project was the direct cause of more than three hundred tremors (Phys.org 2013). Here the question arises: at what point is the lack of relevant information the result of poor research or the effect of an epistemological myopia (or arrogance)? In other words, can it really be argued that these consequences were totally unexpected? Given our experience with technology, is it simply ignorance to write off the possibility that something may go wrong? At closer examination, both cases include vincible ignorance, which could have been revealed if the studies' conclusions were seriously challenged. But the cases also contain invincible ignorance as no one questioned the need of the project or the validity of that specific technological approach; it was assumed that all was well with the dominant paradigm. When we are dealing with complex issues, we need to take the possibility that things could go wrong for granted, particularly when positive feedback, accelerated change, and/or chaotic effects may exist. In such cases, it is far better to assume that we do not know all the potential connections and interconnections and that the probability that things could go wrong may be higher than we would like to admit.

The disaster in Fukushima provides us with a final example. Japan has a long experience with natural disasters and, therefore, has developed contingency plans to deal with quakes and tsunamis. Indeed, the Fukushima nuclear plant had plans for dealing with natural disasters. But their procedures did not include the postnormal possibility of a combination of two disasters occurring simultaneously: natural and nuclear. When both happened at the same time, Japan was unprepared to deal with them. The result was total chaos. And the crisis is far from over. The plant is still generating radioactive water that, as there is

no viable system to decontaminate it, is simply stored in thousands of deposits containing more than four hundred thousand tons of radioactive water (and counting as one hundred tons are added daily). Many deposits are spilling and some are even pouring contaminated water into the sea (Enenews 2015). It could be argued that the first disaster was the consequence of invincible ignorance, a product of not having considered all the future possibilities. Yet, the water management issue is even worse as the pressure to "do something" made the company act on poor short-term solutions without fully exploring the future implication of their actions—a position that is closer to vincible rather than invincible ignorance.

A potential postnormal situation is like a fire. If it is not contained and put down quickly, it can spread rapidly to consume everything in its path. Before a fire is fully developed, it goes through a number of stages—known as incipient, ignition, and growth. Postnormal phenomenon follows a similar pattern. We call the movement from the initial stage to full-blown postnormality *postnormal creep*, which includes both internal and external factors. In the initial stage, we examine whether a given situation is complex and networked, and contains obvious contradictions. Such a situation has the potential to go postnormal; just like heat, oxygen and a fuel source combine to produce a chemical reaction that results in fire. This is where intervention can be most productive. Disabling the network will prevent positive feedback, and hence reduce its capability to become chaotic. Negotiating or transcending contradictions may resolve a potential social, cultural, or political conflict. Coming to terms with the complexity of the situation will provide signposts for viable policy and actions. The aim is to prevent "ignition," the spark that starts a fire: the small perturbation that evolves into geometric progression and leads to chaos. As the situation creeps toward growth, it becomes more and more difficult to read it. In fires, to continue our metaphor, urgent but improper water application to unvented areas disrupts thermal balance and causes smoke and steam to circulate within all levels of the fire area creating hazards for the firemen. Also, "deadly

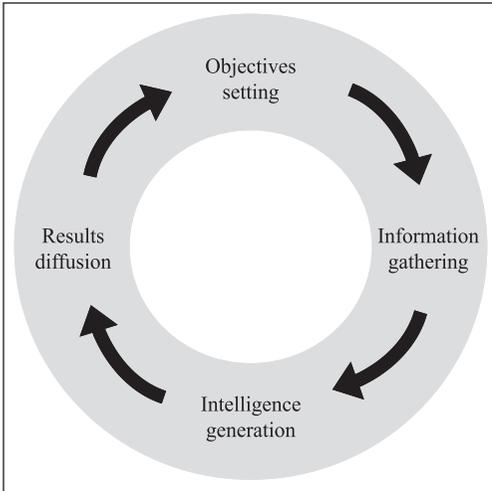
flashover” can occur, trapping, injuring, or killing the firemen. Similarly, once a postnormal situation has entered the growth stage, hasty intervention can be counterproductive. Therefore, at this stage of the postnormal creep, it is better to step back, assess whether shallow uncertainty has emerged, and explore the future dimension of vincible ignorance in an attempt to establish what we do not know about the complexities and intricacies of the situation. The task now is to provide an insulating layer that contains the situation and acts as barriers, hopefully thwarting its progress toward full-blown chaos. Finally, once the situation has reached the edge of chaos, we have invincible ignorance, the outcome of our unthought, things we have never wondered about because they are outside the framework of our basic assumptions and axioms, what Donald Rumsfeld famously called “unknown unknowns.” The unthought lies beyond our imagination; we are unable to think about things that lie outside our imagination that is determined by and limited to our worldview and frameworks of our assumptions and axioms, and often because we do not have a language to deal with such thought. This stage requires us to explore what lies beyond the edge of chaos, navigate deep uncertainty, and imagine what new transformation may emerge, or what the collapse of the existing system would actually mean.

At each stage of postnormal creep, there will be people and organization involved who would either fail to see what is unfolding or choose to deny, or not to know, what is happening. We call this postnormal lag. The postnormal lag does not mean that the creep has somehow stopped or slowed down; it simply denotes the perceptual state of denial in the face of a postnormal situation. A good example is climate deniers who, despite mounting evidence of climate change, and the creep toward a climate catastrophe that we can already witness, either deny the reality of climate change or deny that it is the product of human intervention. Or to put it another way, they are either unable to see the fire or think that it is insignificant enough to be contained.

The Ebola epidemic provides a good example of both postnormal creep and postnormal lag. It began in Guinea in December 2013. It spread slowly to Liberia and Sierra Leone but was considered to be a local affair. Even when cases and deaths with Ebola began to multiply, no steps were taken to help the affected states to contain and eradicate it. Then, cases of secondary infection appeared in Britain, United States, and Spain. As the epidemic grew, it was still projected as a regional affair, and Western countries announced that there was nothing to be concerned about. Ana Mato, the Spanish Health Minister at that time, stated, “we have an alert system that functions perfectly and protocols that work” (Rojas 2014). Yet by October 2014, it became clear that the protocols both in Spain and the United States were not good enough nor were they correctly applied. A nurse, who had treated an Ebola victim and was herself showing initial symptoms of the virus, was allowed to fly on a commercial airline in the United States. The incident was enough to cause a panic, and President Obama had to go on television to reassure concerned citizens. On October 14, when the death toll in West Africa had risen to 9,191 cases, the World Health Organization (WHO) announced that there could be as many as ten thousand new Ebola cases per week by December 2014. A WHO report declared,

nearly everyone involved in the outbreak response failed to see fairly plain writing on the wall. Experts should have realised that conventional way of containing an outbreak would not work in a region with porous borders and broken health system. (Boseley 2014)

Only after the WHO announcement, the international community began to take the epidemic seriously. We can see that as the situation crept toward postnormalcy, the declaration that it was a local epidemic, that everything was under control, that nothing could go wrong, generated a postnormal lag. The perception was only altered when the geometric proportion of the epidemic was fully realized and it had crept toward a growth stage. This example illustrates a key point: the management of a potential postnormal



**Figure 3.** The intelligence cycle.

situation, based as it often is on postnormal lag, can also promote postnormal creep and take the situation toward full-blown postnormality.

Given that postnormal phenomenon is related to vincible and invincible ignorances, we must concede that postnormalcy is also a product of how we approach, examine, or analyze the interconnected and complex problems we face. In other words, when we assume that standard (normal) scientific or technological approach will suffice to understand postnormal phenomenon, or in circumstances where we take for granted that we already know what we need to know, we may be actually increasing postnormal creep. A truly earnest effort to deactivate the postnormal potential of a situation will require an honest enquiry into the implicit, unsaid, and unquestioned assumptions of our deep motivations, which requires a profound examination of our own reasons, assumptions, and values. At the outset, we will have to abandon the assumption of management and control. Once a postnormal situation has ignited and proceeded to its full potential, it cannot be managed or controlled. At that point, the best we can hope for is to navigate our way out of postnormality. Of course, being able to anticipate would really make a difference.

What does all this mean for intelligence as it is gathered, analyzed, and conducted nowadays?

## Normal Intelligence

The traditional process for producing intelligence has two main variations. There are scholars like Berkowitz and Goodman who present the process as a cycle with four stages (Berkowitz and Goodman 1989), whereas others, such as Gill and Pythian (2013, 21–42), see it as a five-stage cycle. Here, we will settle for a four-stage cycle because of its simplicity and clarity—as presented in Figure 3. As it is a cycle, it is not easy to decide where the process actually begins, but it is commonly assumed that the initial push is given by setting the objectives that the intelligence services have to fulfill. This is a normative stage, more political than technical, and this is why it is widely accepted that the responsibility to establish priorities belongs to the government. Of course, analysts have to provide assessments to the politicians so they can make sound judgments and decisions based on evidence; the final decision has to reflect the main political directives that inform the principal policies of the state.

Once the objectives are established, the services can start to gather information. The main function of intelligence services in the past was to protect their own secrets and to uncover the secrets of others—driven by the axiom “information is power.” However, intelligence services soon discovered that abundance of information is problematic—as it “kills information”—and that tactics to deceive and misinform also undermines the “information is power” premise. But, if all you can do is to gather raw data in a world that is growing complex, chaotic, contradictory, and uncertain and one that it is changing at an accelerated pace, then your information is out of date almost as soon as you have gathered it. Actually, two elements have made this question even more critical: first, the number of actors included within intelligence communities has grown substantially, which has increased the quantity and variety of inputs demanding a rise in capacity for processing and, second, new technologies have not only augmented our capacity to process inputs but, more importantly, they have also boosted the amount of data that can be

collected to the point that, without such technologies, it would be impossible for the intelligence services to fulfill their task. So, intelligence is moving toward a context in which information is always in a state of flux, and the primary aim is to distinguish a signal, however weak, among a sea of noise. In the best-case scenario, valuable information can provide useful insights for a while, but as the situation changes rapidly, it can become useless quickly and seldom provides a holistic picture of what is actually happening. For intelligence services to be able to keep up in such an accelerated climate, they have no choice but to become more and more dependent on newer technologies, which have been proven to be valuable, albeit imperfect, tools. However, and despite the promises of big and bulk data, information by itself is not enough; a further stage in the analysis cycle has to be incorporated.

This is the stage where intelligence services provide real input—the added value of intelligence generation. Here, intelligence services have to make sense of what might be occurring to generate knowledge, explain what is going on, and most importantly, anticipate what can and might occur. Ideally, intelligence should not only be able to describe a given event, but also to justify why it unfolds in a particular way. Knowing why and how a situation may develop are the key elements for informing and shaping policy to properly address an event or looming crisis. Yet, the pressure to make urgent decisions when information is scarce, when policies are not clear and stakes are high, often leads to inadequate intelligence generation. The case of the famous “dossier,” provided by British intelligence and used by the former Prime Minister Tony Blair to involve Britain in the invasion of Iraq comes immediately to mind.

The final stage in the cycle is the diffusion of results. Intelligence is only as good as it is explained to, and can be used by, potential users. What to tell and how to tell is a fundamental activity of any intelligent service. It is not only a matter of what to say to the general audience, but also a question of what to offer to the politicians—their clients. Most of the time,

political decision makers just want an assessment of what to do next. This is a short-sighted perspective that forces intelligence services to offer a watered-down version of the intelligence they have acquired, evaporating the complexity and interconnectedness of the situation.

However, the most important feature of the cycle is precisely that it is a cycle. So it is not important where you begin. What is important is to complete the cycle. It is possible to start by collecting information on something that was initially deemed to be not very significant. But as the information gathering unfolds, signals arise that suggest that it may be more significant than was originally estimated. This may trigger a double effect: the need to reassess the prior goals as well as to analyze the emerging signals to produce some early intelligence. That, in turn, may generate the requirement to produce a first report that will also be used to feed in the process of evaluating the necessity of including the new subject among the list of intelligence objectives.

The circular structure provides some reassurance that you will be able to generate good intelligence regardless of your starting point. The problem is that the whole cycle is rooted in complexity in an environment of accelerating change. The cycle is spinning at much greater rates than in the past with two consequences. First, the obvious, it forces intelligence services to work faster and under more pressure—which also means that probability of getting things seriously wrong increases. Second, complexity and accelerating change suggests that the cycle is coming under some kind of postnormal pressure. So the conventional methods of generating intelligence become increasingly less effective. This is hardly news for anyone in the field. During the last decade, intelligence scholars have tried to propose alternative models: Clark proposed that the cyclical analysis should be transformed into a network approach (Clark 2004). Wirtz, however, suggested the use of intelligence itself to reduce (or eliminate) uncertainty (Wirtz 2009, 73–86). Pythian and Richards have devoted considerable effort to reassessing the real value of the cycle as an intellectual and

analytical activity (Phythian 2013 and Richards 2010). Others have argued that traditional approaches diminish capacity to foresee events beyond very short terms and thus there is an urgent need to develop greater anticipatory capacities, such as Serra's proposal for a "proactive intelligence model" (Serra 2008, 664–73) and Kuosa's "multi-approach process," which emphasizes the need for greater emphasis on reliability within the intelligence gathering and analysis process (Kuosa 2011, 458–67). Among many within the sector, the general conclusion is that intelligence work now requires a totally new mode of operation. As Javorsek and Schwitz point out, models "for this transformation [are] available from fields as diverse as biology, economics, sociology, and physics" (Javorsek and Schwitz 2014, 639–53). Others, namely, Rathmel, argue that intelligence agencies should embrace a more "postmodern" approach, which is to say that more "reflexive practices" are needed to meet the demands of a world in flux (Rathmel 2002, 87–104).

Many recent intelligence failures are a product of postnormality. For example, Western intelligence services failed to predict the Russian invasion of Crimea because of the speed with which the Russian military moved; the whole invasion was over within a week while the U.S. intelligence community was still assessing the probability of an invasion and nudging toward a conclusion that an invasion was unlikely. The rise, advance, and spread of Daesh (the so-called Islamic State of Iraq and Syria, also known as ISIS) was systematically underestimated because intelligence services failed to see that Daesh operated as a complex network with positive feedback loops: it crept rapidly to a fully blown postnormal burst. Even its military and operational capabilities were underestimated and intelligence services were caught off guard when Daesh defeated Kurdish Peshmerga forces and then moved on to persecute the Yazidi minority. It is not just the speed but also the scale of a postnormal phenomenon that foxes the intelligence services. Consider how unprepared Europe was to cope with both the speed and the scale of the flow of the refugees from Syrian and other war-torn states. In

PNT, a tickle can rapidly become a flood, and a local event can acquire global proportions overnight. Both complexity and accelerating change make it difficult for analysts to form a clear, coherent picture; as Ephraim Kam notes, they keep "working along traditional lines" (Kam 2005, 21–28). Traditional approach also induces group-think leading to watering down of complexity and the adaptation of complex, ambiguous intelligence to the dominant paradigm. The contradictions in the adversary's intentions are often overlooked and his intentions are either seen in simplistic terms (e.g., he is a radical therefore he must be up to no good), or based on the ideology or belief of the analyst and his culture and society. The conventional approach also undermines imagination: the intelligence services cannot envision how a particular emerging issue or a scenario may unfold in truly chaotic postnormal proportions.

Although the intelligence cycle still works in certain situations, its utility is clearly diminishing. The past does not provide us with much guidance either, even though Stephen Marrin suggests that intelligence failures could be prevented by learning historic lessons. But his recommended reforms could go some way to improve the quality of intelligence (Marrin 2004, 655–72). Marrin suggests that intelligence agencies should seek "dissenting opinions" as the same ambiguous intelligence can be interpreted from a number of different perspectives; "alternative analysis" should be sought as intelligence of "great importance or complexity" is "ill-served by a single analytical judgment or estimate," and the institutions of Devil's advocates should be established in every agency "to test the soundness of analytical reasoning and conclusions." In PNT, quality emerges from variety: a more coherent picture is established when an emerging issue is examined from a variety of different perspectives and a diversity of opinions and judgments are brought into play. Complex situations can only be understood by complex means (this is called law of requisite variety): in other words, intelligence services need to move away from monologues and toward polylogue.

But beyond "the publishing of dissenting opinions in finished intelligence products, alternative formats, and methodologies

for intelligence products,” to use Marrin’s words, intelligence requires a new theoretical framework.

## Postnormal Intelligence

What are the implications of the fact that the intelligence cycle is spinning faster and faster under the impact of accelerated change? The interconnectedness of the present world, as we have noted, boosts complexity and chaotic behavior; but it also enhances the acceleration in the change processes. Therefore, the more contradictory, complex, chaotic, and interconnected a situation is, the more it will accelerate its change, which, in turn, will increase its complexity and chaos and create positive feedback leading to the collapse of the system. This is precisely why we have argued that an important way to deal with postnormal situations is to avoid positive feedback or, if it has already started, to try and disable it. Yet, it is quite evident that most intelligence services fail to see, address, or deal with these kinds of postnormal events. Let us return to the example of Daesh. There was no Daesh in 2012. Yet it did not appear from nowhere; there were numerous signals and clues going back several years that indicated that something significant was happening in Iraq and Syria. In 2003, several extremist Sunni groups came together to form the Mujahideen Shura Council—initiating a postnormal creep that led to the April 2013 declaration of the “Islamic State of Iraq and the Levant.” In between, we had the “Islamic State of Iraq,” with significant extremist presence in Al Anbar, Nineveh, Kirkuk, and the Syrian governorates of Ar-Raqqah, Idlib, Deir ez-Zor, and Aleppo, after the extremists entered the Syrian civil war. The reputation for extreme violence was established way back in 2008. Thus, the seeds for the evolution of Daesh had been laid sometime before it emerged as a full-blown “state.” When the Syrian Uprising started, it became a sensitive issue for many intelligence agencies because of the balances and connections involved. Unlike Libya, it was not possible for Western powers to intervene openly (despite the abundant examples of war crimes) because Russia, Iran, and, up to a

point, China supported (and keep doing so) the regime of President Bashar al-Assad. Consequently, the only available option was to aid the rebels, and so, Qatar, Saudi Arabia, Turkey, and the United States began to arm them. Yet, the rebels were (are) very heterogeneous groups: originally they all assembled under the Free Syrian Army flag. Yet, due to the fact that some of the factions were connected to al-Qaeda (like al-Nusra) and had Islamist agendas, the Free Syrian Army splintered. The situation became complex with various groups fighting each other as well as the Syrian army. The dissension within various groups actually boosted the support for Daesh: it was able to accumulate vast economic resources through donations—sent both by digital means and by the traditional *hawala* system that transfers money through selected and trusted individuals—from Saudi Arabia and the Gulf, and acquire weapons from its allies. It was able to recruit young Jihads by going directly to them via the Internet and YouTube. Within months, Daesh became the enemy to beat. Even Syria, Russia, and Iran, the former enemies of the West, have joined—uneasily—Western forces to defeat Daesh. The rise of Daesh provides us with a good illustration of how poor initial handling (with little effort to understand the complexity involved) and too much ignorance (vincible and invincible), generated the perfect conditions for a postnormal creep that eventually led to a postnormal burst that could not be “managed.” The West became impotent in face of atrocities committed by Daesh, the Assad regime, and the Iranian militia. With the open involvement of Russia, the “Syrian situation” turned into gridlock. According to the United Nations, over 250,000 have been killed so far, and countless have been wounded, maimed, and made homeless (United Nations Office for the Coordination of Humanitarian Affairs [UNOCHA] 2016).

What lessons can be learned from the Daesh example? First, the Daesh experience suggests that the time scale is critical in the “setting the objectives” stage: the more focused on the short term, the more contradictions it will generate. In other words, the “normal” handling of

Daesh greatly contributed to its consolidation and expansion. The main concern of intelligence services nowadays is to discover when and where will the next attack happen. Of course, this also implies uncovering who will carry it out, how will it be done and, up to a point, why it will be done. These are important tasks from an urgency point of view; miscalculation could imply serious loss of life; and, some intelligence services, such as the British, have been rather successful in this endeavor. Nevertheless, “the when and where” sets the overall priority and tends to promote a shorter term approach, which mistakes the urgent for the vitally important. It hampers the adoption of a more holistic and longer term perspective that a complex, potentially chaotic, situation demands. Many intelligence failures regarding Daesh can be pinned on this short-term perspective.

Second, Western intervention in the Middle East has been traditionally based on picking the friendly and receptive pro-Western sides, which it is assumed, is easier to manage and control. This is a rather myopic and linear way to deal with postnormal times and situations. The assumption here is that if we are able to reach the right lever, we will be able to pull it and obtain the desired result. But, in a complex network, either there are no levers or too many to pull! Moreover, it is deeply naïve to assume that a complex system can be “managed” because even if it seems that the system is responding to our initial manipulation, we may just be triggering other strange attractors, sensitive to initial conditions, that reconcile contradictory trends and effects, and thus usher in a full-blown, chaotic postnormal burst. The strange attractor in post-Saddam Iraq was Nouri al-Malik, who served as Prime Minister from 2006 to 2014 and Vice President from 2014 to 2015. He was carefully chosen and implanted by Western powers on the assumption that he was their man, someone they could do business with and control and manage. The other assumption was that he belonged to the Shia community who were in majority; in fact, the Sunnis constitute around 60 percent of Iraq’s population. Al-Malik’s profound distrust of the Sunnis, bordering on phobia, generated

resentment among many Sunnis groups. The contradictory demands of the diverse and complex Sunni and Shia communities could not be reconciled, let alone managed, and governing Iraq became impossible. The state became unstable. Marginalized Sunni groups took up arms against the government resulting in upheaval. The state fragmented into numerous warring groups with contradictory goals, functioning as networks of anger and resentment. Eventually, contradictions and complexity merged together to produce the inevitable chaos.

Third, in general the ultimate goal for Western powers and their intelligence services is to return to the status quo (or something close enough). A corollary of this objective is the sooner things are resolved the better; the longer you allow something to unfold, the harder it will be to reverse it (something that it is essentially correct). But this usually leads to acting before understanding or knowing all the variables in a complex network. Often the dominant variables that are easily spotted are seen as the main drivers, whereas the dormant variable and trends, which may be more significant in the long term, are overlooked. This is why, different agencies of the same country may end up supporting contending factions in the field: a good example is the Pentagon-backed Syrian Democratic Forces (SDF) moving in from Kurdish-controlled areas to face CIA-armed Fursan al Haq militia from Marea, a city north of Aleppo. After a pitched battle, SDF repelled Fursan al Haq from Marea.

In short, intervening in a postnormal situation without proper knowledge of its internal complexity enhances contradictions, accelerates creep, and usually leads to complete and utter chaos. Under postnormal conditions, it is much better to comprehend why the situation has changed, what are the forces at work, what could/would be the potential outcome, and, finally, what pros and cons that new stage may pose. Thus, instead of trying to go back to a previous unstable situation (which produced the initial change in the first place), it would be better to imagine alternative futures, anticipate different outcomes generated by the transformation, and work in the long term to diffuse

undesirable developments and promote preferable and desirable futures. If nothing else, this would reduce the potential of chaos emerging in the future.

However, it is hard to deny that contradictory forces seem to plague “normal” intelligence everywhere. The most obvious example is the tension between openness and secrecy. Given the complex nature of the issues intelligence services deal with, the need to tap external resources becomes paramount. However, for traditional intelligence to rely on an external source is, by definition, seen as a sign of weakness. Moreover, effective exchange with other organizations and people requires intelligence services to build trust, and the best way to build trust is to share—that is, to give and take. But when the notion of secrecy is an absolute axiom, this is not an easy thing to do. To overcome this paradox, an increasing number of intelligence scholars are looking for approaches that could reconcile openness with security. Lahneman, for example, suggests establishing trusted information networks (Lahneman 2007, 1–17; 2008). Arcos and Antón have adopted the idea of “extended peer communities” (Arcos and Antón 2010, 11–39), which is central to the postnormal science discourse and was first suggested by Funtowicz and Ravetz. Treverton has developed a taxonomy of external collaborators (Treverton 2009). All of this amounts to a tacit acceptance of the fact that intelligence services are struggling with complex, interconnected, postnormal issues that require external support and a diverse range of perspectives for sense making.

The tension between security and privacy has now become irreconcilable. The *zeitgeist* of our times is fear. Despite all our progress and achievements, most people think that our existence is still very fragile. The more we have, the more fearful we become. This dread leads to a longing for more security: for ourselves, for our possessions, and, mostly, for our lifestyles. The craving for security is often used to undermine the cherished notion of privacy. Since 9/11, we have been told that constant surveillance and the persistent intrusion into our communications is absolutely necessary for our own security. We are further told there is no alternative: either we consent to the

continuous invasion of our privacy or face the worst of consequences. Nevertheless, there is now overwhelming evidence that both approaches are not working. The point is that complex issues are often presented as binary opposites, and this type of thinking opens the way for postnormal creep to establish itself.

Intelligence-related communication is becoming more chaotic in the sense that it is becoming harder to control its effect and its impact. Information and communication technologies have drastically changed how messages are sent and, even more importantly, how they are received. A single message can now have global reverberations. Perhaps the first event designed to have a global impact was 9/11. Simply by delaying the second crash by seventeen minutes, it became possible for the collision to be broadcast live to millions of people all over the world. By the time both buildings collapsed, almost every television station in the world was covering the event. A minor time difference gave the attack a totally different perspective, transforming it into a set of iconic images that are known around the world. That was a clear signal that technology had changed the communication game. It is no longer a unidirectional emission from one sender to one or many receivers. Now there are multiple senders and multiple receivers engaging in a permanent interchange of information that changes and evolves constantly. Although intelligence services have paid considerable attention to the surveillance potential of the new channels of communication, they have largely failed to appreciate their logic, function, and postnormal potential.

Consider the case of the New York Police Department (NYPD): the NYPD assumed that Twitter is nothing more than one-way hotline. The Department opened a Twitter account in an attempt to build bridges between the force and the community (Tracy 2014). Yet, instead of the expected positive pictures of smiling policemen and citizens in friendly embrace, people began to post images of police misconduct and brutality. Instead of promoting trust and closeness, the account amplified controversial cases and further tarnished the reputation of NYPD. In contrast, the Dutch services



interconnections of the Afghan situation and the problems associated with a political settlement. To solve the intractable issues of violence and governance of Afghanistan, and produce a negotiated permanent settlement, we need to consider all the conflicting actors and their contradictory demands, the interactions between them, and the social and political problems that have emerged. The bottom line here is that we tend to be distressed, if not directly threatened, by complexity because the more we understand the complexity contained in any given issue, the more we realize that we will not be able to control the issue. And this is precisely why we need to grasp the complexity we encounter in PNT. Unfortunately, General McChrystal, who was in charge of the allied forces at the time of this presentation, famously said, “When we understand that slide, we’ll have won the war” (Rogers 2010). Why is this pronouncement unfortunate? The map is never the territory, and McChrystal is still using binary framings to mask his level of ignorance and uncertainty. Some wars, as it were, are simply unwinnable, and, as is said in games of strategy and chance, the best move is not to play.

The only way of navigating this level of complexity is to begin by examining the state of our ignorances. The more unaware and unconscious we are about what we do not know about an issue or a given situation, the more likely it will creep into a full postnormal situation. Thus, in dealing with a phenomenon whose behavior seems uncertain or unpredictable, it is important to

1. begin with the assumption that the situation is complex and interconnected and the three varieties of ignorance are embedded in the phenomenon;
2. consider that the information may be changing rapidly and the current data may be out of date, inadequate, or just plainly false and may not be enough to describe or explain what is happening (plain ignorance);
3. if the phenomenon continues to appear chaotic and contradictory, examine the network and its interconnections,

attempt to reduce positive feedback, look for alternative approaches, and identify the presence of postnormal creep and explore its futures dimensions (vincible ignorance); and

4. if the phenomenon has reached a crisis point, assume it has gone postnormal and challenge the premises of your paradigm, question your basic assumptions, re-examine your values—by doing so, it may be possible to consider radically alternative perspectives and approaches that may shed additional light on the direction of research (invincible ignorance).

There may be some members of intelligence services who would argue that what there is nothing in what we are exposing that cannot be handled by the traditional intelligence approach. A closer look at one of the main concepts in intelligence, the adversary, may shed some light on how things are really changing.

## Postnormal Adversaries

Classical “normal” intelligence is built around the idea that every intelligence service has adversaries who usually act by a pattern of symmetrical behavior. Model adversaries are supposed to behave as “true adversaries,” which tended to be other nation states. But contemporary adversaries do not behave like model adversaries. The emergence of media savvy Jihad networks, “lone wolf” potential terrorists inspired by fanatical preachers on YouTube, gun-toting right-wing extremists, and mentally disturbed suicide bombers do not follow the criteria of symmetry. Organized criminals, identity thieves, and malevolent hackers do not act as true adversaries, and they move in a complex network that changes and develops swiftly. Yet, this has not diminished the importance of the adversary as a core notion in intelligence discourse. Many analysts still think that adversaries like Daesh, despite its specific peculiarities, can be managed with the conventional protocols or that it will simply take more time to get into their mindsets

and apply the usual processes. But in PNT, the adversary can be different things at different times, changing, mutating, moving at great speed and posing threats, and infecting society like the Ebola virus. So here then is an example of a postnormal threat that no one has seen: jellyfish.

Consider the following facts:

- In January 2006, during its maiden trip, the American nuclear powered aircraft carrier USS Ronald Reagan, made a port call in Moreton Bay, near Brisbane, Australia. While at port, a massive bloom of jellyfish resulted in thousands of them being sucked into the intake of the ship and forced the then world's most advanced aircraft carrier to shutdown some of its power systems to prevent a total incapacitation of the vessel. The aircraft carrier had to shorten its stop and limped off to escape the formidable adversary that is jellyfish (Sweeney 2013). Two years before, the cruise ship Pacific Sky also got its engine clogged with jellyfish, trapping the vessel at the Brisbane port (ABC 2004).
- Jellyfish blooms are now occurring everywhere, including in extremely sensitive areas like the Persian Gulf where they represent a serious threat—and an adversary to be reckoned with (Hilburn 2007, 30–32).
- Jellyfish have targeted other strategic infrastructures such as power stations. Since 1999, plants in the Philippines, Israel, Scotland, Japan, Florida, California, and Sweden have suffered shutdowns because of jellyfish blooms, affecting millions of citizens. These stations are perfect places for jellyfish and, as changes in oceans (temperature and acidity increases with less natural predators) are helping jellyfish to bloom more and more, it is highly likely that the problem will grow (Gershwin 2013).
- Jellyfish are also harming fishing industries. In Japan, fishermen regularly encounter problems caused by Nomura giant jellyfish, such as broken nets and

capsized boats. In Northern Ireland, the jellyfish decimated a salmon farm, killing no less than 100,000 salmon (O'Rourke 2013).

Given the threats posed by jellyfish, it can be argued that they are worthy of serious attention from intelligence services. But then, how are intelligence services supposed to deal with jellyfish? It is not the kind of adversary that can be analyzed with traditional techniques. The jellyfish demand a postnormal approach. The 2016 Rio de Janeiro Olympic games provide a good example of what we are presenting here. At some point, Zika became the greatest concern for the security and intelligence agencies, even topping terrorism. Of course, failing to recognize the postnormal potential of the virus impeded the development of a truly anticipatory strategy. Twenty, or even ten years ago, a virus would be of no concern for “normal” intelligence; but, in a postnormal context, these are the kind of phenomena that need the most attention.

Indeed, many issues that were conventionally seen as outside the purview are now becoming central to intelligence work. Consider the Black Lives Matter (BLM) movement, which would hardly qualify as an issue of be followed or analyzed from a normal intelligence perspective. Within the normal framework, the shooting of black people by the police, the subsequent riots, and even the retaliatory shooting of policemen by black snipers are mostly a law enforcement issue. But consider how the 3Cs of PNT came together to shape the movement. The blatant contradiction in the aspiration of equality and the treatment of the black people in America; the contradiction in the justice system, which is supposed to be “blind” yet acts consistently against and to the detriment of African Americans; the “law enforcers” who see the law as a license to shoot at will; the inherent complexity of a society with intractable ethnic, social, economic, political, and religious differences that cannot be resolved with simplistic solutions; the chaotic behavior demonstrated by huge, swift, and raged reaction to police actions; the globalization of a local issue turned into an international

movement; and the fact that President Obama had to “insist that we are not as divided as we seem” are all a clear indication that the American society is fragmented, with the potential—however remote it may seem to some—of social collapse. Given the dangers involved, can intelligence services afford not to do anything about it? Anyway, what can they do in such a context? The normal way of proceeding would be to identify the leaders of the BLM movement, put them under surveillance, find evidence of their wrong doing, and arrest them—hoping that the movement itself would evaporate. However, what we already know is that networks do not need leaders. Moreover, removing a handful of leaders does not resolve the genuine grievances of the members of the network. The network continues unabated. Chaotic phenomena, such as riots, do not need coordination, steering, or supervision; they simply burst and unfold organically. So to deal with the potential future postnormal consequences, one has to begin by resolving the contradictions—which, by the way, cannot be resolved, but only transcended.

## Conclusions

Intelligence services clearly have to deal increasingly with postnormal situations. However, their traditional *modus operandi* is not really suited for the challenges and threats of PNT. The normal intelligence cycle is now revolving at an accelerated pace making it difficult, if not impossible, for intelligence services to cope—that is why we are seeing increasing number of “intelligence failures,” that frequently involve numerous casualties. The attacks in France against Charlie Hebdo offices, Bataclan concert hall, and in Nice are a case in point. From the perspective of normal intelligence, they can be seen as a logistics question as the terrorists were known and the services had information on them; within this perspective, the problem is how to keep surveillance on all possible suspects and, also, how to process all the information. France’s response has been to declare emergency, increase surveillance, and devote more resources to intelligence work. But this

conventional approach can only lead to an escalation that is hardly sustainable and, ultimately, implies turning the country into a police state. The Nice attack, when a suicidal driver ran into the crowd celebrating Bastille Day, proved that a merely incremental approach is not the best answer and exposed the vulnerabilities in the security system. It is highly doubtful that the driver would have qualified for conventional intelligence tailing as he was motivated by personal rather than ideological or religious reasons. That is to say, it would have been very hard for a normal intelligence service to anticipate such an attack. From a postnormal standpoint, we have to acknowledge that the Nice attack was a product of complex reasons and motivations; simply looking for a single motivation does not work anymore. We also have to consider that the police activity, as well as increased surveillance and harassment of “potential suspects” may have increased postnormal creep and provided further motives and/or legitimation for potential terrorists. There is yet another question to consider: do such acts provide stimulus for mentally disturbed people? We also need to understand the mechanisms that generate positive feedback: does twenty-four-hour media coverage and social media enhance the postnormal potential of such incidents? A deeper analysis of the complexity involved in such attacks is clearly needed to improve security in the long term.

The confluence of complexity, chaos, contradictions, uncertainty, and ignorance has placed intelligence services in a very unsustainable position. The more intelligence services are pressed to generate intelligence quickly, the more myopic their analysis of complex and interconnected situations, the more likely they are likely to promote, albeit inadvertently, postnormal creeps and provoke postnormal lags—leading to systematic failures.

Intelligence services need to realize that better intelligence can only be generated with more time, and decision makers need to appreciate that the one thing that timely advice requires is, precisely, time. Swift intelligence, at best, only works in the short term, and quite frequently, it provokes undesired negative

effects in the medium- and long-term futures. However, giving intelligence services more time does not solve the whole problem. There is also a need for awareness that uncertainty and ignorance cannot be discarded or managed, and that it will become increasingly impossible to exert any effective control over emerging issues that, in PNT, can only be navigated or, at best, anticipated. Politicians, decision makers, citizens as well as intelligence agencies will all have to come to terms with this postnormal reality.

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