Relationship between Safety and Security within the Context of Risk and Intentionality

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Abstract

We now live in an era where various interconnected forms of technological and social risks help shape our lives. Risk can be understood as a challenge to human safety and security. Until recently, risk has been a keyword of safety sciences, which highlight safety and aim at designing more reliable and failure-proof technologies. Thus, risk has been treated as relatively simple, measurable, predictable and manageable phenomenon. Security studies have challenged this technological interpretation of risk, especially because security related hazards may lead to grave social consequences, such as outbreaks of conflicts and wars. Security risks are, therefore, more consequential to human survival, and they are more complex and reflexive than technological risks. This article traces the lineage of both disciplines and examines the concept of intentionality, which has been treated as the main dividing feature present in social but not in technical risks. For an illustration of intentionality, the article draws on an example of biological hazards arising from the deployment of chemical and biological weapons in the Iraq-Iran war. In the end, the article draws upon the complexities of the COVID-19 pandemic, and mentioning Ulrich Beck, it relativizes the concept of intentionality and concludes that even natural and technical risks are being impacted by human judgment, which is in itself rife with imperfections and unintended consequences.

Introduction

The world today is made up of intricately linked societies which make us more vulnerable to different natural and social risks and threats that leave an imprint on our everyday lives. As witnessed in the Great East Japan Earthquake, or COVID-19 pandemic, calamities arising far away may deeply affect other parts of the globe, and vicinity no longer plays as important role as before. Such calamities change our lives in ways we have seldom imagined, and they redefine the words and terminologies which have been used to describe them. Among the terminologies we deploy to refer to these calamities are words “risk” and “threat”. English language users tend to discriminate between some occurrences which they call “risks”, and others which they call “threats” or “dangers”. For example, there are “risks” of an extraordinary hurricane such as “Katrina” striking the Eastern Coast of the

United States, or "risks" of a major volcanic eruption after a strong earthquake, but there are "dangers" of a terrorist attack at a major social event, or "threats" of exploitation of weaknesses in network systems by hackers.

This article attempts to review the use of the terminologies of risk and threat especially from the perspective of security studies. Security as a discipline has benefited from a recent deluge of technical "risk" approaches among its expert communities. Conflicts such as Iraq war, Afghan war or war in Syria have been conceived as surgical "risk management" operations, and the rise of the Department of Homeland Security in the US, or special forces commands and teams in the UK, Australia, Canada, Germany, Japan and other countries voice the importance of safeguarding the home front against the "risks" of terrorism, nuclear accidents, industrial disasters and natural calamities. However, it is the argument of this article, that security has not been a passive recipient of technological knowledge from safety sciences, and that it has a share to contribute to the "risk discourse".

Failure, Risk and Safety Sciences

Risk of failure is a central and defining concept of safety sciences, the focus of which is to develop and design more reliable and failure-proof systems (Boholm et al. 2016, 330, Aven 2020, 63). Within safety sciences, risk is considered as fairly simple, predictable, and therefore, assessable and manageable phenomenon. Seeking safety means locating risk through isolation of causes of errors or malfunctions of equipment at a workplace, and designing solutions to prevent damage from them. In past, it was the task of the factory worker to service such equipment. Not all accidents had hidden causes, and not all causes were easy to address. Some disasters, such as natural catastrophes or large-scale industrial accidents, may have known causes, but still they may be difficult to eliminate. In such cases, it is the role of safety experts and technicians to design emergency manuals and training seminars to prevent and mitigate risks and damages from such disasters (Ale 2009, 37). Information about such risks is usually kept within the same workplace, and therefore, risks do not get communicated widely. Together with industrialization and mechanization, factory lines became more complicated and needed more servicing. Demand for more sophisticated forms of risk management paved the way to two developments.

First development was professionalization of technical staff and provision for better communication of risk and safety measures. Ideas about prevention of accidents were increasingly accumulated and communicated through engineering and scientific journals.

The underlying assumption behind such information was belief that accidents could be scientifically examined and that there was a moral duty of technicians and engineers to find measures to prevent such accidents in the future. The thought was reflected in the establishment of inspectorates, investigation commissions, standard commissions and other public or private bodies, which were delegated with powers to investigate accidents, and design safety standards (Dekker 2019, 195). Among the first journals, which devoted their agenda to investigation of risk was *Accident analysis & prevention*, established in 1969 with a focus on road safety, and *Journal of Safety Research*, also established in 1969, which concentrated on occupational safety. *Safety Science*, a foundational journal in risk analysis and management, was established in 1976 under the name *Journal of Occupational Accidents* and was renamed only in 1991, and in its first years it focused mostly on fire and explosion, personal protective equipment, machinery safety, classical accidents, and methodological and organisational issues (Hale 2014, 65).

Second development was systematization of knowledge and formation of the profession of the risk manager as an oversight job within companies during and after 1970s. This coincided with the establishment of risk education programs at universities, and emergence of concerns about organizational decision-making approaches to risk. Technical risk control at the end point of the production line was no longer sufficient. Frequency and severity of industrial accidents proliferated, and businesses were rarely able to purchase insurance policies to cover all variety of risks. Importance of "risk manager" roles received wide attention within companies, and decision making tended to concentrate on the executive manager with the advice by his expert risk manager.

Threat, Risk and Security Studies

Security studies have preferred the terminology of "threat" and "security", to capture the dimension of risk which is more complex and more consequential to survival. Risk has been at the margins of the debates about security (Kessler 2010, 17). As a discipline, security studies as military sciences have an old history. However, the true origin of security studies is in the interwar and post-WWII era, when the discipline emancipated itself from the narrow concern with war and the military, and provided an agenda for discussion by ordinary civilians and laymen (Buzan and Hansen 2009, 1). National security was discussed in the Congress, the media, academic meetings, think tanks, and plethora of public gatherings. Security studies also shifted their focus away from war into a broader set of political

and social issues, which in the age of total war had more impact upon vulnerabilities of states. Series of academic journals started publishing on security issues such as *Survival*, *Journal of Conflict Resolution* (both since 1957), and *International Security* (since 1976), which witnessed the burgeoning of interest in security studies. New themes, new approaches and new methodologies were adopted following two major developments: focus on modernization, and turn towards behaviouralism.

First development demonstrated confidence in modernization and progress, which were at the core of American intellectual life. These ideas were associated with theories of Edward Shills, Walter Rostow, Talcott Parsons, or Gabriel Almond, and were situated in the centre of the ideological battleground against the Marxist-Leninist world-view at the height of the Cold War (Gilman 2003, Alexander 2013, Latham 2000). In security studies, the intellectual atmosphere of the modernization school was filtered into ideas associated with security alliances, defence of the "Free World", containment of the communist bloc, and prevention of the domino-like Marxist revolution in the Third World. Names such as George Kennan, George Marshall, John Foster Dulles, or Averell Harriman come readily to mind, and within the academia, they were voiced by Hans Morgenthau, Louis Halle, Herbert Feis, Raymond Aron, Henry Kissinger, Samuel Huntington and many others (Hogan 1995). One should not forget, that a similar set of ideas also reflected the transformation of the United States into a "national security state", and encouraged active interventionism abroad (Hogan 2000, Yergin 1977).

Second development was the turn to natural sciences and behavioural methodologies. Many intellectuals were excited about mathematics and exact sciences such as econometrics or engineering. This trend was popularized with use of statistics, development of game theoretical modelling, and with introduction of systems analysis and operational research. In security studies, such approaches were coupled with the establishment of policy think-tanks and inclusion of universities within the circle of the Cold War military-industrial complex. The leading institution among these was RAND, a research corporation originally established by the initiative of Army Air Forces officers overseeing nuclear bombing during WWII. Research and expertise ranged from mathematics, engineering, aerodynamics, nuclear physics, machine computing and many other technical disciplines. The most consequential of the studies were possible scenarios for nuclear war and nuclear deterrence, and among their associates were names such as Herman Kahn, John von Neuman, Thomas Schelling, and Albert Wohlstetter (Abella 2008, Robin 2001, Jardini 2013).

Advancement of computation sciences, econometric methodologies, and adoption of

new business managerialism in public sector have retained strong impact upon policy decision-making. Such a trend has been reflected in inclusion of "risk analysis" and "risk management" approaches in military and policy planning, and it paved the way for the introduction of the concept of risk into the security sector, especially after the surge of global and domestic terrorisms after 9/11 and the war in Iraq and Afghanistan (Wagner 2010).

New Approaches in Security Studies

Within security studies, traditional approaches point at issues of military dangers as belonging to the sphere of "high politics". They are comprehensible only to the top national officials who can objectively and thoroughly investigate risks and threats derived from such dangers, and devise most rational courses of actions. However, rationalist approaches have relied on fallacious presumptions of objective power distribution and national interest aggregation, and they have provided little explanations about plethora of security issues which arose outside of the superpower Cold War framework. Traditionalist assumptions have been subjected to critical review from those who see human behaviour far more complex than a function of rational interest calculations of nation-states.

Emerging schools of thought in security studies dwell much deeper into "threats" and "dangers" in order to ask fundamental questions about their foundations and identity. Securitization theory focuses on security as an outcome of speech acts. Speech acts are rhetorical devices which can create threats and devise action (Buzan, Waever and de Wilde 1998). Contrary to the traditional realist concerns with objective threats, securitization theorists focus on how such threats are constructed through rhetorical acts and how meaning is constituted through them (Searle 1969). Securitization theory falls under the loose umbrella of critical security studies, together with many other diverse approaches, such as feminism, human security, or peace studies. The questions which securitization school asks about risks and threats penetrate discourses about human identity, and expand the concept of security into non-traditional areas, such as environment, health care, migration, crime, economics, or education.

Focusing on the subjective determination of threats, critical security studies have redefined the concept of risk. They refocused the attention from objectivist understandings of risk and threats as "something out there", such as determined terrorist fighters or Islamist fundamentalists, into subjectivist and interactional construction of dangers. Traditional realists might share their concerns about careful observation and analysis of subjec-

tive intentions of the adversary, but securitization and critical security studies focus more on the formation of identities and intentions within their home society or state, and on the intersubjective process of communication through which "enemy" is articulated, objectified, and securitized. They re-introduced the centrality of human factor into the concept of security. What is or is not securitized or secure, depends not on the existence of an objective threat, but rather how it is named, interpreted, and constructed through interactive processes. By focusing on the human factor, critical security studies bring back the debate about cultural and ethical basis of what security is.

The presence of intentionality, and thus of the human factor, is what has been considered the essential difference between safety sciences and security studies. Securitization and critical security studies, compounded by the rising complexity of our societies, have once again shifted the focus of attention within the discipline to intentionality of human agency.

Intentionality in Public Policy

As mentioned above, both safety sciences and security studies have witnessed theoretical developments after encountering new issues. The surge of fear after the 9/11 terrorist attacks, coupled with waves of unwelcome refugees and migrants, and recent COVID-19 pandemic have raised fears of people about the safety and security of their homelands. Old bureaucracies were revamped, and in their place rose institutions like Department of Homeland Security or Federal Emergency Management Agency in the US (Zack 2009, 88). Training practices of police were militarized, and militaries increased their presence on streets to control or suppress civil movements at home. But this does not mean the two disciplines could be easily merged together. Safety sciences still deal with risks that can be isolated and tested. Their purpose still concentrates on technical questions such as prevention of fires, machinery failures, traffic collisions, or organizational defects. Security studies, on the other hand, concentrate on more complicated risks, such as prevention of conflict and safeguarding of homeland against adversaries. The risks which security studies encounter are multifarious, complex, and interdependent. Despite the changes, thus, both disciplines remain critically divided on the presence or absence of intentionality.

What is intentionality? It is the defining characteristic of human consciousness. Intentionality comes from the Latin verb *intend*, which means to aim, or to stretch out. It is a ca-

pacity of mind to aim at, or to stretch out towards inner or outer objects, such as our inner mental images or outer things and people (Krueger 2019, ch. 37). There are two disciplines within philosophy of mind, which have delved deeply into the concept of intentionality. They are phenomenology, and philosophy of language (Crane 2009, ch. 28). Phenomenology considers intentionality to be central to human consciousness and it explains the concept of "aiming at" by referring to the mental processes such as phenomenological reduction or noesis-noematic structure of representation, which establish meaning (Gallagher 2012, 67). Philosophy of language, on the other hand, understands intentionality as representational structure of words. That is, the relationship between reference, the way how word refers to an object, and sense, a meaning which this kind of reference conveys to us (Frege 1980, Eli 1996, 18). In security studies, the Copenhagen school of securitization elaborates on Saussure's concept of relationship between signifier and signified, which is not dissimilar to the Frege's relationship of sense and reference (Huysmans 1998, 228).

Apart from its central role in philosophy of mind, intentionality has often been understood in terms set out by the theory of action. Theory of action assumes that human behaviour has mental causes called intentions. Therefore, intentions are reasons which can answer the question "why" about that behaviour (Anscombe 2000, 15). The concept of intentional explanations of action is closely compatible with behavioural understanding of causal explanations of action (Davidson 2001, 7). However, intentionalists refuse externalist and objectivist causal models of behavioralism in favour of internalist explanations based on reasons. Such an understanding is also much closer to practical reasoning which uses intentionality in order to seek for reasons that explain actions. This kind of linkage between actions and reasons has been widely adopted by social sciences, such as criminology, law, political science, psychology, sociology, education, cognitive science, linguistics, or communication studies.

Security studies give a lot of weight to intentional explanations of action, especially in relation to the friend-enemy frame of mind deeply entrenched in discourses about threat. The differentiation between friend and enemy is only possible on the basis of assessment of others' intentions, and therefore, on intentionality (Aradau and van Munster 2011, 108). All countries possess military capabilities and there is no objective way by which a country could separate the friend from the enemy only on the basis of their capabilities alone, without referring to other's intentions. A world where any kind of military capability is an existential threat is often associated with the Hobbesian world-view of eternal uncertainty and warfare of all against all. Hobbes argued against such a scenario, and devised a series of in-

struments to prevent it. One of them was, what he calls the "second law of nature," which means paying respect for the rights of others and entering into a covenant of trust (Hobbes 1998, 89). Such a covenant is only viable through promises and assurances, and therefore through pronouncements of intentions (Bourbeau 2015, ch. 2). Security is, therefore, in its essence, study of harmful intentions and capabilities of others.

Political psychology has enriched our understanding of the process of perceptions about others (Jervis 1976). Political psychologists assume that cognitive failures are the result of the friend-enemy differentiation, which is given in the first place (Yarhi-Milo 2014, 16). However, what sociological theories suggest is that such differentiation is not given (Bourbeau 2015, ch. 5). Sociologists claim that the "other" is constructed through naming, i.e. through the determination of the identity of enemy by engaging in speech-acts, such as calling the other a "virus," "plague" or "vermin". They focus on the role of identity, ethnicity, language and culture, and on the process of construction of reality through social representation, and thus intentional acts.

Apart from psychology and sociology, it is the study of systems theory and organizational decision making, which extended the concept of intentionality beyond the immediacy of human body into the area of communication and information processing. Karl Deutsch introduced basic phenomenological concepts into the study of governmental systems. He defined consciousness as "a collection of internal feedbacks of secondary messages. *Secondary messages* are messages about changes in the state of parts of the system, that is about primary messages. *Primary messages* are those that move through the system in consequence of its interaction with the outside world" (Deutsch 1966, 98, italics as in the original). This concept of feedback of secondary messages captures the logic both of Husserl's noesis -noemaic structure and of Frege's representation-sense relationship, that is, the mechanism of intentionality.

Deutsch attempts to explain how organizations operate. By emphasizing on the concepts such as consciousness, spirit, mind, value, meaning, and self-awareness, he allowed for subjectivity and autonomy of such systems. Safety sciences with their technical orientation rarely deal with subjectivity, even when they work with human factor. The next section will introduce examples in relation to the public health crises, which will try to elucidate on the role of intentionality in public policy stipulated by Deutsch.

Security, Risk and Intentionality

What is the significance of intentionality to security studies? In the line with Deutsch's analysis, security studies accommodate intentionality into their analyses of policy decision-making process. Any policy needs to be researched, drafted, decided, implemented, and evaluated. In organizational communication theories, this process is what intentionality is, as explained by Karl Deutsch. Security studies rely on rigorous analyses of policy processes of other countries to determine their intentions (or intentionality). This comprises first of all potential enemies, but also allies or third countries or non-state actors, in order to assess and determine security threats.

Let us examine such intentionality by drawing on an example of illegal use of the chemical and biological weapons in genocides. From the recent example of the COVID-19 pandemic, we can be reminded of the deadly impact of a virus outbreak which has left in 1 year almost 2.5 million people dead, and with 120 million people who have contracted the virus. This disease has been thought to have natural origins, and thus, it better fits into the technical concepts of "risk management" concerned with public health safety.

However, many military strategists since the dawn of modern warfare have argued for employment of viruses and chemicals in the object of warfare. Indeed, germs were often intentionally used for the purposes of "purification" and colonization of conquered lands. At the time of Spanish and Portuguese conquests in Latin America, exogenous diseases to which the populations had no immunity, such as smallpox, measles, or typhus, were introduced and decimated the indigenous populations by millions, eliminating about 95% of original inhabitants (Diamond 1999, 211, Hays 2006, 82). During the Revolutionary War of Independence from 1775, the British were accused of introducing smallpox as a weapon against the American revolutionaries (Fenn 2001, 132).

Germs and organic or inorganic substances had been found useful for the pursuit of military goals, and they soon found their way into weapons, and wars. However, their effectiveness proved to be two-sided. The more widespread were the casualties they delivered, the more such arms were condemned as immoral and inhuman. In 1925, Geneva Protocol to the Convention on Trade in Arms was signed which prohibited use in war of poisonous gases and bacteriological methods of warfare. Ever since then, countries were reluctant to use chemical and biological weapons on a large scale in war, even though there were many temptations. There were exceptions and some countries, like Germany and Japan in WWII conducted human experiments and used chemical and biological weapons in military op-

erations, but such countries were widely condemned in the aftermath of the war, and war crimes only stiffened the "taboo" around the use of such dreadful weapons (Yoshimi 2004, Tsuneishi 2005).

Development and stockpiling of weapons of mass destruction is a risky enterprise. Knowledge that an opponent is stockpiling weapons of mass destruction may be significantly destabilizing factor for regional security. In 1980s, there were multiple allegations that Iraq was developing nuclear, chemical and biological warheads. This awareness posed a vital security risk to the countries like Israel, Kuwait or Iran. But allegations that a country is stockpiling poisonous substances itself does not automatically result in a security threat, if a country can give assurances, generates trust, obeys agreements, respects international norms, and shows no intentions of their offensive use.

Once a country (illegally) develops and stockpiles chemical and biological weapons, its intentions are of utmost concern. Existence of such weapons is usually kept in high secrecy, and it is the traditional role of foreign countries' security and military intelligence agencies to discover them and keep watch on whether the government will not entertain the will to use such weapons. One country which was attracted to the prohibited weapons was Iraq in 1980s. Iraq signed and ratified the Geneva Protocol in 1931, but in 1970s it set the international commitments aside and embarked on nuclear, chemical and biological weapons development programs. Western countries had knowledge about the programs, and in some cases (especially France) provided the know-how and materials for their expansion. They also knew about incidents in the Iraq-Iran war, when masses of Iranian troops were gassed by Iraq on the battle front.

Iraqi appetite over the effectiveness of its chemical and biological weapons escalated, and in 1987, it embarked on a new mission. Iraq started to mass murder its own civilian population. In March 1987, Saddam Hussein appointed his cousin Ali Hassan al-Majid, the head of the ruthless Iraqi security service, in the position of viceroy of the North Bureau and gave him extraordinary powers. On 6 April, after calling all the residents of Kurdish villages "saboteurs", al-Majid declared "prohibited areas" and abolished their inhabitants' real and personal property. On 10 April, he prohibited the villagers' access to courts and suspended all their legal rights. On 15 April, people of Jafati and Shahrbazar reported that the government's artillery started shelling the valleys. Among the voices from the villages were reports that they didn't realize the shells "were chemical. The sound was not as loud as the ordinary shelling, and we smelled rotten apples and garlic." (interview in HRW 1993, ch 2 fn 17). The next day, the forces shelled the villages of Balisan and Sheikh Wasan leav-

ing hundreds dead, and hundreds more badly injured. Wounded villagers flocked to nearby villages and hospitals reporting blindness, which is known to be caused by mustard gas. The attacks continued till June and the military obliterated almost 703 villages from the map. On 20 June 1987 (directive SF/4008), al-Majid issued written orders to his forces to prohibit all travel and conduct random bombardments to kill the largest number of persons, and among the captured, execute those between ages of 15 and 70. The intentions of Iraqi leadership was to forcefully remove rural Kurdish population from mountains and villages into larger towns kept under governmental surveillance, and disable the infiltration of Iranian forces into Kurdistan. After the spring, Iraq concentrated on the battles in the southern front, but it returned to the decimation of its Kurdish rural areas again. In the spring of 1988, Saddam's regime grew emboldened by the results of the chemical and biological attacks in the previous year, and opened a full-blown military offensive with chemical and biological weapons against its population under the codename "Anfal" (Razoux 2015, 412).

Western countries kept track of the Iraqi genocide. Criticisms were raised by humanitarian agencies, but governments were slow to move forward because they considered revolutionary Iran even more hostile than Saddam's Iraq. The first occasion to punish Iraq for its atrocities came after Iraq invaded Kuwait in 1989. This resulted in the first Gulf War in early 1990, and Iraqi genocidal use of chemical and biological weapons was listed as one of the reasons for the western offensive and imposition of sanctions on the Saddam's defeated regime. However, Saddam managed to turn the defeat into a drive to solidify his power. He stuck to his chemical and biological weapons and repeated the reprisals to the Kurdish population in 1991. The United Nations imposed more stringent sanctions against Iraq and over time they also assured more comprehensive autonomy to the Kurdish population (Tripp 2007, 255). Throughout the late 1990s in the West and especially in Washington, the dissatisfaction with Saddam Hussein's regime grew bolder, and together with it the anxiety about the risks of renewed manufacture and proliferation of biological weapons to terrorist groups such as Al-Quaeda. After the 11 September 2001 terrorist attacks, the US grew impatient, and despite having convincing evidence of Iraqi continuation of the chemical and biological program or provision of such weapons to terrorist groups, the second Gulf War became the question of time. In the spring of 2003, Saddam had no weapons of mass destruction, but his ambiguous remarks, which were intended to deceive his enemies, paved the way for the second Allied invasion that had transformed all the Middle Eastern region ever since.

To return to the point of origin, the argument so far has been that risk has been pre-

dominantly captured by safety sciences. However, as we can see from the example of development and use of chemical and biological weapons, security studies have provided a totally new platform for considering risks, especially those related to conflicts and wars, because they introduce the troublesome concept of intentionality. It was not the existence of biological and chemical weapons which drove the region into war. Rather, it was Saddam Hussain's intentional judgment (translated into Iraqi military plans and policies), to start two aggressive wars with Iran and Kuwait, and to commit many atrocious aggressions within his own country, which propelled him to develop, store and use such deadly weapons. The risks which arose from the use of chemical and biological agents were not natural, they were human-made by the ruthless regime.

Conclusion

The concept of risk in global life has not been fully understood and explored and this paper has argued for a broader understanding of its reach. Until recently, risk as failure has been a keyword of safety sciences which aimed at designing more reliable and failure-proof systems. A component of safety systems, risk has been considered as relatively simple, predictable, and therefore, assessable and manageable phenomenon. Security studies have preferred the terminology of threat to capture the dimension of risk which is more complex and more consequential to survival. The argument in the above sections was to claim a new role for the security studies within the area of risk research.

However, re-examination of risk entails a deeper understanding of the fast changing, interconnected and complex global system. The differentiation between risk as failure (safety), and risk as threat (security), based on the concept of human intentionality can only be artificial at best. Even with hindsight, how much do we know about the natural (and therefore unintentional) origins of the outbreak of COVID-19 in Wuhan? No technical explanations have been provided yet, or at least not those which could calm the many doubts raised. Furthermore, even if we had the knowledge of natural origins of the pandemic, was it not the fragmented and confused responses all around the globe, which could be held accountable for the failure to contain the disease? Even if the policies were more consistent, how far were they effectively communicated, monitored, and actually obeyed by the citizens? These are questions which all trickle down to the problems of social intentionality. Finally, even if its origins were natural, could not the virus be used with malevolent or military objectives in mind, similar to those of Saddam Hussein against his own citizens in

Kurdistan, or of European colonists in Latin America?

According to Ulrich Beck, the more our society strives to achieve modernity and dominate over natural disasters and calamities by installing powerful industries and complex bureaucracies, the more risks come back to us and the more consequential they turn to be (Beck 1992, 2009). As we can judge from the (mis-)management of the COVID-19 pandemic, risks in reflexive modernity are much more social than natural. At the same time, however, risks are not of the kind that traditional security studies would envision, when they deal with intentional actions. We can see around the world that bureaucracies issue empty targets, citizens rise in protest, subsidized businesses suffer closures, and hospitals turn into morgues. Intentionality behind public policies (such as in Deutsch's models) is disorderly, confused, irrational, and often results in unintended consequences. In Beck's words, risks turn back upon those who attempted to avoid them.

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