Metis

Study

Resilience

No. 21 | November 2020

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Summary

In recent years, the concept of resilience has become increasingly relevant in discussions of national and international security. It factors into political discourse when it comes to hybrid challenges, crisis management, technological vulnerabilities and climate change. It provides a comprehensive definition of the robustness of states and organisations in the face of multidimensional challenges but is often conceptually vague and can only be verified in hindsight. This study examines resilience primarily from the perspective of security policy and crisis management.

Resilience instead of defence?

Security challenges have changed. While in the past, states primarily faced threats, today they are predominantly confronted with risks and hazards. Threats emerge when actors have the capabilities and intention to infringe the security of others. We speak of risks if the actors, capabilities and intentions are unclear. Natural disasters and pandemics are examples of hazards. Unlike threats, risks are defined as the product of the probability of harm occurring and the severity of that harm (or the benefit to the actors who cause it). Risks are generally more subjective in nature and more numerous. Rapidly developing and spreading new technologies provide states and non-government organisation (NGOs) as well as individuals with instruments of power that can have strategic implications.[1] Hazards also increase as a result of climate change. It follows that the spectrum of potential risks and hazards is expanding. This has led to a rethink of security policy in most states and expedited a paradigm shift away from defence and toward resilience.

What is resilience?

Modern societies with integrated, mutually dependent sectors and vital services are highly complex. This high level of connectivity can lead to severe disorder and disruption in the event of natural disasters, large-scale emergency situations or terrorist or hybrid attacks on critical infrastructure. A shutdown of the Port of Antwerp not only would have economic consequences for the import and export sector but would also affect industrial productivity in all of Europe. Interrupted supply routes would create bottlenecks for resources and food supply. Because of the transnational nature of critical infrastructure, the Port of Hamburg would also be affected by overcrowding and congestion as increased traffic would be diverted there in this scenario. Especially with a view to managing such severe crises, NATO and the European Union (EU) as well as national governments and NGOs have begun to incorporate the concept of resilience as a guiding principle for international crisis response and international security. Like so many other buzzwords, however, resilience lacks a clear and universally agreed definition. Sometimes the focus is on resilience to natural disasters and their ramifications, sometimes it is all about defence against and absorption of hybrid attacks. The way the concept is used thus often depends on the nature of the crisis situation it is supposed to address.

Different disciplines and fields of research explore resilience from different perspectives. In psychology, for example, resilience refers to an individual's ability to recover from a traumatic experience. In this context, resilience is understood as an individual process of positive adaptation in the face of considerable adversity. In political geography, on the other hand, resilience is the ability of an ecosystem to cope with a change in

[1] See "Conventional arms control and emerging technologies", Metis Study No. 20 (October 2020).

conditions, return to a previous condition or continue to function despite disruption. The focus is thus on the systemic level. The prevailing opinion in political science is that resilience describes the robustness of states, organisations, societies and even individuals at various levels of analysis. This robustness becomes quantifiable in the wake of shock and crisis situations, particularly as the ability to withstand crisis-induced setbacks, maintain government services and return to the pre-crisis state of affairs. Resilience is thus quantified based on two parameters: the level of robustness and the dimension of time. Ireland and Cyprus are examples of strong resilience in terms of both government and the economy as they were both severely affected by the banking and financial crisis, yet have overcome it quicker and more thoroughly than other European states, emerging stronger than ever with a diversified financial economy. Examples of time-sensitive resilience include the response of the EU states to the humanitarian crisis in the course of the migration flows of 2015 and then later their handling of the politically motivated refugee crisis of 2020.

An additional third dimension of resilience deals with social and institutional processes of transformation aimed at increasing future resilience based on lessons learned from a crisis situation. Besides immediate crisis response and management, the concept of resilience thus also focuses on the prevention of crises. Such crises may include extreme natural events and large-scale emergency situations as well as hybrid attacks. Unlike psychology or political geography, political science research focuses primarily on defining the dynamic, complex and process-oriented nature of resilience, which, through comprehensive incorporation of various levels of analysis, goes beyond the mere increase of robustness. Resilience is thus described as involving a long-term transformation process aimed at preparing actors and organisations for any conceivable crisis situation so that they may quickly overcome them and in doing so lay the foundation for resilience to the next crisis.

Resilience in the EU and NATO

In its 2010 Internal Security Strategy for the European Union and the 2013 European Union Civil Protection Mechanism as well as other subsequent documents, the EU has already established that resilience-building and crisis management are some of its fundamental security tasks. A crisis can be political, military or humanitarian in nature and may result from a natural disaster or technological disruption. The EU's role in crisis management goes beyond military operations to deter and defend against threats to European territory and the safety and security of the people of its member states. It can include military and non-military measures for the management of the entire spectrum of crises, which can be taken before, during and after conflicts and disasters. The EU considers strategic resilience a central capability that puts the Union in a position to manage complex challenges. It uses context- and crisis-specific approaches in the areas of energy, health, transport, finance, information and communications technology, water supply, food security, the chemical and nuclear industries, research, space, legal security and public safety and security. A bottom-up approach is generally preferred and allows for targeted crisis management that begins locally and on an individual level. Existing resilience is strengthened and new vulnerabilities are identified thanks to mechanisms for the early recognition of crises. When all resilience approaches, from the individual to society to the member state, are pooled, the result is a form of strategic resilience that enables the EU to meet security challenges on a civilian level.

NATO considers resilience the first line of defence and thus looks at the issue from a perspective of security policy. Article 3 of the North Atlantic Treaty requires that the members of NATO, by means of continuous and effective self-help and mutual aid, maintain and develop their individual and collective capacity to resist armed attack. At the Warsaw Summit of 2016, the NATO members agreed on seven baseline requirements for national resilience:

(1) assured continuity of government and critical government services

(2) resilient energy supplies

(3) the ability to deal effectively with uncontrolled movement of people

(4) resilient food and water resources

(5) the ability to deal with mass casualties

(6) resilient civil communications systems

(7) resilient civil transport systems

Resilience in NATO covers the entire threat spectrum as well as relevant responses, from defending against or responding to a terrorist attack to scenarios of collective defence. Strengthening robustness through civil defence measures plays a complementary role in strengthening the deterrence and defence posture of the Alliance. Unlike in the EU, in NATO the concept of resilience is used primarily in a security policy context, focuses on threats rather than risks, and is permanently tied to the concept of deterrence.

Deterrence through resilience?

Both NATO and the EU define resilience as a crisis response approach. For NATO, however, the focus is on the aspect of deterrence. Based on the principle of deterrence by

Fig. 1 *First North Atlantic Council meeting at the New NATO Headquarters, Brussels, May 9, 2018.* | Photo: Jan Van de Vel, © NATO; Source: flickr.com/nato

denial, resilience can be applied as a concept of deterrence.[2] The idea is to signal to a potential attacker that their endeavour is futile. Deterrence by resilience signals robustness and demonstrates the ability to absorb any kind of attack. It is therefore not a question of defence and subsequent counterattack in response to hybrid attacks, for example, but rather of establishing "absorption dominance" and thus the ability to control how damage unfolds and how long it takes to return to the previous status quo after an attack.

A certain historic boxing match is a good analogy for this absorption dominance and its effect on deterrence by denial. When 32-year-old Muhammad Ali entered the ring to fight 25-year-old George Foreman for the title of world heavyweight champion, he was considered the underdog. No opponent of Foreman's had ever lasted more than three rounds. In the second round, Ali began leaning on the ropes instead of attacking Foreman in the ring. To anyone who did not know that the elastic ropes absorbed the majority of the force of Foreman's punches, it looked as if Ali was sure to go down soon. By the fifth round, Foreman had tired himself out with his constant attacks. Finally, to the astonishment of spectators, Ali knocked out Foreman in the eighth round, winning the fight. The fight went down in history as the "Rumble in the Jungle" and illustrates the concept of absorption dominance. Thanks to his rope-a-dope strategy, Ali was able to absorb Foreman's furious punches over several rounds by redirecting their kinetic energy into the ropes without being knocked

[2] See "Deterrence in the 21st Century", Metis Study No. 16 (May 2020).

Fig. 2 *An employee checks the monitors in control centre of the Emergency Response Coordination Centre (ERCC) in Brussels, Belgium on June 19, 2017.*

Photo: © Alexandros Michailidis/Shutterstock.com out like every other opponent of Foreman's had. He was thus more resilient than those who had come before him. This absorption dominance also worked to deter future opponents: Muhammad Ali hanging in the ropes was an opponent best avoided. Absorption dominance is a sign of sophisticated resilience, i.e. the ability, much like Ali's, to withstand knockout punches almost entirely undamaged. It is also a sign of an actor's ability to learn: the older Ali had to adapt to a new challenge by rethinking and adjusting his fighting style.

When it comes to cyber risks and hybrid threats, for example, a strategy of resilience is more effective than one of deterrence. For example, if state A remains largely unharmed and unimpressed (i.e. unaffected by major cost) by a hybrid intervention of state B involving fake news or cyberattacks, the probability of a second, similar attack will be drastically reduced. To implement this approach, states would have to focus on developing an all-state capacity for resistance and absorption which comprises all critical areas in order to become more resilient to attacks and disruption. More robust states – in which all of government as well as the public and private sector are involved in civil crisis prevention and management – are less vulnerable. Reducing vulnerabilities is essential because they can be used as leverage or targeted directly by adversaries. Deterrence by resilience is thus an important step further on from deterrence by denial: it discourages an adversary from attacking by signalling that – even if there are no countermeasures – an attack will not achieve its goal.

Making Germany and the EU more resilient

More robust states and societies are better at weathering crises. They tend to recover more quickly and are able to return to their pre-crisis level of functioning. Less robust societies are paralysed by crises for longer and thus miss out on other political, economic or social developments, running the risk of trailing behind progress for years. The primary objective of resilience is to ensure the continuity of government and essential public services even in a state of emergency. Resilience is especially improved if, in addition to government preparations, resources of the civilian sector are used to support state tasks. As the most economically powerful and populous country in Europe, Germany faces a number of necessities when it comes to crisis management. After all, sustained disruption in Germany threatens not only Germany's economic prosperity and the safety and security of its people but also Europe's political stability and security. A number of future-oriented measures at the national and European level can contribute to strengthening Germany's and the EU's resilience.

Strengthening national information exchange

Disaster management in Germany is subject to the principle of subsidiarity and as such it is the responsibility of the individual federal states. A national situation picture for civil protection is compiled in the Joint Information and Situation Centre of the Federal Government and the Federal States (*Gemeinsames Lagezentrum* – GMLZ). Information exchange in and via the GMLZ, however, is case-based, not institutionalised and voluntary. Data that could be shared with the command and control information (C2I) systems of the civilian and military response forces involved are only sporadically available. Because there are a number of different systems in use, mutually agreed standards for information exchange among civilian authorities and between civilian and military response forces are also lacking. A number of initiatives seem appropriate:

- expanding cooperation and information exchange between government authorities and the civilian sector
- defining technical standards and harmonising different monitoring and C2I systems
- establishing permanent monitoring based on a joint situation picture
- expanding civil-military cooperation on the management of hybrid risks and natural disasters

Strengthening international information exchange

The deficits that affect national information exchange also exist in the international context. While there are established NATO standards in the area of simulation-based military training, they are primarily geared towards military operations and are not explicitly intended for crisis management or resilience strengthening. There are a number of ways in which international cooperation could be improved:

- creating European standards for training civilian and military personnel and establishing a reserve of skilled civilian volunteers in the EU who can be called up in the event of a crisis
- creating European standards for EU-wide information exchange before, during and after crises
- expanding cross-border civil-military cooperation in crises
- compiling a joint situation picture for all of Europe to increase resilience

Europeanising critical infrastructure

Facilities that are highly important for the functioning of the state are considered critical infrastructure. Their loss considerably impairs public security. A high degree of interconnectedness and interdependencies has also made them more European. A number of measures could be taken to ensure their protection:

- defining and cataloguing national and European critical infrastructures
- establishing EU-wide permanent situation monitoring with regard to critical infrastructures
- creating cross-border emergency and contingency plans, joint safeguard measures and transnational redundancies
- building a European smart grid to safeguard power supply[3]
- establishing minimum standards for cyber resilience for central state tasks

Establishing early recognition of crises to support decision-making processes

There currently are a variety of ways to measure and predict crises and potential vulnerabilities. What is lacking, however, is a process for translating the results into political action. Ways to improve this situation include:

- making better use of early warnings for decision support
- developing processes for early containment of slowly developing crises

Promoting a resilience-based security culture

Resilience is about permanent transformation, not just maintaining the status quo. The careful handling of political and technical security is key. Investments in security must not be perceived as a drain. Instead, they should be considered a permanent part of the organisational culture of both government and the private sector and should be exercised and rehearsed in realistic scenarios. The following measures can help establish a resilience-based security culture:

- promoting a resilience-based security culture across all areas of society through national and European guidelines
- incentivizing prevention measures to establish them as something other than bothersome bureaucratic requirements, e.g. by reducing the tax burden on companies that invest in reducing their vulnerability to crises
- increasing awareness for security and safety through crisis and resilience plans
- developing national and EU-wide crisis scenarios and performing regular exercises as stress tests

[3] In a smart power grid, communication and information exchange allow for the dynamic management of the generation, use and storage of energy. That way, disruptions can be detected across the continent and large-scale blackouts can be mitigated.

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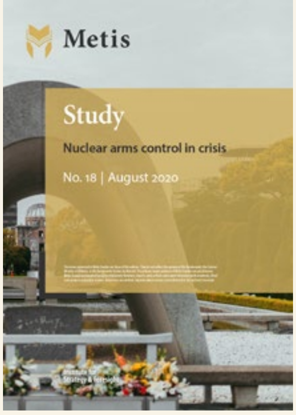
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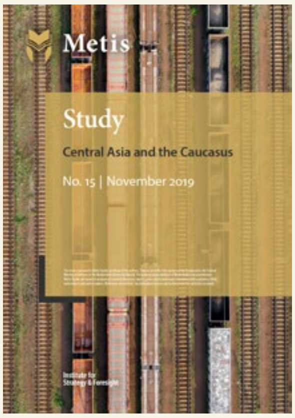
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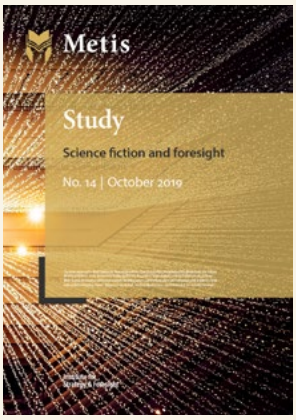
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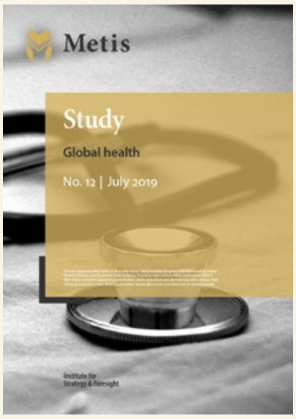
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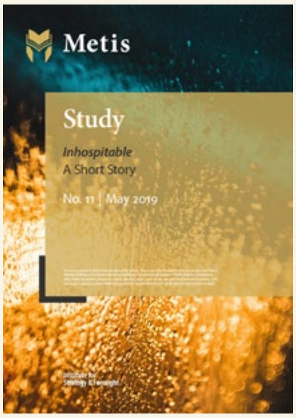
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