# Science and security expertise: Authority, knowledge, subjectivity

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ABSTRACT

What role does science play in shaping the political? This themed issue brings together scholars from political science, human geography, natural science and related fields with the common aim of exploring links between science/expertise and politics with a specific focus on security implications. The increasing attention to threats and risks related to issues such as climate change, migration, energy security, or emerging technologies creates a demand for new types of experts and expertise relevant for security politics. By looking at the actors who operate at the boundary between science, bureaucracy and security politics, this themed issue seeks to destabilize the notion of an apolitical sphere of science and expertise, while at the same time demonstrating how the politics of expertise shapes the authority and subjectivity of scientists and reconfigures the meanings and roles of scientific knowledge. In this editorial, we connect relevant literatures and introduce the individual articles that compose the themed issue.

## 1. Introduction

Science and scientific knowledge - especially in the area of the natural or 'hard' sciences - have traditionally held a special status in society. Generally speaking, the natural sciences have been considered objective and hence free from 'politics'. Results could be trusted to not be biased or carry any hidden agendas. Social science, on the other hand, has not enjoyed equal status. According to Pierre Bourdieu,"… everyone feels entitled to have their say in sociology and to enter into the struggle over the legitimate view of the social world" (Bourdieu, 2004, 87). In other words, social scientists have constantly been struggling with a range of 'experts' and other (non-)scientific social agents over the legitimate knowledge of the social. Its knowledge has been considered less objective and perhaps even inherently political, contra natural scientific 'truths'.

While debates within the natural sciences have cast doubt on the clear cut separation of scientific truth and politics (Forsyth, 2003, 2011), the image of politics-free science has prevailed. But with the rise of risk management practices in security politics and the focus on so-called 'securitization' or framing of specific political issues as security threats, natural scientists and other experts have become increasingly involved in security politics, whether by explicitly taking part in the decision-making process, serving as advisors, expressing their opinion in media, or even implementing (security) policies. This puts the hard scientists on unfamiliar territory and resuscitates a number of questions about the supposedly apolitical nature of their work. Is the gap between the status of natural and social sciences a misrepresentation? To what extent is natural science – like its social science cousin – bound up in politics by default? This themed issue seeks to unpack these novel connections between security and (scientific) expertise and address some of the new questions that the involvement of a broader scope of experts in security politics bring about. Compared to prior research that focused on the links between science and expertise, the themed issue expands the focus to include under-researched expert sites and specifically the *security dimensions* of (natural) science and expertise.

The editorial is structured as follows: In the next section, we explore in depth three literatures of relevance for understanding the new situation. First, we introduce previous discussions of expertise and 'the political' within the field broadly conceived of as physical and human 'geography'.[1] Second, we then turn to the increasingly relevant debate within science and technology studies (STS) focused on the co-constitution of science and society and the impossibility of hermetically sealing off the scientific sphere. And third, we argue for the relevance of the evolving debate within security studies known as securitization theory, which is concerned with the normative dilemma of conducting security research and/or mobilizing scientific knowledge with regards

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[1] These two main branches of Geography broadly focus on Earth science aiming to understand issues across physical spheres and patterns (physical geography), and the distribution of social phenomena and the relation between humans and nature across space and place (human geography).

to security matters. The following section fleshes out what a research agenda connecting the three literatures would look like, and argues for the importance of focusing on three points: authority, knowledge, and subjectivity. The final section introduces the articles in this themed issue and points to further research needed in the future.

## 2. Security and the politics of scientific expertise

Within the more physical branches of geography and environmental studies a strong trend to view science and expertise in apolitical terms has been present for a long time. However, a number of openings towards situating science in a less than apolitical sphere can be found in the literature, and a focus on the shortcomings of technical and apolitical approaches to and expertise in environmental problems have emerged.

Within the subfield of natural resource management (NRM) for instance, such openings can be found. Political Ecology scholars in particular, although diverse in their individual interpretations of the meaning and objective of Political Ecology itself, are bridging fields of Ecology (or environmental science) with Political Economy and/or STS to add a political dimension to the criticized apolitical approaches. For instance, some scholars are concerned with the politics of ecology as a scientific legitimization of environmental policy (Forsyth, 2003, p. 4) and propose discourse analysis to interrogate the relationship between power and scientific knowledge (Neumann, 2005, p. 7). These and other Political Ecology approaches criticize the perceived political neutrality offered by "science", and instead view science as socially and politically constructed and influenced, emphasizing the multifaceted relationship of politics to the science of ecology, but without completely dismissing one over the other. By diversifying scales and perspectives, environmental problems are contextualised to specific habitats so as to understand local dynamics rather than seeking *universal* explanations from a more positivistic and apolitical lens (Forsyth, 2011, p. 34).

Political Ecology approaches are exemplified and empirically unfolded in critical literature on the marketization of nature (e.g. Bumpus and Liverman, 2011; Fairhead et al., 2012; Van Hecken and Bastiaensen, 2010), revealing political and discursive dynamics showing the hidden political ambiguities of environmental protection frameworks. Likewise, work by Tania Murray Li on community-based forest policies (Li, 2007) has demonstrated the blind spots of the apolitical approach. She persuasively brings together notions of 'rendering technical' social problems and solutions, of 'authorizing knowledge' by assimilating science and containing critique, and of the 'anti-politics' of reposing political questions as matters of technique. Li and likeminded critical scholars (e.g. Aguilar-Stoen, 2015; Buscher, 2014; Nel, 2015) unfold the role of different types of experts who diagnose disorders and prescribe the needed interventions, and examine the active agency and influence of scientists across disciplines, including human geography (Pasgaard et al., 2017). Another recent take on scientific expertise in NRM is by Lund and colleagues, (Green and Lund, 2015; Lund, 2015) who focus on 'professionalization'[2] of forestry, and on how knowledge and expertise are created and shape access to benefits from participatory forest management. These scholars focus on the scientific management approaches undertaken by forestry bureaucrats and social elites of forest adjacent communities (rather than a focus on scientists or researchers like the authors themselves), and show how these central actors frame participatory forestry in a way that downplays politics by demanding technical, scientifically-grounded expertise. So, issues of universality, technicality, professionalization and expertise have provided ways into understanding the 'political' within natural resource management and political ecology.[3]

In development research, a similar political turn addresses the shortcomings of technical framings of problems and solutions. For instance, James Ferguson's influential book "The Anti-Politics machine" (Ferguson, 1994) effectively disentangled the "construction" of development from prevailing realities, arguing for a new politics of oppositions, where "the most important jobs for 'experts' is combating imperialist policies" (p. 181). More recently, scholars such as Mosse (2011, 2005), de Sardan (Bierschenk and De Sardan, 2014; de Sardan, 2005), Mitchell (2002) and Goldman (2005) all critically explore the role of a category of actors called "intermediary", brokers/translators of development, or simply development experts, who are typically Northern-based workers in non-governmental organisations (NGOs) or government officials (local bureaucrats). Along the same lines, work compiled by Cooper and Packard (1997: fourth cover) explores the relationship between academic knowledge and development practice, treating development as a "vast industry involving billions of dollars and a worldwide community of experts". Overall, debates have focused on experts as actively participating in the making of the issues they study, on science as an already situated practice, rather than a neutral observatory site 'out there', and on the mechanisms of the market and environment policies as factors posed as apolitical technicalities, but indeed shaping scientific/political outcomes.

Taken together, these perspectives on 'the political' surrounding science within debates in the main branches of geography touch upon dimensions long discussed within the subfield of STS. Situated in the broader constructivist paradigm within the social sciences, STS has stressed the inherently social and constructed character of the scientific endeavour,[4] even in areas seemingly unrelated to any social and political issues at all (Kitcher, 1984). Sheila Jasanoff is perhaps the person who has combined the constructivist trend most directly with the natural sciences (Jasanoff, 2014, 2005a)[5] by showing how science and expertise are bound up in cultural structures which favour some types of research and experts over others (Jasanoff, 2005b). As a more general statement about the relation between science and society, she has developed the concept of *co-production*, which highlights that science and social order are inextricably linked: It is impossible to understand science in the absence of the social order it is inscribed in and vice versa (Jasanoff, 2004). From this follows an understanding that an apolitical sphere of science is logically impossible. This does not imply that party politics or individual agendas cloud scientists' minds and lead to bad science. It rather means that science is always situated in the time and the space of a specific social order. In order to understand the political dimensions of science it is thus necessary to analyse not only the internal processes of a specific specialization or the ways in which scientists go about doing their science,[6] but also the 'situatedness' of science in a social milieu in a specific time period. In Jasanoff's words, we have to connect the micro-worlds of scientific practice with the macro categories of political and social thought (Jasanoff, 2004). Just as the above mentioned research in NRM and Ecology has branched out to contemplate various political dimensions, this themed issue seeks to unveil and situate science in its political and social context.

Compared to prior research that focuses on the links between science and expertise in the fields of natural resource management or human development, this themed issue includes analysis of under-researched expert sites and specifically the *security dimensions* of (natural) science and expertise. It does so by investigating a number of political processes not yet thoroughly analyzed in human development, geography and the geosciences. Based on the work in STS on the impossibility of hermetically closing of science from social order and the importance of the 'situatedness' of science, we introduce a focus on the performative effects of what we might call *security framing* as a

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[2] See Nightingale (2005).

[3] Ferguson being an anthropologist, this also applies to anthropology.

[4] For an overview of the STS debate, see (Hackett et al., 2008)

[5] Recent work by Bruno Latour has also taken up this connection (Latour, 2013).

[6] This has been a lead theme in early STS work. See e.g. (Barnes, 1974; Bloor, 1976; Barnes and Bloor, 1982)

framework for understanding current science-social order connections. Focusing on the performativity of security framings underscores that *something happens* when you move an issue from a political sphere to a security mode. Democratic deliberation might be overruled and rules of exception put into place. This poses what has been termed a 'normative dilemma of writing security' for researchers and politicians alike (Huysmans, 2002). When you invoke the term 'security' in your research to ameliorate a situation or bring to the fore new mechanisms or empirical detail of an issue you might end up creating the opposite of what you wanted: an issue might be cast so forcefully in terms of security and emergency speak that the details of your work get lost or brushed over and the conclusions used for purposes never intended. The perspective on security framing therefore carries the potential to shed light on aspects of 'the political' surrounding the natural sciences which have not yet been thoroughly researched and which can have immense implications.

Within the academic debate on critical security studies, security framings have been studied from several perspectives (Watson, 2012). Most well-known is securitization theory. The term *securitization* is specifically developed within the discipline of international relations and does not equal the everyday usage of the term security. When uttering the word 'security' and linking it to a particular referent object which is threatened on its existence, "something is done" (Buzan et al., 1998: 26): A process is set in motion in which measures beyond normal politics are legitimized. Securitization theory thus holds that security threats are not objective, but need to be understood as formed in a social process in which utterances about a specific threat are combined with a *referent object,* whose very existence is said to be threatened if the threat is not dealt with in time. If accepted by a specific *audience,* a securitizing move can pull the process of dealing with the threat out of the so-called 'normal' political sphere, where cases are dealt with through deliberation, and into a *sphere of exception* in which *emergency measures* can be applied (Buzan et al., 1998, 35–42). The understanding of social order tied to securitization theory is based on a normal sphere of politics as we know it from liberal democracies in the western world. In this normal sphere, problems are dealt with in a democratic manner and rationales for selecting one type of policy over another are dealt with by the democratic system. However, in times of securitization – a period in which a threat scenario gets accepted as existential - these mechanisms can be weakened or even pushed aside and new or emergency measures (which would be unthinkable before) are applied.

Political scientists studying security politics from a constructivist perspective have shown that the security framing may in fact be exercised in two modes. On the one hand, political elites may openly pronounce something as a security threat and through this move shift the issue out of democratic deliberation. The typical examples of this *securitization as a spectacle* is declaring a war on a foreign country – an act that is public and has clear social and political consequences in terms of mobilizing the military and closing off the debate on how to deal with the enemy state. The securitization of global terrorism that came after the 9/11 attacks on the United States is another example of securitization as a spectacle – political speeches, national security strategies, media as well as academics all engaged in promoting the security discourse and constructing a new image of a global threat (Jackson, 2007; Meyer, 2009; Buzan, 2006).[7] While the process of accepting the securitizing move by a relevant audience (e.g. the public, the parliament, etc.) can be fully in line with democratic procedures, what securitization theory highlights as problematic are the measures and the atmosphere of fear and urgency justified by securitization.

On the other hand, many scholars have shown that this discursive securitization is not the only way to frame something as a threat to the

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[7] Further examples of securitized issues include, for instance, migration (Bourbeau, 2011; Huysmans, 2006), rogue states (Stritzel, 2014), drug trafficking and organized crime (Crick, 2012; Emmers, 2003), infectious diseases (Elbe, 2010; McInnes and Rushton, 2013), etc.

society and have argued that we may find many instances of securitizing *bureaucratic practices.* From profiling practices conducted by police or immigration officers, installation of closed circuit television (CCTV) cameras on street corners and in public institutions, to visa policies or obligatory health checks of foreign nationals, the seemingly insignificant 'little security nothings' (Huysmans, 2011) may contribute to constructing certain groups of people or types of activities as dangerous and thus requiring extra oversight and regulation even without the political mobilization by securitization spectacles. As a result, illiberal practices may become integrated into democratic societies even without political mobilization typical for securitization as a spectacle (Bigo and Tsoukala, 2008; Bigo, 2002).

According to Buzan et al. (1998), certain *facilitating conditions* can strengthen or weaken securitization attempts. Amongst other things, scientific knowledge and scientists' promotion of a case can function as such facilitating conditions (Berling, 2011). Sometimes a scientific explanation can be held up as bolstering the securitization attempt and making the process of keeping decision-making within the normal sphere of politics almost impossible. Sometimes the contrary can be the case: a scientific fact or group of scientists can work to dampen the securitization process and keep emergency measures from being introduced. But in yet other circumstances, science and scientific knowledge can be so broadly accepted as 'true' that it has similar effects to securitization without clearly being stated in the ways described by Buzan et al. (1998): through a process of *objectivation* in which a specific type of knowledge closes off all other knowledge interventions, processes like securitization can be set in motion. By pulling an issue out of the political realm and into the non-politicised, technical realm, science can close off debate and legitimise emergency measures (Berling, 2011).

So far, security scholars have looked primarily at cases in which the expert intervention into securitization processes comes from practitioners, professionals and other experts 'from the field', such as policemen, security bureaucrats, military advisors and so forth. However, with the securitization of new issue areas, new types of expertise become relevant for the governance of security. This creates a new demand for *civilian* security expertise, provided by criminologists, political scientists, area specialists, but increasingly also natural scientists (Rychnovská, 2016).

When looked at from this perspective, doing security science or providing scientific expertise for security purposes suddenly seem like a dangerous endeavour: using the word 'security' may 'bring about what one is trying to avoid' as Huysmans (2002) once argued. And succeeding in closing off a controversy through objectivation may trigger similar effects. Highlighting and analysing the different constellations and practices of scientific security expertise is thus crucial for understanding the politics in novel security arenas and their possible consequences for democratic deliberation and scrutiny; not least when it comes to the natural sciences, which have arguably held a position in society which kept it in a seemingly apolitical sphere outside of society.

## 3. A new research agenda: Authority, knowledge, subjectivity

How do scientists become security experts and how do they practice security expertise? What role does science play in securitization processes as well as in technocratic security politics and specifically, how does scientific knowledge shape the politics of security? If we accept that science is a social practice situated in a specific time and place, and that threats are not objective but constructed in processes of securitization, the research agenda coming out of the above debate highlights three focal points from which to look at the links between science and security, namely: authority, knowledge, and subjectivity.

First, **authority**: according to Jasanoff (2005b), scientists are in fact supposed to *function* as experts; as persons possessing analytic skills grounded in practice and experience, rather than as truth-tellers; and they are expected to manage heterogeneous bodies of knowledge and

offer balanced opinions in decision-making. Then, in the face of uncertainty, the central question is no longer which scientific assessments are *right*, but whose recommendations the public should accept as credible and authoritative. Considering the effects a scientific milieu or a specific scientist may have on security matters, one of the key questions that research on science and security expertise should scrutinize is how the rules for scientific engagement in security governance are made, upheld, and challenged in specific fields. Specifically, what counts as valid science on specific issues? Who are accepted as legitimate voices in deliberations in certain areas? How do scientists become *security experts* and how do they practice this expertise and how does the security framing of certain issues affect the prospects of scientific engagement in dealing with the issues? Drawing on constructivist security studies and STS, we put forward a set of premises for the study of scientific authority in security governance. First, the rules and practices of scientific engagement in security politics are context-specific, depending on the broader structure of power relations that a given actor is embedded in. Instead of seeking to build universal theoretical models to explain the role of scientists in security politics, we support empirically-driven research that explores concrete practices of scientific engagement in security governance. Second, the authority of scientific security experts and the 'securityness' of an issue area are mutually constitutive – while scientists may affect the processes of security framings, their status as security experts may be shaped by the urgency of an issue and its specific construction as a security threat. Third, scientists may engage in security matters via multiple channels, from actively supporting hegemonic security discourse and practices/interventions, providing alternative frames of security, to resisting the securitization of specific issues.

Secondly, **knowledge**: following on from the focal point on authority, we wish to understand what kinds of knowledge scientists/experts (co-)produce and to whom? How is the boundary between scientific/expert knowledge and political decision constructed? Are some types of knowledge more prone to processes of objectivation? In this regard, we downplay the traditional perspective on scientific knowledge as objective and value-free and the related image of science as 'speaking truth to power' (Berling and Bueger, 2015). Instead, we seek to unpack how scientific ideas are informed by political discourses and rooted in power relations and practices and how scientific knowledge in turn relates to dominant ideologies and security frames. As such, we support research that looks at how the relations between scientific and political knowledge are constructed and performed in specific contexts and how they are shaped by securitization processes.

Thirdly, **subjectivity**: Based on the above two focal points, how is the subjectivity of experts constructed and practiced? How do experts relate to security professionals, decision-makers as well as the governed subject(s)? Do scientists play their cards in a way that might exacerbate or dampen a process of securitization? Do they construct their own position as one of the apolitical scientists? Are they aware of their own potential role in processes of securitization? The third focal point of our framework emphasises not only the importance of scrutinizing the position of scientific experts vis-à-vis other fields of power, but also suggests exploring how these experts perceive their own roles in these processes and whether and how they reflect on their strategies of dealing with 'the political'.

With these focal points, the themed issue contributes to scholarly debates in – and the dialogue between – the fields of geography studies, STS, and security studies by explicitly adding a voice to the growing self-reflexive debate about the role of individual scientific experts in the making and unmaking of scientific knowledge and security.

## 4. Contributions to the themed issue

The themed issue consists of six contributions, all responding to the three focal points sketched out above.

The contribution by Berling and Bueger provides a fresh theoretical perspective on the problem of linking science and politics in light of current claims about an emerging era of post-factual politics. Drawing on a broad scope of literature from science studies, human geography, political science, and the social sciences, Berling and Bueger zoom in on practical strategies for coping with central dilemmas at the boundary between science and practical politics in this difficult situation. Without arguing in favour of one strategy, the authors present a repertoire of possibilities based on readings of Gramsci, Bourdieu and pragmatism which can be put to practical use by individual scholars. The other papers scrutinize the relations between science, expertise and political practice in specific contexts by looking at the authority and subjectivity of experts in political decision-making on sinking islands, by mapping expert knowledge related to the securitization of Ecosystems Services and Rare Earth Elements, and by analyzing how boundaries between politics and (scientific) expertise are constructed and stabilized in the biological weapons regime and in urban security governance in Latin America.

The paper by Bruner focuses on the politics of scientific expertise in the United Nations Security Council. Bruner looks specifically at the attempt to securitize climate change in relation to 'sinking islands' and discusses how this issue was rejected in the Security Council and referred to expert decision-making. In that sense, Bruner studies an instance of 'rendering technical' highly political issues. The paper highlights that political elites may refer to science and expertise not only to support the validity of their arguments, but also to exclude certain topics from the political agenda and avoid responsibility for decision-making while maintaining power.

Pasgaard, Van Hecken, Ehammer, and Strange analyse how scientific experts shape the meaning of Ecosystems Services and contribute to framing its degradation and loss as an existential threat to human security. Specifically, the authors use novel methods to operationalize the concept of expertise at the boundary between science and politics – bibliometric analysis combined with opinion-based surveys. Based on this research and with a self-reflexive stance, they are able to identify who produces recognized expert knowledge, what framing of governing ecosystems is promoted in this network of experts, and the implications hereof.

Machacek deals with the politics of expert assessment regarding the governance of rare minerals. She looks at how a criticality discourse related to so-called Rare Earth Elements is constructed and upheld by experts in the United States and Europe. This helps us understand the policies that are developed in order to secure supply in the face of possible supply shortages of critical minerals that have become a vital component of contemporary global economy.

The paper by Rychnovská explores the politics of scientific expertise in the international biological weapons regime. By looking at the transformations this regime has undergone in the past years her research highlights the increasing role of scientific experts during the securitization of bioterrorism and the shifting attention in the biological weapons regime to the governance of biological insecurity and new risks related to techno-scientific progress.

Finally, the research by Hochmüller and Müller scrutinizes the transnationalization of security expertise on the case of shifting rationales of urban governance in Guatemala. Their paper empirically explores how the authority of 'Western' security experts translates to a specific development context and how these experts being invited to intervene in the local security politics shifts the very rationalities of urban governance.

With this collection of articles, we hope to have helped start a new, fruitful conversation between science and security, which can lead to new insight for both science studies, security studies, and not least geography.

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