

#### Contents lists available at ScienceDirect

#### Geoforum

journal homepage: www.elsevier.com/locate/geoforum



## The future is now! Extrapolated riskscapes, anticipatory action and the management of potential emergencies



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#### ARTICLE INFO

# Keywords: Risk management Emergency management Riskscapes Temporality Anticipatory action Future geographies

#### ABSTRACT

Anticipating the future is a key practice for the management of potential emergencies. Anticipatory action needs the future to become ready-to-hand. Focusing on the logics and practices of anticipatory action the paper discusses the relations between time and space in the context of risk and uncertainty. Spatializations of simulation technologies, preemptive emergency management and anticipatory action aim to disclose and extrapolate the future. In general, infrastructures are technologies which aim to materialize expectations concerning the future. In the case of emergency management infrastructural measures enable and/or constrain practices by inheriting specific logics.

The concept of riskscapes (Müller-Mahn and Everts, 2013) poses to be a promising framework to grasp these issues. In our perspective, extrapolated riskscapes treat the future as an already interpreted and symbolically structured world. This involves not only looking at the temporality of riskscapes, but also dealing with geographies of inscribed futurity. Two case studies focusing on emergency management practices of firefighters will be deployed for illustration: the first observes the logics of preemptive emergency management and anticipatory action inscribed into materialities of infrastructures in the context of rail-bound hazmat transports; the second shows how computer simulations for crowded geographies facilitate decision-making and action for policing and crowd management.

Instead of treating future in riskscapes as neutral, we highlight the politically situated practices that co-evolve with these technologies and their spatializations. The article discusses the dimension of time within riskscapes to gain a better understanding of the temporalization of space as in simulations and the spatialization of time as in infrastructures of emergency management.

#### 1. Introduction

The expression "The future is now!" raises a range of questions around the topic of space and time, spatialities and temporalities, in the context of risk and emergency management in the fields of action of firefighters. Questions concerning this topic are: what is the relationship of space and time in the context of risk and emergency management? What guiding logics and strategies exist to make future manageable within the fields of action of firefighters? What practices are required to get hold of ('the') future, to be ahead of it, and to subsequently manage risk through anticipation? The notion of risk emphasizes the incalculable element of futurity. Various attempts to manage risks are ways by which we colonize the future (Beck, 2002,

40), aiming to grasp something which is not (yet) present but might be some day. Anticipatory actions such as imagining, projecting, modeling, and simulating denote the attempt to get hold of the not-yet-present condition we call future. This is what Schatzki (2012, 349), drawing on Heidegger (1962 [1927])<sup>1</sup>, <sup>2</sup>, calls "being-ahead-of-itself" in the sense of "coming-towards [...] the future". This being-ahead-of-itself is central to understanding risk and emergency management. Thus, in emergencies the basic logic is to get hold of something which has not (yet) happened. Within the techniques and practices of risk and emergency management, the future is treated as if it were equipment (*Zeug*) that can become ready-to-hand (*zuhanden*) (ibid., 95 ff.). There are different strategies and practices to achieve this by encompassing different entanglements of space and time.

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<sup>&</sup>lt;sup>1</sup> The German philosopher Martin Heidegger is a dubious scholar due to his involvement in the German National Socialist party and using his works therefore "needs careful scrutiny" (Korf. 2014, 146). See our remarks in the conclusion.

 $<sup>^{2}</sup>$  We use the translation by Macquarrie and Robinson (Heidegger, 1962 [1927]).

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In a first step the article discusses the viability of the concept of 'riskscapes' (Müller-Mahn and Everts, 2013) to shed light on the spatiotemporal dimensions of risk management raised in recent research on risk and emergency management (Aradau and van Munster, 2007; Lakoff, 2007; Anderson, 2010, 2016; Lakoff and Collier, 2010; Aradau and van Munster, 2012; O'Grady, 2014). Riskscapes encompass different points of view on risk and space (Müller-Mahn et al., 2013, 202). Riskscapes are highly depended on diverse perceptions and multiple practices which constitute the intricate relationship of space(s) and risk (s). The notion of riskscapes highlights "real-and-imagined geographies based on individual and collective experience, tradition and knowledge" (Müller-Mahn et al., 2013, 205).

We proceed with a concise explication of the framework, its origins, conceptual links and its relevance for risk research and risk management. By using this approach, we gain insights into the role of social practices in shaping different ideas on risk, its management and its spatial dimensions.

Nevertheless, we do see conceptual gaps and potential improvements. The concept is inspiring but the aspect of the relationship of space and time has not been sufficiently elaborated. Since riskscapes focus on practices related to risk and space the factor of time and even more so social interaction in time - timespaces (Schatzki, 2010) or temporality (Heidegger, 1962) - should be taken into account. Especially in the case of risk and emergency management the spatiotemporal entanglements need to be conceptually addressed. Thus, the question is: What contribution to understanding the role of 'future' in risk management is possible by using the riskscapes concept - and vice versa? To achieve a better understanding of the temporalities of riskscapes, we depart from Heidegger's philosophy in "Being and Time" (1962) and connect this to recent research on risk and anticipatory action by Anderson (2010). We address these implications of making the future present in risk management through the term 'extrapolated riskscapes'. In the second part, we discuss two distinct case studies of anticipatory action by firefighters in the light of our conceptual

The first case study observes the role of infrastructures of emergency response for dealing with potential rail-bound hazmat transport incidents within the practices of firefighters. Empirically, the study is based on qualitative analysis of 11 semi-structured interviews (partially as go-along interviews; cf. Kusenbach, 2003) with representatives from local firefighters, railway companies and citizens' initiatives; several official documents (e.g. professional reports, official statements, working papers and accident reports); observations of discussion meetings between firefighters, local and state politicians as well as citizens' initiatives representatives.

The second case study deals with the approach of modeling and simulating crowds at big events for security or safety reasons. Empirically, the study is based on qualitative analysis of 12 semi-structured interviews with representatives from various organizations (firefighters, police, crowd managers, facility managers) that deal with safety and security on large-scaled events. This was accompanied by two moderated roundtable discussions with firefighters and other stakeholders in event security as well as simulation developers. Additionally, a workplace study (cf. Luff et al., 2000) had been conducted in one of the biggest stadium in Germany. During this study various go-along interviews were supportive in collecting data.

Ensuing from these empirically grounded case studies, a synthesis elaborates two ways in which the future impregnates the activities of firefighters through the 'temporalization of space' and the 'spatialization of time'. We will conclude with some general remarks on the political and ethical implications of making the future present, and on the role technologies have in these endeavors. Finally, we make the case for more research on the anticipatory actions of firefighters and the intricate relationship with emerging technologies that allow to colonize the future.

### 2. Riskscapes, anticipatory action and the management of potential emergencies

The concept of riskscapes, as formulated by Müller-Mahn and Everts (2013), stems from the idea of combining diverse aspects of risk research and highlighting the spatial dimension of risk. There is not just one risk and its one spatial characteristic, but rather "multiple risks entwined with other risks" (Müller-Mahn and Everts, 2013, 22). The concept has three major theoretical bases: (1) the works of Arjun Appadurai on global disjunctures between economy, cultural flows and politics (Appadurai, 1990, 1996); (2) the works of the philosopher Theodore Schatzki on practice theory (Schatzki, 1996, 2002, 2010, 2012), and (3) the works of the geographer Valerie November on spatialities of risk (2004, 2008). To understand the concept of riskscapes, these three influences and their central ideas will be presented briefly.

A notable aspect of the term riskscape is the suffix '-scape', which relates it to 'landscape' and suggests a spatial dimension. Such an understanding is grounded in the conceptualization of 'scapes' by Arjun Appadurai (1990, 1996). He explains that his five examples of 'scapes', like landscape, are deeply subjective constructs very much depending on the viewer and viewpoint. Thus, Appadurai's understanding of the term 'landscape' is a more metaphorical one (Müller-Mahn and Everts, 2013, 25), emphasizing a perspectival notion of landscape. Appadurai's (1990, 296) five examples of 'scapes', ethno-, media-, techno-, ideo- and financescapes, are imagined and performed through diverse actors with their viewpoints and situatedness. Müller-Mahn and Everts (2013) add riskscapes to this register. The notion of riskscapes is not purely metaphorical and does not just focus on imaginations and representations of space. Tangible, physical space is seen in relation to perspectives on space. Renn and Klinke (2013, 21) identify two aspects of space within the concept of riskscapes: "Space as a principle of orientation [...] and space as the projection of diversity of meanings". The first is based on physical-material characteristics, and the latter on perception, imagination and representation of space. Materiality and (Euclidean) spatiality play an important role in and through practices.

Another important aspect is derived from Appadurai: riskscapes have an inherent individual perspective and individuals navigate through these -scapes. Furthermore, they are socially constructed and performed since individuals are members of groups. Individual riskscapes may overlap. Thus, although it could have an analytical focus on individuals it makes sense to look at social groups, be it residents, politicians, spatial planners, firefighters or crowd managers. They do not just have common perspectives but their (spatial) practices are influential regarding the politics and policies of dealing with risk and emergencies (Runkel, 2014).

This leads to the second major strand of the riskscape concept discussed here: the influence of practice theory as developed by Theodore Schatzki. Müller-Mahn and Everts (2013) integrate the idea of practices to grasp and depict the social dimension of the constant making and remaking of risk and its spatial characteristics. Social life is shaped by human activities, or, as Schatzki (1996, 89) calls it, "a temporally unfolding and spatially dispersed nexus of doings and sayings". According to Schatzki (1996, 2002) all social phenomena are constituted by practices, and thus phenomena associated or specified as risky (for some) are profoundly shaped by practices. Practices are often routinized types of behavior consisting of bodily and mental activities, but also things and their usage, tacit knowledge, and so forth. The integration of ideas and impulses derived from practice theory emphasizes the continuous making and remaking of risk and its 'handling'.

In this conception '(land)scapes' are not just an inventory of elements but an effect of practices. Furthermore, according to Schatzki (2010, 106), practices can relate to "the same objective spatial expanse of the world". The same holds true for riskscapes: different riskscapes and different viewpoints and practices in relation to risks can

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