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Socio-spatialities of vulnerability: towards a polymorphic perspective in vulnerability research

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Abstract

"The space of vulnerability" – the title of the influential paper by Michael Watts and Hans-Georg Bohle from 1993 – highlights the importance of spatiality for vulnerability research. As geographers have fundamentally shaped the concept of vulnerability, the issue of spatiality has been crucial for vulnerability from the outset. However, what notion of space have scholars adopted in their vulnerability analysis? The aim of the paper is to assess the ways in which space has been conceptualised in vulnerability research. We conduct this assessment behind the background of the conceptual development of space in human geography. Of particular interest is the question of how the successive socio-spatial turns identified by Jessop et al. (2008), which evolved around the categories of place, scale, network and territory, are reflected in publications on vulnerability. The assessment is based on a review of the literature. We found that all four key socio-spatial categories have been taken up by scholars for vulnerability analysis. Following Jessop et al., we argue that a critical geography of vulnerability should acknowledge the polymorphy of socio-spatialities and assess the interplay of place, network, scale, and territory in the (re)production of vulnerability. We exemplify the argument with case studies from Bangladesh and Thailand and conclude that the full repertoire of spatial and social theories is needed in order to fully understand the social and spatial (re)production of vulnerability.

Zusammenfassung

GeographInnen haben das Konzept der Verwundbarkeit wesentlich geprägt, und so war die Frage der Räumlichkeit von Anfang an von entscheidender Bedeutung in der Vulnerabilitätsforschung. Während der Begriff der Verwundbarkeit im Laufe der Jahre immer präziser definiert wurde, so blieb indes der Begriff des Raumes oftmals vage. Das Ziel dieses Artikels ist es aufzuzeigen, wie die räumlichen Dimensionen von Verwundbarkeit in der Entwicklungsforschung thematisiert und konzeptualisiert wurden. Denn die Antworten auf die Frage, was Raum ist und welche Aspekte von Räumlichkeit bei der Forschung berücksichtigt werden, unterlagen in der Humangeographie in den letzten Jahren einem stetigen Wandel. Der Beitrag widmet sich aufeinanderfolgenden sozialräumlichen Wenden, die u.a. *Jessop* et al. (2008) identifiziert haben und die sich um die paradigmatischen Kategorien des Ortes, der räumlichen Skalen, des Netzwerks und der Territorialität drehen, und wie sich diese in der Verwundbarkeitsforschung widerspiegeln. Unsere Analyse beruht auf einer sorgfältigen Durchsicht der wissenschaftlichen Literatur der letzten 20 Jahre. Wir stellen fest, dass alle vier Schlüsselkategorien der Sozialräumlichkeit für Verwundbarkeitsanalysen genutzt wurden, doch meist mit Fokus auf einen dieser Aspekte. Im Anschluss an

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Jessop et al. plädieren wir indes für eine kritische Geographie der Verwundbarkeit, welche die Vielgestaltigkeit von Sozialräumlichkeiten anerkennt und das Zusammenspiel der Kategorien Ort, Skalen, Netzwerk und Territorialität explizit thematisiert. Wir nutzen Fallbeispiele aus Bangladesch und Thailand um unsere Argumentation zu veranschaulichen und kommen zu dem Schluss, dass das gesamte Repertoire an sozialen und räumlichen Theorien eingesetzt werden muss, um die soziale und räumliche (Re-)Produktion von Verwundbarkeit zu verstehen.

Keywords Vulnerability, place, network, territory, scale, human geography, Bangladesh, Thailand,

1. Introduction: why geography matters in vulnerability research

"What is the spatial dimension of vulnerability?" This was one of the fundamental questions *Hans-Georg Bohle* often posed in discussions with experts in academic fora and in seminars with his students. He strongly believed that "geography matters" (*Massey* 1984) in development studies, in general, and in vulnerability research, in particular. This assumption was based on a differentiated understanding of space – or rather spatiality – which he tried to convey to his listeners and readers. For him, space was not only a "container" in which interactions between humans and their environment take place. Without thrusting aside the basic material dimensions of space, he emphasised the relationality of space, the social production of space, and the personal 'injection' of meaning and identity in places (*Bohle* 2007a). *Bohle* was one of several geographers that significantly shaped and developed vulnerability thinking over the past few decades. Vulnerability as a research perspective is deeply anchored in geography as a discipline. The spatial dimensions of vulnerability have thus played a crucial role in the understanding of vulnerability.

Parallel to the evolution of the concept of vulnerability, geographers have of course been engaged in the conceptual and theoretical elaboration of space. The discussion moved from a) a geometric understanding of absolute space as a container in which things exists and the description of these objectively given landscapes to b) the notion of a relative space with a focus on locational factors, positions and relations between places, goods and services, and to c) a social-constructivist understanding of relational space that is subject to personal interpretation and under permanent reconstruction (*Massey* 2005; *Weichhart* 2008). Geography has thus witnessed "successive socio-spatial turns" (*Jessop* et al. 2008: 390) – each turn thereby privileging a particular socio-spatial category over another. *Jessop* et al. (2008) identified four distinct socio-spatial categories that have evolved over the past 30 years: place (e.g. *Massey* 1984), territory (e.g. *Agnew* and *Corbridge* 1995), scale (e.g. *Swyngedouw* 1997) and, most recently, networks (e.g. *Amin* 2002).

But how are these socio-spatial debates reflected in research on vulnerability? How have refined understandings of socio-spatialities – place, territory, network, scale – influenced the questions asked in vulnerability analysis? Or from another angle, what is the role of space in vulnerability research? In this paper we seek to systematically assess how vulnerability research addresses socio-spatial relations, in general, and how the four socio-spatial categories highlighted by *Jessop* et al. (2008) are addressed, in particular. We furthermore seek to explore how vulnerability analysis can profit from "a more systematic recognition of polymorphy […] within socio-spatial theory" (*Jessop* et al. 2008: 389). In what follows, we will try to elaborate a more nuanced understanding of these spatialities of vulnerability. We argue that a comprehensive understanding of people's vulnerability requires a meticulous understanding of the socio-spatial relations that re-produce vulnerabilities. Knowing the geography of vulnerability, in turn, can set the basis for enhancing people's human security and for social resilience.

Our assessment rests on a critical review of the vulnerability literature that we chose by taking three steps. First, a core set of influential literature on vulnerability research was taken from *Janssen* et al.'s (2006) bibliographic analysis of scholar networks in vulnerability research. Second, we searched for relevant literature in the search engine "Web of Knowledge" by combining the term "vulnerability" with the terms "place", "territory", "network", "scale" and "geography". Third, we complemented the results with literature that is, according to our knowledge, relevant in the field of vulnerability research, in particular in Germany.

In the following section, we briefly sketch the history of vulnerability thinking. In section 3, we then present

the results of our vulnerability-and-space literature review and our observations on the role of space in vulnerability research. In the fourth section, we argue that vulnerability thinking can benefit from a more systematic recognition of the four key socio-spatial tropes. The benefits of a spatially explicit vulnerability analysis that cuts across a single spatial dimension are elaborated in section 5 by using the cases of labourers in the garment industry in Bangladesh and rural – or rather translocal – livelihoods in Thailand.

2. A brief history of vulnerability thinking

The concept of vulnerability has developed since the 1980s into a core analytical category for many different scientific disciplines (*Füssel* 2007). Geographers such as *Burton* et al. (1978), *Blaikie* and *Brookfield* (1987), *Michael Watts, Hans-Georg Bohle* and colleagues (*Watts* and *Bohle* 1993a; *Bohle* et al. 1995), and *Piers Blaikie*, *Ben Wisner* et al. (*Wisner* et al. 2004) have fundamentally shaped the concept. As a practice-oriented analytical tool, the vulnerability concept has been adopted by many national and multi-lateral organisations in the field of development, disaster risk reduction and climate change adaptation (*Vogel* et al. 2007). Vulnerability analysis focuses on the risk of reduced well-being of social actors in the context of stress and perturbations (*Moser* 1998). More specifically, *Bohle* (2007c: 12ff.) argues that social vulnerability should be considered in relation to the normative notion of human security in its broader definition, including the 'freedom from fear', the 'freedom from want', the 'freedom from humiliation, indignity and despair', and the 'freedom to act and to attain' (*Ogata* and *Sen* 2003; *Gasper* 2005). A reduction of social vulnerability thus means increasing levels of well-being and human security.

The conceptual core of vulnerability analysis is based on the double structure formulated by *Chambers* (1989: 1): "vulnerability […] refers to exposure to contingencies and stress, and difficulties in coping with them". There is thus an 'external' as well as an 'internal' side. Social vulnerability is a characteristic of people, which results from the interplay between these two sides (*O'Brien* et al. 2004: 2f.). It is, as *Downing* (2002: 375) remarks, a social phenomenon relevant to particular social groups, whose socio-economic position not only depends on class, race, gender, age, etc., but also on the functioning of society as such (*Wisner* et al. 2004: 12). A dynamic and process-oriented vulnerability analysis is interested in the nature, distribution and causes of vulnerability and traces the question of when, how and why a person is vulnerable. In the early phase of vulnerability research a structural and political economic reading of vulnerability dominated. *Watts* and *Bohle* (1993a: 44), for example, put a strong emphasis on the "historically contingent and socially specific distribution of livelihood resources, capabilities, choices and constraints among agents" and thus the distribution of power and resources was seen as the key determinant of vulnerability. Since the late 1990s, a rather actor-oriented interpretation of social vulnerability in form of livelihoods analysis has become more popular among scholars (*Krüger* 2003, *Bohle* 2007c, *Sakdapolrak* 2014). Social practices, interests, perceptions, capabilities and adaptation strategies – or in short, the agency – of vulnerable individuals, households or communities were now at centre stage (*Bohle* 2011; *Bercht* and *Wehrhahn* 2010). Vulnerability was thereby conceived to be "embedded in social and environmental arenas, where human security, freedoms and human rights are struggled for, negotiated, lost and won" (*Bohle* 2007c: 9).

Conceptually, it has been a challenge to address the relation between structure and agency that is inherent in vulnerability and livelihoods research in a balanced and nuanced way (*Bohle* 2001, *Tröger* 2004, *McLaughlin* and *Dietz* 2008). Several scholars therefore drew on *Bourdieu's* Theory of Practice for a concise analysis and, indeed, a theory of vulnerability, which is sensitive to the distribution of power between individuals, households, communities and the broader society without losing sight of everyday practices and people's agency (*Dörfler* et al. 2003; *de Haan* and *Zoomers* 2005; *Bebbington* 2007; *Thieme* 2008; *Sakdapolrak* 2010; *van Dijk* 2011; *Etzold* 2013; *Sakdapolrak* 2014). By incorporating social theories, the conceptualisation of social vulnerability has thus become increasingly sophisticated over the past 20 years.

The spatial dimensions of vulnerability have, however, not received equal attention. We argue that this is a significant deficit. On the one hand, the production of vulnerability in the context of an increasingly globalised world is closely related to socio-spatial strategies, be they state's border regimes, capital's geographic movements or the global externalisation of environmental pollution, to name a few. On the other hand, vulnerable groups similarly rely on socio-spatialities to overcome risks and secure their livelihoods, e.g. the spatial diversification of risks through migration or the global mobilisation of social movements for

local causes. Therefore, vulnerability analysis needs to engage systematically with spatial theory. In order to set the basis for a more nuanced understanding of the socio-spatialities of vulnerability, vulnerability scholars' conceptualisations of space and their use of spatial vocabulary (e.g. place, space, scale) are therefore explored in the following section.

3. The socio-spatialities of vulnerability

3.1 The polymorphy of socio-spatialities

Space is a core concern of research in geography. Space and spatiality, as understood by geographers, have moved far beyond the simplistic notion of being defined as just a section of the earth's surface or a three-dimensional container space, in which all material and human beings are situated. Geographers investigate diverse spatial dimensions, such as the functional relations between different places; spatial distance and proximity; uneven distributions in space; specificities, and meanings of a locality; borders that delineate territories; geographical scales; and spatial imaginations and representations of space. Current understandings of space in human geography are based on three major assumptions: First, space is socially constructed and thus always open and in the making. People are 'making' specific geographies and the socially produced spatial orders, in turn, 'shape' our societies, economies, cultures and the natural environment. Second, space is relational and thus made through the "sum of our relations and interconnections" (*Massey* 2005: 184). And third, space is subject to a multiplicity of perceptions, appropriations and representations (cf. *Massey* 2005: 9ff.; *Harvey* 2006: 121ff.; *Weichhart* 2008: 75). Nevertheless, discussions on space and spatiality often remain abstract, sometimes even "abstruse" – as some commentators (cf. *Jessop* et al. 2008: 389) point out – with little benefit for empirical interrogations that are of great importance for vulnerability analysis. Furthermore, during each "short intellectual product life cycle [of] key social-spatial concepts" (*Jessop* et al. 2008: 389), a one-dimensional focus on one specific spatial relation prevails. This overemphasis on certain spatial categories leads to the negligence of others and creates blind spots. In order to overcome this, *Jessop* et al. (2008) propose a spatial approach that focuses on the interrelation between multiple forms of spatialities – or spatial "polymorphy". We argue that *Jessop* et al.'s approach offers a systematic and comprehensive way to analyse the socio-spatiality inherent in vulnerability. The four key socio-spatial relations highlighted in the approach are: place, network, territory and scale.

Place is not understood as simply points on the earth's surface or a static and bounded entity. Place is conceived of in its relational character as dynamic and constituted through linkages to the outside. According to Massey, places are "articulated moments in networks of social relations" (*Massey* 1999: 22) – meeting places where people interact and sites where social practices, economic exchanges and political negotiations are realised. Places are therefore linked through social practices of people. The uniqueness of a place stems from its history, or more precisely, from a specific trajectory of influences and interrelations – connections and disconnections – that have given it its present shape and meaning. A place inevitably changes, but the direction of this change is open, dependent on the connections yet to be made (*Amin* 2002: 391f.; *Massey* 2005: 67f.).

Networks as a structuring principle of the social world have gained importance in the course of globalisation and the increase in scope, quality and speed of connections across space (*Amin* 2002: 390ff.; *Castells* 2000: 440ff., *Murray* 2006: 51f.). Networks create a relational space. Nonetheless, each network has a distinct physical structure, as specific places are connected with one another by multiple threads. This structure has been brought into being by the social practices of people; at the same time the network provides a structure for these practices (*Steinbrink* 2009). Understanding the effect of spatialities through the lens of networks implies a focus on the meso-level of network relations as an explanatory factor (*Emirbayer* and *Goodwin* 1994; *Fuhse* and *Mützel* 2010). Due to the different nature of these relations, different networks have different functions and thus also different geographies.

Territory commonly refers to an area on the earth's surface delineated through borders over which an actor exercises control. Territory has long been considered as a self-evident, given entity that functions as a backdrop of social practices (*Dahlman* 2009; *Elden* 2010: 800). The relational character of territory is acknowledged through the notion of territoriality as an "attempt by an individual or group to affect, influence or control people, phenomena and relationships by delimiting and asserting control over a geographic area" (*Sack* 1986: 19). Territorialisation can be considered as a "distinctive mode of social/spatial organisa-

tion" (*Elden* 2010: 810f.), which involves a broad range of political-strategic, technological, legal and social practices that reflect existing power relations (*Elden* 2010, *Bassett* and *Gautier* 2014). The specific structure and modes of regulation within a territory is the historic product of societal negotiations. In turn, territories structure social relations fundamentally.

The concept of spatial scale encompasses various meanings: scale as size and scope, levels and spheres of influence, and the boundaries of socio-spatial entities (*Gibson* et al. 2000). According to *Herod* (2011: 14), scale can be considered as a "substantive social product" that has a material basis and real consequences for social life. Scale can be furthermore considered as a political construct through which socio-spatial processes can be structured and circumscribed. Scales are thus not naturally given, but always 'in-the-making'. A key question then is how power relations shape processes of scaling "through which multiple spatial units are established, differentiated, hierarchised and [...] reorganised and recalibrated in relation to one another" (*Brenner* 2008: 600, cited in *Herod* 2011: 27). The idea of the politics of scale points to the different scope of political or economic power and to the real effects of boundary constructions and categorisations into hierarchical orders.

3.2 Socio-spatialities in vulnerability research

Research about people and places that are "at risk" of disasters plays a fundamental role in vulnerability research (*Wisner* et al. 2004; *Felgentreff* and *Glade* 2008). Many geographers highlight the "geographies of vulnerability" (*Hewitt* 1997: 164ff.; *Bohle* 2007a) and the multiple relations between vulnerability and space in their contributions (e.g. *Watts* and *Bohle* 1993a; *Cutter* 1996, *Findlay* 2005; *Philo* 2005; *Bohle* 2007b). But how have they conceptualised spatial dimensions of vulnerability and how have the four key socio-spatial relations described above been addressed and conceptualised? By utilising *Jessop* et al.'s (2008) conceptual lens and the key social-spatial relations identified by them, our review of the literature over the past 20 years uncovers the different ways socio-spatial relations have been conceptualised:

The first notion of space in vulnerability research that we identified is the understanding of space as a taken-for-granted section of the Earth's surface in which people's vulnerability manifests itself. The non-consideration of complex socio-spatial dimensions was particularly widespread in the early phase of vulnerability research in the 1970s and 1980s. In hazards research, scholars first simply focussed on the 'sites of catastrophe'. Vulnerability has been described as being "locationally driven" and primarily as a function of people's "proximity to the source of the threat" (*Cutter* 1996: 538). Such exposure or biophysical vulnerability studies focussed on the magnitude, rapidity, duration and frequency of hazardous events, on the numbers of affected people, and on the extent of damage and loss at a particular place, which was simply viewed as an absolute "container space" (*Burton* et al. 1978; *Hewitt* 1997). *Wisner* et al. (2004) do, for instance, apply an essentialist understanding of absolute space when they define hazards as "natural events that may affect different places singly or in combination (coastlines, hillsides, earthquake faults, savannahs, rainforests, etc.) at different times"(*Wisner* et al. 2004: 49). Accordingly, a disaster unfolds at specific hazardous places, which are "occupied" by a population at a particular point in time: "the risk of disaster is a compound function of the natural hazard and the number of people (...) who occupy that space and time of exposure to the hazard event" (*Wisner* et al. 2004: 49). Vulnerable people are thereby largely defined by their physical exposure to a potential hazard. *Liverman* (1990: 29), for instance, stated that "people at risk live in areas of high hazard magnitude and frequency". As follows, vulnerability maps that represent the absolute spaces, at which people are particularly exposed to specific risks, are an important element of disaster risk reduction strategies, famine early warning systems and spatial planning as well as an academic instrument in livelihood studies and vulnerability research. Vulnerability maps can reveal the uneven exposure to a natural hazard, such as a flood, at different spatial scales and can thereby also become powerful tools to communicate risk and vulnerability to the public (*Preston* et al. 2011, *Römer* et al. 2012). Most often, vulnerability maps are confined to a specific local area, such as a specific riverbank or a mountain slope, or a designated local territory, such as a municipality. With the advancement of monitoring and mapping techniques, in particular through Geographic Information Systems, vulnerability maps were also developed for other spatial scale levels; for instance, riverine catchments, state provinces, nation-states and whole regions (*Römer* et al. 2012: 188). While vulnerability maps at first solely focussed on the distribution of biophysical risks and the exposed populations in absolute space, expanded

vulnerability models later integrated the 'internal' aspects of vulnerability, namely the sensitivity and adaptive capacity of exposed groups and communities. Using detailed maps of a section of the Earth's surface, "net vulnerability" to a specific threat can then be the output of a comprehensive vulnerability mapping (see *Preston* et al. 2011: 187).

The second way vulnerability research addresses socio-spatialities is through the spatial category of place. Place-based vulnerability assessments have become dominant in the scholarly debate on vulnerability in the 1990s, and remain highly influential today. In hazard research, the sources of risks or the drivers of people's vulnerability as well as the disaster event and its effects have predominantly been seen through the prism of 'the local'. *Susan Cutter* has been one of the most prominent advocates of a so-called "Hazard of Place" model of vulnerability, in which vulnerability was conceived as "both a biophysical risk as well as a social response, but within a specific area or geographic domain. This can be geographic space, where vulnerable people and places are located, or social space, who in those places are most vulnerable" (*Cutter* 1996: 533). The model recognised the "nested or contextual arrangements" that shape the vulnerability of a place, but nonetheless set its explicit focus on specific localities, because "it is place that forms the fundamental unit of analysis for any geographer" (*Cutter* 1996: 536). Such a focus on place went well with more actor-oriented research designs that dominated vulnerability studies in between the mid-1990s and early 2000s. Scholars from the school of livelihood studies, in particular, concentrated on the analysis of vulnerable people's coping practices and everyday lives at specific "unsafe", "fragile", or "unstable" places (*Bohle* et al. 1993; *Moser* 1998; *Tröger* 2004; *van Dillen* 2004; *Fünfgeld* 2007; *Braun* and *Aßheuer* 2011; *Schütte* and *Kreutzmann* 2012; *Willroth* et al. 2012). While many of these studies were highly nuanced and theoretically grounded (in terms of their application of social theories), they nonetheless were inclined to focus solely on the one place where vulnerability is experienced by people. The historical and spatial relations that contributed to the production of vulnerability and that had to be investigated outside that one place were often neglected, or not considered systematically. "Yet while the importance of place-specific meaning in vulnerability cannot be underestimated, the vulnerability of individuals and communities is not bound by geography" (*Eakin* et al. 2009: 398). Rather, power relations and processes of social differentiation at particular places influence "local" people's differential exposure and sensitivity to hazards and thereby shape an unequal social geography of vulnerability (*Watts* and *Bohle* 1993a: 48). In a similar manner, several authors have investigated the urban poor's vulnerability at particular places through the lens of *Bourdieu's* theory of practice as a result of people's struggle over positions in a field of unequal power relations (*Deffner* 2007; *Sakdapolrak* 2010; *Etzold* 2013). Other authors have pointed out that different people observe and evaluate the same 'objective risks' at a place differently and that they give different meanings and value to a place and landscapes on the basis of their own experience, knowledge and cultural norms (*Alessa* et al. 2008). Place-based identities, subjective perceptions of risk and uncertainty, and collective constructions of safe or secure places are thus considered to be fundamental elements of "the geographicalness of disaster" (*Hewitt* 1997: 41) or the "landscapes of risks" (*Müller-Mahn* et al. 2013: 205).

Networks or, more generally, a relational understanding of space are a third way how the socio-spatialities of vulnerability have been addressed. Multiple authors have argued that the 'sites of disaster' must not be seen in isolation, but can only be analysed in their connections to other places, and in their particular histories. *Hewitt* (1997: 41) stated convincingly that "hazards represent threats to the relations of society and habitat, to the practices and interactions that link human life over the Earth". Damaging events may turn into disasters because of disruptions in existing spatial orders and because networks of control and support have been cut-off or torn-apart. Besides such a functional perspective on networks and "life lines" between places (*Hewitt* 1997), a relational understanding of places and peoples at risk emerged primarily because the root causes of vulnerability were searched for. Studies with a more structuralist approach drew on insights from political economy to explain people's vulnerability to hazards or hunger on the basis of underlying social and political conditions; for instance, unequal distributions of land, resources and life chances that had emerged historically through "the social relations of production in which individuals and households participate" (*Watts* and *Bohle* 1993a: 52) – in other words: through class relations. If we look at the pressure and release model by *Wisner* et al. (2004), it becomes clear that the "root causes" and "dynamic pressures" that give rise to people's "unsafe conditions" reflect a different spatiality than the disaster as such. "The root causes of people's vulnerabil-

ity can be 'spatially distant' (arising in a distant centre of economic or political power), temporally distant (in past history), and [culturally] distant" (*Wisner* et al. 2004: 52) from the places where vulnerability actually takes shape. A relational understanding of space also manifests itself on the 'internal side' of vulnerability. Vulnerable actors' coping practices are often based on social networks across space; they can thus also have unexpected consequences 'elsewhere'. Numerous studies have shown that post-disaster coping strategies are not solely based at one place. People who have been affected by a disaster often rely heavily on their local and translocal social networks in order to recover from the impacts of a disaster. They also seek new livelihood opportunities in other places. Post-disaster migration, for instance, might not only help affected families in their recovery, but also enable them to better adapt to recurring risks in the long run. A disastrous situation might thereby initiate spatial mobility and pave the way for new connections between places. Social networks and translocal spaces are then established through adaptive practices (*Adger* et al. 2002; *Etzold* et al. 2014; *Massmann* and *Wehrhahn* 2014; *Sakdapolrak* et al. 2014). With their framework of "nested vulnerability", *Eakin* et al. (2009) even go one step further. They argue that the "vulnerability of specific populations in different geographic contexts are essentially linked in space and time not only by cause but also through local responses to global changes" (*Eakin* et al. 2009: 400). By using the case of smallholder coffee farmers in Mexico and Vietnam – both positioned in the same global market space – as an example, they show that adaptation actions in response to economic turbulence and natural hazards at one place can have indirect impacts on and often unexpected consequences for people at another place. The term "teleconnection" thereby denotes the multiple linkages, feedback mechanisms and transfers of risks across spaces which reflect the complexity and uncertainties of adaptive responses at one place and their potential translocal effects on the livelihoods and welfare of distant households (*Eakin* et al. 2009: 399).

A fourth way in which socio-spatialities are addressed is through the scalar dimension of vulnerability. Summing up the state of research in the early 2000s, *Krüger* (2003: 6) noted that any investigation into the livelihood structures of vulnerable groups must be carried out multi-sectorally, i.e. touching social, economic, political, ecological questions etc., and across multiple scale levels, i.e. from the local place at which people are rooted through a regional or national meso-level to a global macro-level (see e.g. *Neuburger* 2000). In the same year, an influential article by *Turner* et al. (2003) argued for a place-based vulnerability assessment that considers the specific "coupling" of human and environmental systems and the scalar interactions between local, regional and global processes. Multi-scalar "chains of explanation", as they have been fruitfully applied in political ecology, can thereby be considered as important tools in vulnerability analyses. Some of the more recent studies continue along the lines of previously established relational analyses and address the "double exposure" (*O'Brien* and *Leichenko* 2000) of vulnerable groups to multiple localised risks that originate in 'distant' places and that reflect ecological or political-economic dynamics across different spatial scale levels. *Leichenko* et al. (2010), for instance, investigated the simultaneous exposure of people to the global financial crisis and to climate change. They stressed that both "climate change and globalisation are weaving together the fates of households, communities and people across all regions of the globe. Both processes are enhancing *connections across space and time*, such that actions taken in one location have increasingly visible effects on other locations, often in ways that are hard to predict. Both processes are seen as creating not only new opportunities but also growing risks and increasing uncertainty" (*Leichenko* et al. 2010: 964, emphasis added). The "double exposure" framework has contributed substantially to fully establishing a relational understanding of a global networked space, in which material flows, capital transfers, personal interactions and ecological feedback loops connect places with one another across multiple scales in the previously largely locality-oriented vulnerability literature. This does not imply that investigating places is no longer of importance. In contrast, as 'global' processes are always "rooted in places" (*Leichenko* et al. 2010: 965), people's vulnerability at certain places fundamentally rests on the local specificity of connections and disconnections across different spatial scales and thus on the position of a place in relational networks (see also *Massey's* definition of place above). According to *O'Brien* and *Leichenko* (2000: 226) "globalisation accentuates, rather than erodes, national and regional differences" and is thereby "exacerbating existing patterns of uneven development" between and within world regions.

A fifth way scholars have thought about vulnerability and space is through the notion of territoriality. Even though territoriality is not explicitly addressed in most studies, political structures, power relations

and their respective spatial manifestations have often been at the core of critical scholarship in vulnerability research. *Watts* and *Bohle* (1993a: 53), for instance, argued that from the perspective of empowerment approaches, vulnerability must be understood in "state-civil society relations seen in political and institutional terms" and can be defined "as a lack of rights" (*Watts* and *Bohle* 1993a: 49). Vulnerable agents are then those who do not have formal property rights or guaranteed citizenship rights in a nation-state, those who are (for whatever reason) not able to legitimately claim their rights, and those who are structurally excluded from decision-making processes. In short: people at specific places are vulnerable because they lack political power in a territory in which those in power are either not willing or able to grant rights and human security to all its citizens. The contested relations between nation-states and their citizens show clearly in studies of everyday life and livelihood struggles of vulnerable groups that incorporate a governance perspective (*Devas* 2002; *Corbridge* et al. 2005), as exemplified by case studies in Delhi (*Zimmer* and *Sakdapolrak* 2012) or Dhaka (*Etzold* 2013; 2015). How both territoriality and citizenship are constantly negotiated is shown most drastically in studies of violence, war and conflict. In his studies in Sri Lanka, *Bohle* (2004, 2007b) was particularly interested in places as 'sites of struggle', territories in the sense of 'areas of control and contest' and the ever-shifting frontlines and spatial arrangements of security regimes. During a (civil) war, the key question for those groups who are exposed to warfare is how one can stay alive and continue to sustain one's livelihood despite violent practices at particular places. Another question has been how the violent distinctions between different groups in conflicts ('us' vs. 'them') are manifested in strategic imaginations of space and how spatial discourses of 'our' and 'the enemy's' lands or secure and insecure territories shape people's everyday life (*Korf* 2003; *Bohle* 2004, 2007b; *Bohle* and *Fünfgeld* 2007). One conclusion of such research into the geographies of violence has been that people's experience of vulnerability and violence in highly contested arenas reflects the local "geographies of power, too, in the sense that people are 'placed by power'" (*Bohle* 2007b: 145).

4. Discussion: revisiting the socio-spatialities of vulnerability

The review of the vulnerability literature through a Jessopian lens shows that multiple spatial categories are implicitly addressed and that "space matters" in vulnerability research. Space is not only considered as an object of study in the sense that place-based vulnerability assessments investigate the character and structure of the 'sites of catastrophe' at which people's multiple vulnerabilities manifest themselves. Whilst

Table 1 The polymorphy of socio-spatialities in vulnerability research

	External side of vulnerability: exposure and sensitivity	**Internal side of vulnerability: coping and adaptation**
Place	Site-specific materialities and human-environmental entanglements producing "objective risks" and "vulnerable places"; social differentiation at place; place-based identities; symbolic value of places etc.	Site-specific materialities and human-environmental entanglements producing no "objective risks" and "safe places"; "local" knowledge and embeddedness in places as resources for adaptation; sense of belonging etc.
Networks	(Dis)connections and systematic, yet not direct, teleconnections between places; flows of capital, goods, ideas, people between hubs (e.g. global production networks, migration, refugee movements)	Translocal connections made by vulnerable agents; social capital; supportive place-to-place flows (emergency aid, reconstruction funds, remittances etc.); travelling people / ideas that evoke transformation
Territory	(Exclusion from) citizenship; identity politics (us vs. them); Nation-states and borders; private land ownership; gated communities; export-processing zones; war zones and frontlines	Preparedness, protection and post-disaster support of citizens (early warning, welfare, emergency aid); political and labour market participation; "secure territories" or "humanitarian zones" in a war
Scale	Various entry points for analysis; local-to-global-to-local feedback loops; socially produced spatial scale levels (e.g. administrative units) and their effects	Mobilisation of funds, interest, political support across scalar levels; organisation and allocation of emergency aid or development funds through scalar logic

different spatial turns have clearly left their marks on the vulnerability research community over the past two decades, only a few scholars have engaged actively with spatial theory. Most authors rather focussed on transferring key ideas of vulnerability thinking to new fields of study and 'fine tuning' vulnerability concepts; for instance, by integrating social theories as conceptual foundations. To overcome the "spatial blind spots" in vulnerability studies, we call for an explicit engagement with spatial categories in vulnerability research. Additionally, we suggest the integration of different categories of spatiality into the Jessopian framework, as it enables the systematic and reflective analysis of the interrelations of different spatial dimensions – in particular place, network, territory, and scale – in the production of vulnerability. *Jessop* et al. (2008: 392) have argued that "sociospatial theory is most powerful when it a) refers to historically specific geographies of social relations; and b) explores contextual and historical variations in the structural coupling, strategic coordination, and forms of interconnection among different dimensions of the latter". In line with this argument, we thus plead for a more systematic recognition of the polymorphy or multi-dimensionality of socio-spatialities and question the privileging of a single socio-spatial perspective that often seems to be immanent in vulnerability scholarship. Place-centrism, network-centrism, scale-centrism or methodological territorialism; each of these perspectives has its specific strengths and weaknesses, but none can be seen as the way forward in vulnerability scholarship. Instead, place, networks, territory and scale are mutually constitutive and relationally intertwined dimensions of socio-spatialities that co-produce vulnerability.

Table 1 might serve as a heuristic tool for geographical vulnerability studies, as it links spatial theory with a key element of vulnerability thinking – the distinction between the "external" and "internal" side of vulnerability (*Chambers* 1989; *Bohle* 2001). When we focus on the external side of vulnerability, the analysis centres on structural processes that contribute to the production of "spaces of vulnerability". Of course, it is still necessary to map the *places* where people are exposed to objective risks and to investigate how disasters unfold at particular places. These places can, however, not be seen as taken-for-granted containers. They are rather products of complex entanglements between society, politics, economy and nature that have become 'vulnerable places' for particular people through other people's practices. Site-specific materialities are thus as important as social differentiation processes that manifest themselves at a place and the different meanings and values that this same place can have for different actors. Investigating the historically contingent and spatially rooted causation of people's vulnerability at certain places leads us to the connections and disconnections of that place to others. From a *network* perspective a vulnerable place might serve a specific function in a broader network that spans multiple places in between which various flows of capital, goods, people or ideas circulate. A 'local' disaster might be the direct result of a 'weak' position of that place in a network (see case study on Dhaka's garment workers) or its more indirect teleconnections to other places. In other cases, the effects of being cut off from translocal circulations – as 'lifelines' are destroyed – might be worse than the 'local' impacts of the disaster. The notion of *territory* highlights the fundamental political questions of the organisation and control over space and, in essence, the relation between a nation-state (or another socio-spatial form of organisation) and its 'own' citizens and those actors 'outside' of that territory. Territorial conflicts, processes of re-territorialisation, bordering, spatial exclusion and segregation are certainly some of the most significant structural drivers of social vulnerability in our times. In vulnerability studies the notion of *scale* highlights questions of methodology. What are the units (individuals, households, neighbourhoods, cities, nations?) and where is the entry point for our analysis (at the 'local' level, by looking at 'regional' patterns or 'global' trends?)? And how can we assess interactions across multiple scale levels? As with other spatial tropes, a social-constructivist understanding of scale forces us to deconstruct taken-for-granted socio-spatial units, such as a household or a city, and ask how they are being produced, how they matter as relevant categories in vulnerable people's everyday life, and how we make use of these in vulnerability assessments.

Any vulnerability analysis is incomplete without investigating the 'internal' side of vulnerability. In line with the paradigmatic shift towards actor-centred approaches in development studies since the mid-1990s, vulnerable people's coping and adaptation practices, which they enact despite multiple 'external' constraints and shocks and which are thus seen as expressions of agency, have received prominent attention in vulnerability scholarship in recent years (*Bohle* 2007c). We argue that it is crucial to assess people's local knowledge, their spatial practices and their contestations of territories, networks or scalar relations

in order to understand the ways how people mitigate, cope with and adapt to risks, and how they thereby enhance their social resilience. First, as places are the result of people's appropriations of nature and the socially produced sites of social interactions, *places* can also serve as a resource for action. People's adaptation practices are fundamentally rooted in places. They assess risks and they plan ahead based on their local knowledge. A sense of belonging to a place can keep people in a vulnerable place and motivate them to enhance their resilience locally. Place-based *networks* are often the most fundamental resource that people who are deprived of material goods and financial means draw upon in a crisis situation (*Bohle* 2005; *Bebbington* 2007). Social capital might be even more important, if it is not restricted to a single place. People who are embedded in translocal networks of support – for instance, members of migrant households – are often less vulnerable to livelihood shocks at the place where they live than those people who are cut off from such networks. Whilst the inflows of money, goods and knowledge through multi-local networks can enhance the resilience of translocal households and evoke socio-economic transformations, new dependencies on sources from the 'outside' also create new translocal risks (*Moser* and *Hart* 2015). The *territorial* organisation of society can be seen as a benefit for vulnerable agents as protection against external threats: food aid, disaster preparedness and post-disaster relief are fundamental duties of nation-states. In terms of mitigation, coping and adaptation, problems do of course arise if nation-states cannot fulfil this duty (because of a lack of funds, dysfunctional state institutions etc.) or if certain social groups at specific places are purposely excluded from protection, welfare funds or emergency aid because they are not recognised as citizens eligible for state support. Not surprisingly, natural catastrophes do often go hand in hand with state crises or public protest. The actual human castastrophe is often triggered by the (lack of) adequate response of state agents. Raising awareness about a specific 'local' issue in a 'global' forum and the mobilisation of financial funds or political support across different political levels might serve as examples of how *scale* matters in relation to the internal side of vulnerability. Moreover, the global development landscape and the emergency aid industry are organised in a scalar logic. Multilateral organisations like the United Nations' World Food Programme, supranational organisations like the European Unions' Aid Programme (EuropeAid), and national organisations like the German Gesellschaft für Internationale Zusammenarbeit (GIZ) not only co-operate with nation-states in the Global South, but also with specific regions (federal governments) or municipalities. Accordingly, funds are moved up and down the scalar ladder.

5. Interlinking spatial categories for vulnerability analysis – an exemplification

In the following, we make use of two empirical case studies in order to show the strength of a polymorphic perspective to the socio-spatiality of vulnerability. The socio-spatial production of vulnerability – the external side – is further exemplified in a case study of garment workers in Dhaka, Bangladesh. The socio-spatiality of the 'internal' side of vulnerability or the use of spatial practices to cope with and adapt to risk and to enhance social resilience will be addressed in a case study from rural Thailand. The notion of highly differentiated, power-ridden and contested social fields, through which actors navigate, underlies both cases.

5.1 Networked and multi-scalar productions of vulnerability – Dhaka's garment workers

In November 2012, the garment factory Tazreen Fashions at the outskirts of Dhaka burned down – 112 people died. Half a year later, in April 2013, the collapse of a garment factory in Rana Plaza, also in Dhaka, killed 1,134 workers. The exploitative working conditions in the global textile industry, in general, and the vulnerability of garment workers in Bangladesh, in particular, has a distinct spatiality.

In Bangladesh, the production and export of textiles that changed the nation's role in the global economy started in the early 1980s and has gained importance ever since. In 2014, around four million people in 4,200 factories worked in garment factories. In the same year, the garment industry was worth US$ 25.5 billion (82 percent of all exports), with exports mainly going to the European Union and the United States (BGMEA 2016). The rise of the garment industry has intensified rural-urban migration and sped up urbanisation in Bangladesh. In the early 2000s, 85 to 90 percent of garment workers were women; and 80 to 98 percent of female garment workers had migrated to Dhaka from rural places (*Dannecker* 2002; *Kabeer* and *Mahmud* 2004). The garment fac-

tories are predominantly situated in and around the capital city and are crucial drivers of the re-organisation of the mega-urban space. The fenced-off 'Export Processing Zones' (EPZ) that have been created for the textile industry at Dhaka's outskirts can be considered as a specific form of *territorial* organisation. The EPZs were created in order to enhance industrial employment through foreign direct investment, to increase foreign exchange earnings and to enable technology and knowledge transfer. The investors were freed (for a certain period) from tax burdens and could develop their own rules and safety standards, as controls from state or international organisations were minimal. Despite a general ban on trade unions in the EPZ, the wage levels, working conditions and employment relations in the more 'modern' factories in the EPZ are nonetheless often better than in factories and workshops outside the EPZ (*Kabeer* and *Mahmud* 2004).

The garment workers who were killed in the fire of the Tazreen Fashions factory and in the collapse of the factory at Rana Plaza – mostly young women – were not simply at the wrong *place* at the wrong time. Of course, their places of labour as such were not safe. Most garments factories in Bangladesh are crowded, with noisy and dusty halls in which hundreds of predominantly female 'operators' are working side-by-side at their sewing machines, whilst male controllers make quality checks of the finished products and male supervisors oversee the whole production process. A gendered division of labour is part of the spatial organisation of the workplace (*Dannecker* 2002: 85ff.). Safety standards that could reduce fire risk, for instance, are hardly applied in Bangladesh's garments factories (*Wadud* et al. 2014). Fierce competition in the garment industry results in the rise of competitiveness and increasing production targets at the expense of the safety and health of the workers. In the case of Tazreen Fashions, security personnel had forced the workers to continue their work despite the fire alarm. When the fire spread rapidly, the workers got trapped inside the building because staircases and emergency exits were blocked by material and machinery and because doors were locked and windows barred – the garment factory itself was an enclosed *territory* that the workers could not escape. The multi-story building in Rana Plaza had collapsed due to the weight of the machinery. The building had been constructed and extended without adhering to building standards. A few days before the collapse, governmental officials had already detected cracks in the concrete structure in a routine inspection. But the inspectors were paid off; the cracks were ignored. The production of clothes for international markets had to remain running. In both cases, the factory owners who were responsible for the buildings and the safety of their workers were arrested, and later prosecuted.

The fire and the collapse do, however, point to a deeper causation of the workers' vulnerability. Today's apparel industry is a prime example of "global production *networks*", which consist of "interconnected functions, operations and transactions through which a specific product or service is produced, distributed and consumed [... and which] extend spatially across national boundaries and, in so doing, integrate part of disparate national and subnational *territories*" (*Coe* et al. 2008: 274, emphasis added). The places in the global 'fast fashion' industry are connected to one another through the flows of capital, goods (cotton, fabric, clothes etc.), information and people. Power and capital is concentrated in the hands of large brands such as H&M, Zara, Nike or Disney, who compete fiercely over market shares and who push suppliers and subcontracted manufacturing units into quicker and cheaper production, which inevitably leads to worse labour conditions for the garment workers in the periphery (*Dicken* 2007; *Tokatli* 2008). Addressing the Rana Plaza tragedy, *Munir* (2014) vividly sums up the 'uneven geography' of labour and consumption:

> "Rana Plaza is merely a symptom of a deeper malaise: global production networks in which consumers in affluent countries continuously dress themselves in new robes at the expense of invisible, desperate workers in far-away places".

The vulnerability of the garment workers thus unfolded at particular places, but was networked in its causation. Vulnerability in this case is place-based, but has territorial dimensions at different *scales*. Supranational cooperation in the World Trade Organisation (WTO) sets the conditions for the export and import of goods, such as textiles; nation-states set the economic structures and rules within their territory and have the responsibility to protect their citizens; and factory builders and owners design and manage the factories – as territorial containers – in a certain way that better allows the control over workers and enables quicker and more profitable production. The workers, the security guards, factory owners, politicians and NGOs in Bangladesh as well as the buyers and managers of big brands and the consumers, NGOs and the media in the Global North live and work at differ-

ent places that are separated by spatial distance and territorial borders. They are nonetheless intimately connected in transnational production networks and thereby also situated in one global social field.

Accordingly, local measures to enhance workplace security and wage levels in Dhaka are not sufficient to reduce the vulnerability of garment workers. Geographical research has shown that protests for workers' rights and social justice must also make use of the spatial structure of the global fast fashion industry. Workers can organise "place-based campaigns", for instance, by laying down work in local garments' factory or by blocking crucial infrastructural nodes of transnational production networks (*Lier* 2007: 825). Moreover, activists, labour unions and non-governmental organisations from Bangladesh can also "jump scale" and join in global campaigns (*Lier* 2007: 825; *Ackerly* 2015). The aim then is to raise the awareness of companies, consumers and decision-makers in the Global North about their role in the production of vulnerability of some people in distant places.

5.2 Socio-spatialities of coping and adaptation in rural Thailand

In 2015 and 2016, Thailand faced one of the worst droughts in decades, affecting the livelihoods of millions of peasants in rural areas (*Thaiturapaisan* 2015, 2016). Even though the country has experienced a far-reaching socio-economic transformation in the past 50 years, in 2013 employment in agriculture still accounted for 43 percent of total employment (World Bank 2016). Agricultural production, which is dominated by small-scale family farms engaged in the cultivation of cash crops, has experienced a continuous decline over the past 30 years due to decreasing access to natural resources (*Baker* 2010). Regularly, adverse climatic events such as droughts and floods put additional pressure on rural households' livelihood security. Thus, rural livelihoods in Thailand are highly diversified, including on- and off-farm diversification and migration. Internal as well as international migration has been a common strategy for rural populations to cope with and adapt to the seasonality of agricultural production, land pressure and economic crisis (*Huguet* and *Chamratrithirong* 2011). Rural places are deeply enmeshed in networks of social relations of migrants and non-migrants, which span across scales.

For the understanding of the internal side of the vulnerability of rural households – i.e. their capacities to cope and adapt – several case studies conducted in rural north and northeast Thailand (*Sakdapolrak* 2008, *Sakdapolrak* et al. 2014) have shown the importance of considering socio-spatiality. Of particular importance is the consideration of the interlinkages of places and networks as structuring principles for vulnerability. This interlinkage is captured and synthesised in the concept of translocality (*Brickell* and *Datta* 2011, *Greiner* and *Sakdapolrak* 2013a, 2013b).

A polymorphic approach towards vulnerability helps to overcome risks of considering rural places as isolated and confined entities and to understand the agency of people in forming places and networks and utilising them as resources in times of risks. Focussing on the mutually interrelated character of place and network helps to capture the spatiality of coping and adaptation in a systematic manner. The cases from Thailand show that rural *places* are nodal points of social relations of exchanges and transfers. 'The rural' is (re-) produced and transformed through spatial social practices of migrants and non-migrants. This embeddedness in social networks is most conspicuously exemplified by the flow of financial remittances and the transformative character for places. In a study village in northern Thailand, 28.1 percent of all households received financial remittances from migrated household members at the time of the survey, while nearly 50 percent of households had received financial remittances in the past (*Afifi* et al. 2016, see also *Reif* 2012; *Sakdapolrak* et al. 2014). Financial flows enhance the coping and adaptation capacities of households, as financial buffer capacities are increased and income loss risks are diversified. Furthermore, pro-active strategies, such as agricultural production diversification and intensification are pursued (*Sakdapolrak* et al. 2014). *McKay* (2005) has coined the term "remittance landscapes" to describe the transformative influence of remittances on the places of origin of migrants.

The understanding of the internal side of vulnerability in this context requires the consideration of the (re-)production of socio-spatial *networks*. In the case of international migration, one case study from northeast Thailand pointed to the role of institutionalised networks – the so-called migration industry – as inducing and enabling flows of people across countries' national territories (*Sakdapolrak* 2008). In times of multiple crises – such as the co-occurrence of a severe economic and drought crisis in the mid-1990s – these institutionalised networks enabled

rural households to swiftly pursue international migration as an adaptation strategy. Moreover, migration and other social practices that connected places of origin and destination (e.g. exchange of information, resources) led to the emergence of non-institutionalised informal networks through which additional migration movements and flows of resources and information were facilitated (*Sakdapolrak* 2008).

The consideration of territory and scale as socio-spatial categories complements the analysis of coping and adaptive options of rural households in Thailand. *Territoriality* of nation-states includes their attempts to regulate and control the movement of people into their territories. The destination of movements and the changes thereof are steered by changing modes of territorialisation – decisions of states to open and close their borders for people with a certain citizenship, gender, ethnicity or socio-economic status. As shown in the case study from northeast Thailand (*Sakdapolrak* 2008), the emergence and decline of certain destinations of international migrants – such as the shift from the Middle East to East and Southeast Asia – is influenced by the decisions of respective destination countries to open and close their labour markets for the Thai workforce. Therefore, the opportunity to make a living and transfer resources back to the place of origin is linked to territoriality. While states seek to enforce their control over their territories, the scale transgressing nature of migration and local-to-local scalar practices blur the rigidity of spatial boundaries and hierarchical *scales*.

6. Conclusion: towards a polymorphic perspective in vulnerability research

"Vom Raum zum Menschen" (*Bohle* 2011: 746). In his last geographical textbook contribution *Hans-Georg Bohle* outlined the evolution of research in development geography, in general, and vulnerability research, in particular, with this short sentence. The sentence indicates what he considered to be the core concern of the sub-discipline: a people-centred understanding of vulnerability. A careless reader might misinterpret *Bohle's* attention as placing less importance on spatial dimensions in favour of social actors and social practices; but the contrary is the case. His research has been driven by the search for the understanding of the "spaces of vulnerability" (*Watts* and *Bohle* 1993a, 1993b) and he understood these spaces invariably in their socially constructed nature. The sociospatiality of vulnerability has thus been at the core of his scholarship (see e.g. *Bohle* 1981a, 1981b, 1985, 1988, 1993, 2007a, 2007b; *Bohle* and *Fünfgeld* 2007; *Homm* and *Bohle* 2012).

In our paper we have explored the question what is the role of space in vulnerability research. We have reviewed the literature on vulnerability and highlighted the ways different spatial dimensions have been addressed. Following the socio-spatial categorisation suggested by *Jessop* et al. (2008), we have shown that different "spatial turns" are visible in the history of vulnerability thinking. At first, space was not conceptually considered, but taken for granted as a section on the Earth's surface. Then, a body of scholarship emerged that was more sensitive to the specific sensitivities of very particular groups at very particular places. The vocabulary of spatial scales and networks thereby entered the vulnerability debate and with it the question of how both are socially produced. Last but not least, scholarship on vulnerability to violence once more highlighted the significance of citizenship, territorialisation and 'geographical imaginations' as a subject of contestation in itself and as a significant driver of people's vulnerability. Based on the observation that different spatial categories have only been addressed implicitly, we argue that there is a need to engage more systematically and explicitly with spatial theory in vulnerability research. We propose *Jessop* et al.'s (2008) approach, which focuses on the interrelation between multiple forms of spatialities – or spatial "polymorphy" (*Jessop* et al. 2008) – as a way forward. A polymorphic vulnerability analysis should make use of the conceptual strengths of each spatial trope in order to investigate the dynamic unfolding of disasters and actors' experience of vulnerability, to map the places where people are exposed to risks, and to better understand the historically and spatially rooted causation of people's vulnerability. A spatial perspective can also enable us to assess people's spatial practices and contestations of territories, networks or scalar relations whilst they seek to mitigate, cope and adapt to risks, and enhance their social resilience. A critical geographic perspective requires that we do not take any spatial trope for granted, but rather deconstruct the place-makings, (dis)connections, territorialisations and scalar relations that shape or exacerbate people's vulnerability.

We would like to conclude with a brief note on what lies ahead. We see the Jessopian approach and the interlinking of the four socio-spatial categories as the

starting point of a systematic engagement of vulnerability research with socio-spatiality. Following the critical remarks from *Casey* (2008) we consider the four spatial tropes – place, network, scale and territory – not as all-encompassing for the understanding of spatial dimensions, but as an image of the current state of the art that is subject to change. In order to further develop the polymorphic perspective, we have to assess the explanatory potential of alternative socio-spatial categories such as "field", "arena", or "mobility", among others, which have been taken up by vulnerability research in the past (e.g. *Sakdapolrak* 2010; *Etzold* 2013; *Sakdapolrak* et al. 2014; *Etzold* 2014). The continuous empirical observation of spatial processes and reassessment of the explanatory power of existing and new spatial concepts in order to decipher empirical phenomena is the type of geographical scholarship that *Hans-Georg Bohle* always envisaged.

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