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🏆 *reviewed paper*

The reification of resilience and the implications for theory and practice

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1 ABSTRACT

A review of academic and grey literature in disaster risk reduction, construction, urban planning and architecture shows that the term 'resilience' has been increasingly adopted to describe an ethical posture towards interventions in the built environment. Policy makers in the United Kingdom (UK) have followed this trend and increasingly adopt the resilience language in policy and Government agendas. However, a detailed examination of over 20 UK policy documents and 19 interviews with stakeholders involved in the planning, design, construction and operation of the built environment, reveals a multiplicity of diverse uses and representations of resilience. Moreover, the meaning attributed to the term is often influenced by the professional remits and decision space of policy and decision makers. Given these results, we argue that resilience should not be seen as a consensual concept but rather as an unfolding ethical paradigm through which stakeholders create their own dynamic representations and meanings. By illustrating how the term is often reified in divergent and incompatible ways, we identify five tensions that this creates, and the implications from both a theoretical and a policy perspective. Given the malleable and nebulous nature of the term we suggest that it should be used cautiously within both contexts.

2 INTRODUCTION

The term 'resilience' is increasingly adopted by both policy makers and practitioners in the field of disaster risk reduction; however both the conceptual clarity and practical relevance of this term are unclear. It is used on a variety of scales and in a variety of ways: as a descripting term, as a tormative nerm, as a paradigm, as well as theory (e.g. Strunz, 2011). The original meaning was largely constructed in the field of ecology by authors such as Holling (1973). Resilience was understood as a measure of the ability of ecological systems to persist in the face of disturbance and maintain relationships between different elements of the system; this idea has been recently adapted (and, while doing so, diluted and stretched) by many other disciplines, creating ambiguity and uncertainty (Brand and Jax, 2007). Unsurprisingly, this has led to major difficulties in operationalising and applying resilience in the search for more harmonious relationships between the natural, the social and the built environment (Alexander, 2013). Despite this lack of clarity, the number of governmental and non-governmental reports mentioning resilience and aiming at developing 'resilience-building' is increasing (Davoudi, 2012). Similarly, the term has become common among local authorities, construction stakeholders and emergency services (Bosher, 2014).

Resilience has generally been defined in two ways: as a desired outcome, or as a process leading to a desired outcome (Kaplan, 1999). Bahadur et al. (2010) conducted a comprehensive literature review in order to demonstrate how 'resilience' is conceptualised and characterised, and concluded that while the term is widely used, its meaning is increasingly ambiguous. Funfgeld and Mcevoy (2012) argue that '*resilience is not used in an exact, defined way, but more as a versatile (and seemingly fashionable) umbrella term, which loosely express some of the conceptual underpinning*' (p. 326).

What is clear is that the term resilience is increasingly used to signify a particular state of being, or set of processes to bring about a state of being. In other words, rather than recognising the malleable nature of the term, and the ways in which it is continually shaped by discourse, it is increasingly mobilised to represent and/or to justify a cause of action. Building upon the work of Marx and Weber, Lukacs (1971) introduced the concept of reification in his critique of the economic construct of 'labour'. Lane et al. (2006: 835) explain that "*reification is the outcome of the process by which we forget the authorship of ideas and theories, objectify them (turn them into things), and then forget that we have done so*". The act of reification is a key component of learning but, as Wenger (1998) explains, every community of practice produces artifacts, such

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as tools, procedures, stories, and language that reify some aspect of its practice. Consequently the construct's original meaning may get obscured as successive practitioners and researchers adapt it to fit the needs of their work and their personal biases (Latour, 1987).

This paper aims to illustrate how resilience is reified in a multiplicity of different, and often incompatible, ways. UK policy documents and interviews will be used as empirical evidence of this reification and the tensions it creates. The final section includes a discussion of empirical results and their implications for policy and practice.

3 METHODOLOGY

There are a number of ways of examining how policy and decision makers define, understand and implement the resilience paradigm. This paper reports the results of a study that focused on the following approaches of the inquiry. Firstly, from the perspective of the practitioner: examining common 'practices'. This implies inquiring about what stakeholders perceive as being important in resilience. Secondly, from the policy perspective: identifying what institutions consider important and urgent by distilling results from the way objectives, targets and goals are exposed in policy documents). Thirdly, from the perspective of norms and standards, exploring what institutions do effectively enforce.

The first step of the study was to define a methodological framework to scrutinise policy and stakeholders' perspectives. Carpenter et al. (2001) highlight that a common problem in resilience studies which is to define "resilience of what?" and "resilience to what?". We adopted a framework that included five scales of analysis (the building, the neighbourhood, the settlement or city and the country) and two types of triggers: (a) Natural triggers (sudden triggers such as earthquakes, floods and tsunamis; and incremental slow triggers such as climate change); and (b) human-made triggers (including fire, violence and crime, international terrorism, industrial threats and pollution).

The second step consisted of creating a database of documents related to resilience, which included UK national policy documents ranging from 2000 to 2013, published on the UK government web site (www.gov.uk) and written by national agencies such as the Cabinet Office, Home Office etc. Overall, 23 policy documents were thoroughly analysed.

The third step examined the database through frequencies of word use (including the use of conceptual mapping and clouds) that allowed us to identify the most commonly used terms. This was carried out with the aid of Nvivo 8 software.

We then analysed transcripts from 19 interviews conducted with various stakeholders that are directly or indirectly involved in 'resilience' agenda implementation. We interviewed the following stakeholders:

- Three architects working in the private sector
- The Head of regeneration, city council
- The Flood management officer, city council
- Three emergency planning officers, city council
- Two liaison architectural officer, police
- The Fire and rescue service officer
- The Counter-terrorism security advisor
- Two property developers
- An officer of the Civil Contingencies Research Office, police
- Three urban planners working in the private sector.

The semi-structured interviews were aimed at identifying the perceptions and representations that stakeholders make of resilience. They were conducted between May and October 2013 and lasted for

approximately one hour each. Each interviewee was asked to define resilience and to comment on whether and how resilience is implemented in their day-to-day practice.

The final step of the study consisted of comparing word uses, frequencies and discourses among policy documents and the transcripts of the interviews. This allowed us to draw patterns and analytical generalisations. We transcribe here some quotes that help illustrate the differences and synergies found.

4 RESULTS: UK NATIONAL POLICY ON RESILIENCE

4.1 Brief introduction to the resilience policy framework in the UK

Since the introduction of the Civil Contingency Act (the Act) in 2004, civil protection activity in the UK has been conducted under the epithet 'UK resilience' (HM Government, 2004). The civil protection plan was significantly restructured to codify existing practices, and introduce new statutory duties (O'Brien and Read, 2005). A process of Integrated Emergency Management that includes six related activities - anticipation, assessment, prevention, preparation, response, and recover – was adopted (HM Government, 2012). Under this process, civil protection duties are now carried out by a range of designated Category 1 and Category 2 responders, which are expected to collaborate to achieve this common goal. Whilst UK Cabinet office has ultimate responsibility for civil protection, resilience is carried out through is the Local Resilience Forum (LRF).

The Act describes the duties of stakeholders to cooperate in a LRF, and formal meetings and allocations of work to responsible stakeholders. The LRF typically meets three times a year to discuss emergency planning within its county. In the event of a major emergency, the group forms the Strategic Coordinating Group for that emergency, i.e. it would provide a forum for the co-ordination of a multi-agency response. For example, during the recent Thames Valley flooding, the Thames Valley LRF facilitated Strategic Coordination Group meetings at 10am and 4pm every day during the month of February. While Environmental Agency was presented by the media as the main repondent to floods, they did so in coordination with the LRF (e.g. Buckinghamshire FRS, 2014). A number of sub-groups with specific areas of responsibility meet six times a year and report to the LRF. The UK Resilience Programme thus improves coordination among the emergency services but it does not take into account community involvement.

The UK policy defines community resilience in a rather restrictive way: "Community and individuals harnessing local resources and expertise to help themselves in an emergency, in a way that complements the response of the emergency services" (Cabinet office, 2011b). This definition does not provide any information on the activities that would 'complement the response' nor does it emphasise the importance of self-reliance or emergency prevention.

4.1.1 UK Government definition of resilience

The UK Civil Protection Lexicon (Cabinet Office, 2013b) defines resilience as: "The ability of the community, services, and of infrastructure to detect, prevent, and, if necessary to withstand, handle and recover from disruptive challenges". The definition dates back to the statutory guidance document 'Emergency Preparedness' (HM Government, 2006), where it was used in a context of risk management. It however differs slightly from an earlier definition used in the document 'Dealing with Disasters' (Cabinet office, 2003) ("The ability at every relevant level to detect, prevent, and, if necessary, to handle and recover from disruptive challenges"). The definition used in the Lexicon underpins the development of all subsequent resilience-related work: it has guided the development of the LRF framework, as well as the creation of the National Risk Register and National Security Strategy (Cabinet Office, 2013; HM Government, 2010). It also influences the identification of people who might be vulnerable in a crisis, data protection protocols, cyber-security, the protection of critical national infrastructure, prevention of violent extremism, etc. Although Birkmann et al. (2012) points out that an examination of all current UK Civil protection guidance reveals that a total of 21 different definitions are used, all of them share elements of detection, prevention, resistance, management and recovery.

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When exploring ‘resilience of what’, the analysis shows that the majority (65%) of policy documents refer to measures and initiatives having a national/country scope of influence (compared to 17% at the regional level, 8% at the city level, 4 % at the neighbourhood level and 4% at the building level). At first glance this is hardly surprising, given that we examined policy written by the national government. However, considering the strong influence that the idea of community and city resilience has had in literature (Norris et al., 2008; Pelling, 2003; Stumpp, 2013; Tobin, 1999) it becomes clear that UK policy has had to make efforts to redefine the boundaries of the resilience approach.

Resilience is mentioned in documents aimed at foreign affairs, for example: The UK government’s humanitarian policy (DFID, 2011), which “*outlines how the UK will help build resilience to crises and respond to humanitarian need resulting from conflict and natural disasters*”. One of the programmes is Building Resilience and Adaptation to Climate Extremes and Disasters Programme (BRACED) supported by the Department for International Development. It is also used in relation to terms of data protection (service resilience) and telecommunications (Cabinet Office, 2011a). The definition of resilience therefore resonates with a wider discussion within the UK Government on how to handle new forms of risk triggered by a more globalised and interconnected world. As demonstrated by the policy analysis (Figure 1), the policy framework focuses on using a multi-hazard approach, taking into account natural hazards as well as man-made threats (although the term ‘resilience’ is not used in the Terrorism Act).

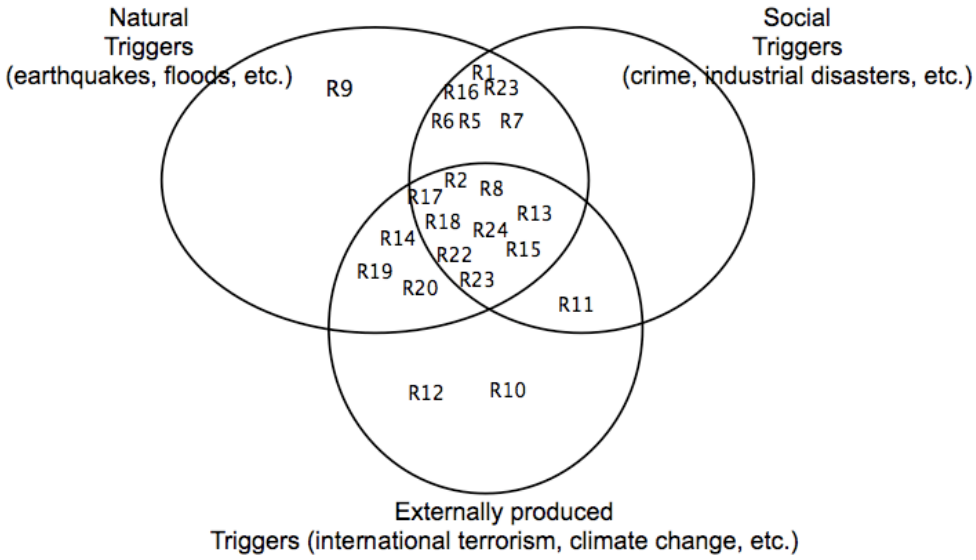


Fig. 1: Mapping of Resilience policy documents in the UK, identifying ‘resilience to what’ according to three types of disaster / emergency triggers

All the activities are based around the integrated emergency planning (cycle of emergency planning): “Resilience is built around several key activities. Firstly, risks of disruptive challenge must, when possible, be identified, either by considering internal weakness or scanning the horizon for external threats. Anticipation allows choices to be made. In some circumstances it is possible to prevent disruptive challenges occurring by taking action at an early stage. In other cases, planning has to take place to deal with a disruptive challenge. This cycle – anticipation, prevention, preparation, response, recovery – is at the heart of resilience” (Cabinet Office, 2003). It is appreciated that it is impossible to fully eliminate some risks, therefore resilience is seen by the Government as a way of building capacity to respond to emergency events while taking into account the potential interdependencies of services/systems that maybe disrupted. In this perspective, resilience primarily refers to the capacity to respond to emergencies and to quickly return to some form of ‘normality’.

Essentially, local efforts in enhancing resilience are built on collaboration between organisations whereas central efforts are based on command and control. Policy on resilience in the UK put much emphasis on the capacities expected from other stakeholders in order to achieve ‘resilience’, however these documents are extremely vague, and so local stakeholders understand and adjust the principles differently.

4.2 The differences in interpretations and the tensions they create

The definition of resilience provided by the national policy is not strictly accepted at the local level and in addition is reified by the professional remits of those who are 'implementing resilience'. This leads to tensions not only among national policy makers and local level policy implementers, but also among those who are directly and indirectly affected by the Resilience Programme. Five identified tensions are discussed here:

Tension 1: National vs. local scale: The widespread use of term resilience in the national policy documents is not reflected on local level and is often at odds with the practical understanding of resilience (Table 1 highlights different characteristics of resilience).

Construction	Emergency	Regulators	Policy
Flexibility	Business continuity	Preparedness	Business continuity
Durability	Preparedness	Protection	Recovery
Robustness	Recovery	Security/ safety	Preparedness
Coping	Coping	Business continuity	Detection
Business as usual		Robustness	Prevention
			Resistance
			Bounce back-ability

Table 1: Characteristics of resilience within four sectors of intervention

Unsurprisingly, the definition of resilience provided by the emergency services goes in line with the one provided by the Act, and is infiltrated into every aspect of emergency services' activities:" *[I understand resilience] fairly technically in the sense of the CCA 2004, which defines resilience. (...) I define resilience as the ability to withstand disrupting events or shocks, man-made, terrorist or natural*" (Emergency Planning Officer). But at the same time, stakeholders add an extra layer to the definition, explaining that resilience is more about the organisational capacity of the respondents: "*We have to be resilient enough. (...) We need to have resources and the infrastructure in place to enable us not only to deal with incidents but also have enough capacity for another incident coming in*" (Fire and Rescue Service Officer).

Construction stakeholders define resilience in the context of buildings and urban environment, although the term 'resilience' is not often (if at all) used in their daily practices. Their definitions focus on characteristics of resilience rather than the process of implementing resilience (as emphasised by the policy and local authorities). The key characteristics for responants are durability: "*Resilience is about buildings or places lasting for beyond one or two generations*" (Urban Planner), and flexibility in a sense that the building should be able to adapt to changing conditions: natural (e.g. climate change), economic (e.g. building should be sellable and thus should be multi-purpose) and social (e.g. migration and change in demographics).

Tension 2: Response and preparedness vs. prevention: Whilst the UK policy acknowledges the importance of prevention, the majority of documents (notably those that emphasise the importance of local resilience) focus on response. Local level respondents understand resilience as a way to deal with an event, i.e. being prepared for the event in order to be able to respond to it rather than to eliminate it: "*I am not sure resilience is a more upfront thing. I am not sure that you can define it in terms of being ready because I don't think you ever are. I think [you can] cope but you never have the best solution ready at your fingertips*" (Emergency Service Officer). Another respondant argues: "*We plan for the contingency of the actual event and then we are there to respond thereafter if something happens, but we don't at this moment in time (...) get prepared to make ourselves more resilient prior to it. [It's] what would happen if something happened now rather than trying to make it safer immediately, if that makes sense? Our team is very much more a response after the event and planning towards such events*" (Emergency Planning Officer).

On the contrary, construction stakeholders understand resilience as inherent safety, and assume robustness and resistance as the critical part of resilience: "*It is about risk avoidance as in where in the building is located and how it is designed*" (Architect). Robustness - a term that is often interchangeably used with resilience among the construction stakeholders - is argued to be a part of their daily practice: "*[We] know that the building has got to be secure, (...). Buildings have got an element of robustness against accidental damage which actually also transfers to intended damage*" (Architect). "*We are designing out risk, and that's how it should be done*" (Urban Planner). Local authorities however argue that in some cases, when

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inherent safety cannot be achieved due to practical (including financial) reasons, preparedness and protection (which are used as synonyms to resilience) are the best routes: "*There'll always be a flood area where it is unaffordable to build something to stop it from happening, and in which case you will have to go down the resilience type route*" (Flood risk manager).

Tension 3: Business continuity vs. community resilience: Preparedness, prevention and response are all aimed at least to two different audiences: community and business. Practitioners on the local level believe that the key to achieving resilience is community preparedness (and therefore community resilience). They aim at making sure that the community is prepared for any event and does not need to rely on external support. Policy promotes the opposite: to an extent, it underestimates the ability of the community to respond and instead suggests to rely on the Category 1 respondents. Curiously, however, when policies are analysed (Table 2), the words such as 'community', 'public' and 'localism' appear much more often in policy documents that in practitioners' vocabulary, the focus of which is on 'planning', 'designing' and 'building' for the event.

Policy	**Practitioners**
national	resilience
regulations	plan
flood	building
risk	flood
power	business
localism	*people*
community	ability
land	event
water	design
public	risk

Table 1: Ten most frequently used words relevant to resilience among policy documents and practitioners' responses

In several policy documents, resilience is used to promote business continuity in any circumstances - this is also reflected in activities carried out by those directly influenced by the policy documents. Local authorities and emergency services emphasise the importance of business continuity and promote its importance among the business sector: "*It's not just the case of dropping everything and dealing with the event that's taking place; it's also being resilient enough to carry on your daily business and at the same time maintain continuity*" (Regulator). These stakeholders argue, however, that this may lead to the underestimation of community resilience. In contrast, construction stakeholders do not see business continuity as a crucial aspect of resilience, and deplore that continuity does not actually leave a place for change and adaptation. They argue that continuity is not always the best option as an event may present an opportunity for improvement.

Tension 4: Negative vs. positive connotations of resilience: In both policy and practice resilience is closely associated with security. However this creates another tension: while policy makers and implementers promote the security aspect of the resilience concept, they often underestimate the fear and increased isolation that is effecively triggered by the term 'security'. Due to its negative connotation, measures for increasing resilience are not flagged up by the commercial developers as there is a fear of alarming potential clients. There is a lack of interest - and therefore investment - in an incident which (in the eyes of the clients and developer) is highly unlikely (i.e. a terrorist attack on a building or a flooded housing estate). Emphasis on resilience is seen as counterproductive because it implies that something may happen to a property: "*All marketing literature is too positive to be able to incorporate the reality and the negatives. (...) If you had a building next to a river you wouldn't see in the sales brochure the fact that it's been lifted up to a certain height because it just flags up an issue into the purchaser's mind. (...) The developer only wants to tell a positive story*".

Construction stakeholders and emergency services both agree that this perception should be changed, and instead the idea that security can be achieved by increased inclusiveness and participation should be promoted: "*Security (...) means putting up walls and gates and that sort of stuff. [While] the inhabitants inside feel secure, it is very difficult to explain to them that interacting with the street and making it more friendly puts the antisocial behaviour off because they [people who conduct antisocial behaviour] feel overlooked*" (Architect).

***Tension 5: Business as usual vs. low probability event*:** The term resilience appears more to be useful in policy and among the local level regulators when it comes to the unexpected events. Resilience is understood as preparedness to something that is out of order, although it is seen as a long-term process that will eventually lead to the incorporation of resilience into day-to-day practice: "*Resilience is built in what we are trying to achieve, that's what the planning system is all about creating robust environments, buildings. (...) It is central, it is everything*" (Regeneration Planner). Construction stakeholders and emergency services, on the other hand, argue that resilience is a business as usual type of activity: "*[Resilience] is not something that is 'Oh, it is resilience!' and it is put into a little pigeon hole. Resilience is mainstreamed. (...) It is normal business, it's business as usual*" (Fire and Rescue Service Officer). Resilience is not seen as an explicit part of the design, planning and construction process - it is an embedded process that does not get acknowledged unless the issues of safety and security are specifically expressed by the client. This understanding of resilience however does not focus on a more serious event with a low(er) probability. Resilience is a part of a day-to-day practice included in business as usual, and its implementation is assumed: "*We make sure that things don't fall off buildings and make sure that the occupants are essentially surrounded by the right construction and technology (...) but nothing more serious than that*" (Architect).

5 DISCUSSION AND CONCLUSIONS

There is no problem *per se* with having multiple definitions of a term, however if the term is too malleable and is used in a number of scales, it raises concerns about how practitioners can make sure that they understand it similarly. As this analysis has illustrated, neither stakeholders nor policy documents seem to take into account the limits of these scales: they interchangeably navigate the term of resilience as an objective, a means to attain an objective, a framework of analysis, a concept, or an aspiration among many other scales. This, together with malleability of the term raises the possibility of tensions emerging between the agendas that a focus on differential definitions of resilience induces.

The use of the term 'resilience' presents us with a curious dilemma: while the UK policy definition of resilience is widely known and accepted, practitioners use the meaning of the term (as opposed to the term itself) or the synonyms (according to their understanding) of the term. For example, prevention, preparedness and response all appear to be important components of resilience - but their prominence in practice can be different from one discipline to the other. Similarly, both policy and practitioners talk about resistance and robustness, but the implied meaning is different - from the ability to withstand to the ability not to be affected at all. Resilience can be seen as two-faced: on one hand, it is a descriptive concept used by many academics, and on the other hand it is a boundary object with a wide range of meanings used by policy-makers and practitioners. In any case, resilience must be increasingly viewed as a vague and malleable concept (Alexander 2013; Bosher 2014); this however should not be seen as a negative notion, as such vagueness and malleability may also bring advantages. The interpretation of 'resilience' has moved from a term to a way of thinking, a paradigm that collects a number of concepts rather than a concept itself. This investigation suggests that resilience has become a boundary object, meaning that it now plays a role of a term that facilitates communication across various disciplines and is used as a shared vocabulary – although the understanding of the parties would differ regarding the term in question. But at the same time – and as demonstrated here - the vagueness and malleability of the term 'resilience' has led to a variety of interpretations and applications. It could be argued that such vagueness makes this term politically successful and useful helping – to a certain extent – to reconcile the interests of politicians and practitioners. Boundary objects however have a fundamental disadvantage: in the case of resilience, the extension of the term has become so wide that it hides conflicts and power relations, since everyone agrees on 'implementing resilience' while implying different meanings. In a long-term this may lead to further tensions not only among those involved in 'implementing resilience' but those affects by 'resilience', which could be reinforced by policies and their stance on the use of the term 'resilience.

Resilience has thus become an idea used on many different scales with many different intentions and with a very wide extension. It includes a range of components, from international aid and leadership (as demonstrated by the UK policy) to resistance and security (as discussed by the interviewees) to sustainability

and community well-being (as often argued by the academic literature). It is used to connet discourses of separate stakeholders but in equal measure it may confuse them by conflating many meanings.This makes it impossible to decide whether a specific state is resilient or not, and to find out how a resilient state can be achieved. The principle of resilience therefore should be adopted with prudence, and the long term consequences of interrelated variables must be considered: instead of trying to come up with a new definition, both academics and practitioners should instead try to overcome the drawbacks the term 'resilience' may pose while taking advantage of its capacity to create a collective narrative to a variety of ethical positions .

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