

Introduction: The Value of Resilience

9769 words

Panic figured prominently in the headlines of British dailies printed for the morning of July 8, 2005:

The Daily Mirror:

“07/07: Terror In London: WE'RE GOING TO DIE! WE'RE GOING TO DIE! ; Cries pierce choking air as survivors flee twisted wreckage of Tube trains” (Moyes, 2005)

The Times:

“Panic, shoving, fear of fire and bonding below ground” (Hamilton, 2005)

The Guardian:

“Attack on London: Aldgate: Stunned silence, darkness, panic, then calm: 8.51am” (Henning, 2005)

Articles drew heavily on eyewitness accounts to reconstruct, for a curious readership, the scenes which unfolded when three explosions erupted near simultaneously in the London Underground followed by a fourth blast, less than an hour later, on a city bus during the busy rush hour of the previous morning. The stories told were mixed. Ray Wright, a relief train driver, described a "sea of blackened faces in a state of total panic" (BBC News, 2005b). “There was immediately smoke everywhere and it was hot and everybody panicked. People thought they were just going to suffocate” told another witness (Muir & Cowan, 2005). Others, however, focused on the instances of cooperation, solidarity, and ‘heroism’; acts which many articles were quick to suggest demonstrated a resurgence of the ‘blitz-spirit’ in the very place where many Londoners had gathered to seek cover from aerial bombardment

half a century earlier. "There was no panic, especially when people realised they were OK. Everyone then bonded together and helped each other. Then we got out and saw the second carriage. There was blood and stuff everywhere; it wasn't pretty" (Hamilton, 2005).

In the months that followed, these journalistic accounts would be supplemented by academic research offering a more sober and unanimous description of the forms of social behaviour which manifest in the unfolding of this emergency. Survivors were frightened, the studies suggested, but resilient (Cocking, Drury, & Reicher, 2009; Drury, Cocking, & Reicher, 2009; Sheppard, Rubin, Wardman, & Wessely, 2006; Wessely, 2005a). Individuals remained calm (Cocking et al., 2009; Drury et al., 2009; Wessely, 2005b) and organised themselves in an orderly manner (Cocking et al., 2009; Drury et al., 2009). Rational decisions were made on the limited information available (Sheppard et al., 2006). Survivors recalled an overwhelming sense of unity amongst strangers gathered in in the darkened underground (Cocking et al., 2009; Drury et al., 2009). Cooperation, compassion and mutual assistance, prevailed over selfishness and competition (Cocking et al., 2009; Drury et al., 2009; Wessely, 2005a). Social norms and values—far from breaking down—become more pronounced. Longer-term studies concluded that the psychological effects of 7/7 were short-lived with few members of the population experiencing any lasting stress or trauma (Page, Rubin, Amlôt, Simpson, & Wessely, 2008; Rubin, Brewin, Greenberg, Simpson, & Wessely, 2005). Even financial markets rebounded quickly (BBC News, 2005a; London Chamber of Commerce and Industry, 2005; Washington Post, 2005). While some suggested that a historical experience with terrorism, and perhaps even the memory of the war-time Blitz, had contributed to a particular immunity to panic amongst Londoners (Sheppard et al., 2006; Wessely, 2005a, 2005c), researchers broadly agreed that social behaviour in emergencies was

generally more resilient than is commonly thought. Panic, disaster researchers proclaimed, is a myth (Clarke, 2002; Johnson, 1985; Keating, 1982; Sheppard et al., 2006; Tierney, 2003).

The mythologization of panic represents an enormously significant event in the history of emergency governance. Panic has long functioned as a principle problem guiding the activities of emergency planners. Indeed, the rapid transmission of panic across populations was understood to exacerbate, and often supercede, the dangers posed by the triggering event. Philip Mitchiner, writing in *The British Medical Journal* advised in 1938 that “[i]n the case of gas bombing, as indeed with any bombing, it is panic among the civil population which is most to be feared” (Mitchiner, 1938: 93). An Office of Civil Defence publication from 1951 entitled *Panic Control and Panic Prevention* warns that “[m]ass panic can produce more danger to life and property than any number of atomic bombs” (Office of Civil Defence, 1951: 71). The threat of panic thus demanded and legitimised the exercise of a whole assemblage of governmental techniques designed to maintain or restore social order in an unfolding emergency. Hadley Cantril advises, in his article *Causes and Control of Riot and Panic*, “In severe cases use severe treatment to avoid panics. Threaten punishment or enforce strict discipline—but remember this is a last resort and not a permanent solution” (Cantril, 1943: 678, emphasis in original). Of course, these disciplinary forms of control were not uncontroversial nor did they fail to generate considerable disquiet amongst lawmakers concerned that mounting controls and secrecy risked sliding free and democratic states into authoritarianism (Hennessy, 2010; Orr, 2006).

Resilience appears to offer a way out of this age-old liberal problematic which pits freedom against security. It does so by premising security on the exercise of natural functions, rather

than on prohibitory governmental interventions. Rather than relying on force to maintain or restore a precarious social order, resilience initiatives aim to foster, facilitate and optimise the inherent resilience of systems deemed vital to life in the 21st century. Indeed, it is difficult to argue against the claim that resilience strategies represent a more humane form of governance than those exercised during the Cold War. Resilience strategies stress community participation rather than state secrecy. They exploit human dynamism, creativity and freedom, instead of suppressing public panic and oppressing political dissidents. They aim to harness the inherent resilience of vital systems to self-organise responses in a bottom-up fashion, rather than impose order in a top-down fashion. By enjoining the positivism of social science with the emancipatory project of liberalism, resilience narratives position resilience as the fulfilment of the Enlightenment promise that an improved understanding of the nature of social systems will permit less governance, less control and more 'freedom'.

While one could take this positivism for granted, what if we were to remain stubbornly sceptical with regard to this 'advance' in the understanding of collective human behaviour and the freedom it is said to foster? How then might we explain these transformations in emergency governance? How might we understand the re-evaluation of social behaviour upon which these strategies are premised? How would we explain the emergence of resilience? This book offers an alternative explanation to the predominant account found in resilience literatures. Resilience was not lying in wait for the march of science to provide the conditions for its recognition. Nor was it concealed by the distortions of ideology which lifted with the culmination of the Cold War. There is nothing natural about resilience.

Resilience, I argue, is the correlate of an emergent order of neoliberal governance. Inspired by Foucault's claim that the regime of power/knowledge enacted by liberal apparatuses of security is essentially biopolitical this book situates the emergence of resilience within broader shifts in the government of life. Resilience represents a specific mode of evaluating life: a way of understanding what life is and what life should be. As such, resilience also represents a specific way of problematizing particular lives and lifestyles. Of course, there are innumerable ways in which life might be understood, evaluated and problematised. These varied understandings can co-exist; reinforce and contradict one another; come into being and disappear over time. I am therefore less interested in determining whether resilience is a true or false representation of life—whether it is real or the product of ideology. As a mode of evaluation, resilience clearly exists as an empirical fact. What I am interested in investigating are the processes through which resilience obtained its status as a true and accurate measure of life. Specifically, how did resilience become the predominant mode through which security discourses value life in the 21st century?

To answer this question, this book performs a genealogy of resilience. A genealogy is a critical inquiry into the historical conditions enabling the emergence of values. This genealogy aims to render explicit the historical conditions under which resilience has risen to prominence as the principle value orienting neoliberal security practices in the 21st Century. In doing so, this genealogy challenges conventional narratives which explain the advent of resilience strategies on a scientifically validated re-evaluation of security referents. Resilience was not simply discovered as a natural property of vital systems. It is a mode of valuation which was constructed over time through complex, often obscure, yet highly *political* processes. Revealing the significant amount of work which has gone into forging resilience as a security value not only serves to undermine the assumption that resilience was

discovered but raises questions about the ‘natural’ affinity of resilience and freedom. Far from absolving the need for governance, resilience initiatives have required significant government investment and effort. Resilience strategies have thus coincided with a reorientation, rather than a rolling-back, of liberal security governance to optimise the capacity of systems underpinning, or constitutive of, contemporary life to withstand, recover and bounce-back from crisis. Resilience thus calls on government to create the conditions within which we may be permitted to be ‘free’.

Clearly, the remit of this investigation requires a broad, interdisciplinary scope. For the sake of maintaining a sufficient degree of empirical focus, I have concentrated my analysis on this history of the rationalities and practices of UK emergency governance. As a site within which multiple, often conflicting understandings of resilience are operationalised, UK Civil Contingencies provides an ideal location to study how resilience has been mobilised to deal with emerging security challenges. Interrogating the history of the rationalities and practices of UK emergency governance alerts us to the significance, and potential stakes, in the shift to resilience-based security policies. Nevertheless, accounting for the emergence of resilience will also require us to move outside the remit of UK emergency governance to examine the broader social, political and epistemological transformations which have enabled the rise of resilience discourses. As such, the empirical focus of this study functions both as an empirical site of research and a location within which to dramatise the more general historical processes which have afforded resilience its value.

The Value(s) of Security

Resilience is now a ubiquitous term across a diverse array of discourses with some purchase in risk management.ⁱ At its most general level resilience is understood as the capacity to absorb, withstand and ‘bounce-back’ quickly and efficiently from a perturbation. It is considered to be both a natural property and a quality which can be improved within a broad array of complex adaptive systems including critical infrastructures, ecosystems, societies and economies through good governance. However, as one moves across academic fields and specialist applications it becomes evident that multiple understandings of resilience are in operation.

For network scientists resilience is understood as the ability of a network to maintain systemic integrity in the event of fault or disruption: a function of the design of network architectures measured in terms of system functionality following the removal of successive nodes and links (Lewis, 2009: 375). Resilience is thus often associated with network robustness, survivability and graceful degradation with less emphasis on regeneration or self-repair. This understanding of resilience can be compared to psychological (Werner & Smith, 1989, 1992) and sociological (Fredrickson, Tugade, Waugh, & Larkin, 2003; Kindt, 2006) understandings of resilience as a resource which permits certain individuals to overcome risks and/or cope with psychological trauma better than others. Here, resilience is usually associated with the capacity to avoid the onset of maladaptive behaviours, such as severe depression, and quickly return to ‘normal’ in the wake of a crisis. Resilience thus refers to the capacity to bounce-back from adversity to resume a particular way of life. Finally, the concept of resilience found in ecological literatures moves one step further: referring not simply to the capacity to ‘bounce-back’ to an original state but advancing the possibility of moving to alternative stable states in a complex system (Gunderson & Holling, 2002). As these authors note, enhancing resilience by optimizing the evolutionary capacity, or ‘fitness’,

of a system, not only increases the capacity of a system to withstand the impact of potentially destabilizing shocks, but also permits the system to quickly and efficiently organise so as to capitalise on emerging opportunities—to realise, and even produce, ‘new normals’ (Gunderson & Holling, 2002: 8). In this formulation, resilience moves from a conservative exercise of preservation to a creative process which holds out the promise of climbing to new, possibly more desirable, states.

Brand & Jax (2007) note that this conceptual vagueness can in fact be productive. As a boundary object, the term resilience “facilitates communication across disciplinary borders by creating shared vocabulary although the understanding of the parties would differ regarding the precise meaning of the term in question” (Brand & Jax, 2007: no pagination). This is of clear value across the heterogeneous operations conducted under the banner of UK Civil Contingencies where multiple colloquial and specialist understandings of resilience can be identified. The conceptual vagueness of resilience has led some to refer to resilience as a ‘perspective’ (Folke, 2006; Folke et al., 2002) or ‘paradigm’ (Anderies, Walker, & Kinzig, 2006) rather than a concept. Brand & Jax, however, are critical of this trend, arguing that diluting the conceptual clarity of resilience “may in fact be a hindrance to scientific progress” (2007: no pagination) and urge researchers to establish a more precise definition of resilience which might assist the “operationalization and application of resilience within ecological science” (2007: no pagination). The fixation within resilience research over definitions presupposes that resilience in fact exists, as a distinct, ontological property of particular systems. Here, resilience (signified) is taken to be something objective, present and real in the world (referent) that can be more or less accurately re-presented in a concept (signifier). If what needs to be deduced through all the completing claims is the true sense of resilience,

then the academic researcher is duty-bound to uncover this sense so as to establish a standard against which false definitions, or illegitimate copies, could be judged and discarded.

Efforts to typologise the different ways in which resilience is understood within (Brand & Jax, 2007; Handmer & Dovers, 1996; Masten, Best, & Garnezy, 1990) and across (Adger, 2000; Holling, 1996) disciplines do not stray far from this logic. While suggesting that multiple senses of resilience could exist, the conviction that different senses may be clearly distinguished and differentiated across a static table nevertheless fail to account for the varied ways in which resilience is used by practitioners. In practice, the meaning(s) of resilience continue to escape the categorical structures developed by academics. But if resilience cannot be defined, this does not mean it does not make sense. Strange—yet comprehensible—understandings of resilience abound in practitioner discourses which would no doubt shock and annoy resilience researchers desperate to secure the meaning of this concept. As resilience is taken up within new academic disciplines and modified to respond to particular problems faced in specialist fields its meaning continues to fragment and evolve. Clearly, the definition of resilience is too dynamic to pin down. It thus makes little sense to insist on a definition of what resilience *is* when its own sense is still in the process of *becoming*.

For researchers intent on ascribing a distinct meaning to resilience these apparent misuses of the term would be cause for concern. However, thinking resilience as a boundary object opens the door to a different research programme. What if instead we were to abandon the idea that resilience has any fixed sense? How then might we understand resilience and its implications for security? Rather than approaching resilience as a concept relating to a

determinate sense, I study resilience as a *value*. I am less concerned with what resilience means than how its emergence is changing the ways in which we understand and pursue security in the 21st century. By treating resilience as a value, I want to acknowledge that this term harbours multiple, evolving and often competing senses. Further still, I am interested in how the diverse ways in which resilience is understood and enacted productively contributes to the value of resilience within security discourses.

As a value, resilience performs various functions with regards to governance. Firstly, it provides a *quality* in relation to which systems, populations, individuals and even behaviours can be assessed and evaluated. Quality, Burgess reminds us, refers both to a property which makes something identifiable and a statement regarding its standard of excellence (Burgess, 2011: 32). Resilience acts as a mark of *distinction*. Attempts, currently underway, to establish a common metric for measuring resilience attest to the bureaucratic importance of these assessments (quantitative or otherwise) in allocating funding and guiding government policy (Birkmann, 2006; Brigilio, Cordina, Bugeja, & Farrugia, 2005). But it should not be ignored that resilience also operates as a value in relation to which subjects evaluate, problematise and comport themselves. Resilience is now a key term of art in self-helps books which provide instruction for the government of the self (Neocleous, 2013; O'Malley, 2010; Reid, 2012). Resilience thus generates *objectives* for security governance in relation to which security programmes can be designed and evaluated. Finally, the value of resilience is functional. The vague meaning of resilience (as noted by those who have considered resilience as a boundary object) *facilitates* the integration of diverse agencies, departments and actors by providing the semblance of a common objective where diverse concepts are necessarily being enacted.

Research into the value of resilience would furthermore need to recognise how resilience diverges from those values which formerly guided security programmes within the associated spheres of civil contingencies, civil defence and the military. Indeed, one of the more remarkable aspects of the emergence of resilience discourses is how they have coincided with the problematisation of the virtues of fortitude, robustness and stoicism traditionally associated with security (O'Malley, 2010). Security programmes rooted in the logic of protection are increasingly accused of generating forms of dependency which contribute to the very conditions of insecurity they had been mobilised to eradicate. In their place, qualities associated with resilience such as malleability, adaptability, flexibility and regeneration are now being actively promoted. These transformations in the political economy of security values clearly demonstrate that what is at stake in the proliferation of resilience discourses is not simply the practices through which security is pursued. Coinciding with a shift in what is *recognised* as secure is a more profound transformation in the semantic *meaning* of security and the *value* afforded to it. In light of these observations we should be prompted to ask: how can we account for the emergence of resilience as a security value? The next section outlines the genealogical method employed by this study to answer this question.

Genealogy and the Critique of Values:

Deleuze described genealogy as the 'true realisation of critique' (1983: 1). For while Kant advanced critique to determine the legitimate limits of the authority of institutions including the Church and the State, he could not bring himself to critically reflect upon the values in

whose service this critical project was mobilised. Kant, in short, failed to critically reflect upon the Enlightenment value of truth. Instead, critique was subsumed within a critical project designed to locate the limits of what was knowable in order to establish a secure foundation for truth. Genealogy would liberate critique from its service within this Enlightenment security project. Rather than securing values, most especially that of truth, critique would be folded back upon them. Genealogy is critical history. It traces the historical emergence of things “we tend to feel [are] without history” (Foucault, 1994: 369): values including truth and security. As a critique of values, genealogy is directed towards the problem of accounting for the value of values. A genealogy of resilience thus aims to uncover the historical processes through which resilience obtained its value and status within contemporary security discourses.

Nietzsche rejected the idea that the foundation of values could somehow be located outside the subject. There is no absolute, transcendent source of value and nothing has value-in-itself. Instead he would understand values to be the product of processes of valuation ultimately rooted within particular modes of understanding and experiencing the world. Yet, as much as Nietzsche was critical of those who located a transcendent source for values, he was equally severe to those who sought to explain the values of values through simple utilitarian calculus which presumed that these processes were immediately identifiable (Nietzsche, 1968: 164, 385, 1989: Pt. 6). Values are rarely the product of self-evident rationalizations of a subject who values. Values, Nietzsche aimed to demonstrate, come into being over long historical periods as they are recalled, reactivated and reproduced within particular modes of *evaluation*. Deleuze notes that this

“implies a *critical* reversal. On the one hand, values appear or are given as principles: and evaluations presuppose values on the basis of which phenomena are appraised.

But, on the other hand and more profoundly, it is values which presuppose evaluations, ‘perspectives of appraisal’, from which their own value is derived.” (Deleuze, 1983: 1)

It is clear within Nietzsche’s writing that these processes of valuing—these *evaluations*—were what ultimately preoccupied him. “Formerly one said of every morality: ‘By their fruit ye shall know them.’ I say of every morality: ‘it is a fruit by which I recognize the *soil* from which it sprang’” (Nietzsche, 1968: 149).

Evaluations *distinguish* values. Value is produced (*to be distinguished*) through the act of differentiating values and value systems (*to distinguish between*). In this sense, Deleuze explains that evaluation can be defined as

“the differential element of corresponding values, an element which is both critical and creative. Evaluations, in essence, are not values but ways of being, modes of existence of those who judge and evaluate, serving as principles for the values on the basis of which they judge. This is why we always have the beliefs, feelings and thoughts that we deserve given our way of being or our style of life.” (Deleuze, 1983: 1)

If values are simultaneously produced and reproduced *through* particular modes of being, then processes of value creation are, in turn, correlative with the unfolding of ways of being in the world. Evaluations which distinguish new values support alternative ways of life. This opening of a space between different values and evaluations is critical insofar as it is creative. This space—the ‘*pathos of distance*’ at the origin’ (Foucault, 1994; Nietzsche, 1989: 201, 2007: 11)—is constitutive of new perspectives of appraisal, new forms of evaluation, and thus new forms of life. This differential element, so intrinsic to the exercise of evaluation, is in Nietzsche’s writings termed ‘the will to power’.

The will to power is defined by Deleuze as "the genealogical element of force, both differential and genetic" (Deleuze, 1983: 46). It is the ultimate source of all value; that which differentiates modes of being. If the source of value comes from the will to power, then the measure of value lies in the affective feeling of 'enhanced and organized power' (Deleuze, 1983: 57-59; Nietzsche, 1968: 356). Yet, we must be careful not to psychologise these processes. It is not subjects who consciously will power. "Who therefore will power? An absurd question, if being is by itself will to power" (Nietzsche as quoted in Deleuze, 1983: 46). It is the will to power which produces values, peoples, nations, and consequently subjects. While ultimately rooted within subjectivities, processes of value creation thus simultaneously precede and exceed the individual subject.

Recalling Nietzsche's writings on the will to knowledge helps to clarify the relations between evaluation, the will to power and truth. The will to know, Nietzsche makes clear, is a manifestation of the will to power. The formation of reason and logic is an imposition onto the world proceeding from the need "[n]ot 'to know' but to schematize – to impose upon chaos as much regularity and form as our practical needs require" (Nietzsche, 1968: 278). Processes of ordering, or rendering familiar are necessary fictions imposed upon the world as "only when we see things coarsely and made equal do they become calculable and useful to us" (Nietzsche, 1968: 278). Schemas of knowledge thus proceed from evaluations which distinguish what is useful from what is not. "The *valuation* 'I believe that this and that is so' as the essence of *truth*" (Nietzsche, 1968: 275). At the same time, particular modes of knowing and valuing are always contested by alternative modes of evaluation which threaten to bend such schemas to their own will. Deleuze thus ascribes the sense of a phenomenon to "the force which appropriates it" adding "the history of a thing, in general, is the succession

of forces which take possession of it and the co-existence of the forces which struggle for possession” (Deleuze, 1983: 3).

With genealogy, values are recognised as signs, or symptoms, of a hierarchy of forces which must itself be diagnosed (Nietzsche, 2007: 7-8). I understand this order of force relations to constitute a political economy. Following Foucault, a political economy is taken to be a self-managing order: a “multiplicity of force relations immanent in the sphere in which they operate and which constitute their own organization” (Foucault, 1998: 92). Note that this understanding of political economy is defined less in terms of the exchange of equivalences (as in classical liberal economics) than as a system which organises, sustains, and supports difference, inequality and force. By ordering these ‘force relations’ political economies generate value(s). The primary function of a political economy is therefore not the satisfaction of pre-given needs (rooted in an assumption of scarcity, or lack) but in production of want (rooted in conditions marked by overproduction and excess) (Bataille, 1991). Lack is a secondary, retrospective effect of political economies which follows from the primary function of ordering power and producing desire (Deleuze & Guattari, 2004: 28). Insecurity, from this perspective, is not a primary, universal condition but a secondary effect of the desire for security generated by political economies of security. Accounting for the value of resilience thus requires a historical investigation into the conditions which have altered our sense of security. How does resilience change our understanding of security? How does the value of resilience derive from our sense of insecurity? How did we become invested in resilience and what does resilience make of us?

To answer these questions, this study performs a genealogy of resilience. The aim of a genealogy is not representation, but problematization. Its goal is not to provide a history of resilience, but to identify the contingent, historical conditions which contributed to the appreciation of this value in the field of security. This genealogy aims to problematise positivistic narratives of resilience which serve to render the value of resilience self-evident by appealing to a clear origin established by scientific progress. It does so by tracing the historical consolidation of a more discrete, but powerful, political economy of security underpinning the value of resilience. As a historically constituted transcendental field of force relations, political economies are both evolving and noumenal. They defy representation and direct examination. They can, however, be studied through the values they give rise to. Here, we will look to diagnose historical transformations in these political economies of security through a detailed study of the successive rationalities of governance historically enacted by a British machinery of emergency governance.

A machinery of governance is a localised assemblage of practices, bodies of knowledge, organizations and authorities which are mobilised to respond to a particular problem. Machineries of governance thus operate as a local actualization of more general economies of security. This genealogy is supported by Foucault's assessment that the order of power/knowledge enacted by political economies of security is biopolitical (Foucault, 1998, 2003, 2007, 2008). By tracing changes in the rationalities and practices of emergency governance to subtle, yet important shifts in the relations between life, order and contingency this book demonstrates that resilience emerged in relation to broader shifts in the biopolitical order of power/knowledge informing liberal security governance. The emergence of resilience, I show, is not a result of the progress of science. It is the correlate of the emergence of a neoliberal order of security governance. To help to establish this position this

book draws upon and seeks to contribute to recent scholarship in the biopolitics of security which has sought to analyse recent mutations in the order of power/knowledge sustaining liberal security discourses (Cooper, 2008; Dillon & Lobo-Guerrero, 2008; Dillon & Reid, 2009; Evans & Reid, 2014; Lobo-Guerrero, 2011). It is to this research, and its contribution to this study, that we now turn.

Resilience and the Biopolitics of Security

In his lecture series *Security, Territory, Population* (2007) Foucault investigated the biopolitical orientation of security. The lectures advanced his earlier analyses of biopower: a mode of power commitment to “making life live”, which could be distinguished from the right of the sovereign to “take life or let live” (Foucault, 1998, 2003). Making life live was operationally dependent however on the specific ways in which ‘life’ was understood and problematised. Tracing a genealogy of security, Foucault showed how early security policies originally developed to promote and protect the ‘species-life’ exhibited by populations (Foucault, 2003, 2007). A population is a particular enframing of life which emerged in the early eighteenth century. It is one which emphasises the species-existence of humans understood in the aggregate. In recent years, revolutions in the scientific understanding of ‘life’ (advanced within the digital and molecular revolutions) and shifts in the referent of security (from ‘populations’ to a series of ‘complex systems’ displaying life-like properties) have coincided with profound changes in the rationalities and practices of liberal security. In light of these changes, contemporary research in the biopolitics of security has asked, “What happens to the biopolitics of security when their referent object – life as species existence – undergoes profound transformation and change” (Dillon & Lobo-Guerrero, 2008: 269)?

Dillon and Lobo-Guerrero argue that these transformations must be understood as the product of complex processes of ‘speciation’ (Dillon & Lobo-Guerrero, 2008, 2009). Processes of speciation enact three distinct, yet interrelated, definitions enveloped within the term ‘species’:

‘Species’ means classification as such, classification as living thing and classification as value, specifically monetary or capital value. These three are locked into a very tight and radically interdependent triangulation.... These three poles of ‘speciation’ thus comprise a radically interdependent force field in which the changing correlation of forces transforms the composition of the respective ‘trig’ points. Each of the three—classification, living thing and valuation—operates in mutually disclosive need of the other two (Dillon & Lobo-Guerrero, 2009: 8).

Speciation, for Dillon and Lobo-Guerrero, refers to a particular ontopolitical enframing of life. Like Nietzsche, they stress the simultaneity of knowing and valuing. Particular understandings of life always already advance a schema for valuing lives, while specific determinations of what life is are rooted in processes of ascribing and deriving value from particular lives. As the frameworks of intelligibility for knowing ‘life’ shift so too do the regimes of valuation used to evaluate lives.

In his genealogy of security, Foucault demonstrates how biopolitical techniques of governance had their precursors in disciplinary technologies forged in the late seventeenth and early eighteenth centuries exercising a ‘subtle coercion’ (1977: 137) on the body for the “optimization of its capabilities, the extortion of its forces, the parallel increase of its usefulness and its docility, [and] its integration into systems of efficient and economic controls” (1998: 139). Emerging through modifications in the ‘anatomy-politics’ of the body exercised by disciplinary technologies was a ‘bio-politics’ operating on the mass-body, or

species-body, of the 'population'. This shift in the referent of power relations entailed the development of new techniques and technologies of government. Taken together the assemblage of power/knowledge whose biopolitical function is the protection and promotion of the species-life of the population would, over time, come to constitute a political economy (*dispositif*) of security (Foucault, 2007). Security technologies operated in relation to the patterns identified within statistical maps of the aleatory 'events' which enhanced or suppressed species-life (Foucault, 1998: 139, 2003: 246). To the extent that these events displayed a statistical regularity, regulatory mechanisms could thus be introduced "to compensate for variations within this general population and its aleatory field" (Foucault, 2003: 246). As a mode of power protecting life at the normative and aggregate level biopolitical techniques sought to secure populations by regulating how the 'general' rates of incidence of contingencies correlated with biological and environmental factors. Technologies of security aimed to tame the milieu in which the species-life operated by 'establishing a sort of homeostasis...by achieving overall equilibrium that protects the security of the whole from internal dangers' (Foucault, 2003: 246).

Foucault's analyses of the biopolitics of security were principally motivated by an interest in performing a genealogy of the idea of security animating the post-war welfare state. Yet, significant changes in the discourses and practices of security since Foucault's death in 1984 have raised questions concerning the contemporary relevance of these analyses for understanding the dynamics of the contemporary security practices. Overshadowing the contemporary dependence on insurance technologies for the provision of security (Lobo-Guerrero, 2011), is the emergence of a new discourse of danger rooted in the radical contingency of contemporary threats. Attention has turned from the 'general' aleatory phenomenon of early biopolitical mechanisms to those high-impact, low probability threats—

the ‘unknown unknowns’—which evade actuarial capture and strain actuarial-based forms of risk management (Daase & Kessler, 2007; Ericson & Doyle, 2004; Massumi, 2009). To respond to the challenge raised by these radically contingent threats, new anticipatory techniques of risk management have risen to prominence which are no longer grounded in probabilistic methods but instead look to invoke a cross-section of the multiple futures which *could* actualise in order to facilitate precaution, preparation and pre-emption (Anderson, 2010a, 2010b; Aradau & Munster, 2007; Lakoff, 2007). Liberal subjects, who can no longer be sufficiently protected from these threats by the state, are now to be responsabilised through good governance to become autonomous actors with a moral responsibility to better manage their own individual risks (Barry, Osborne, & Rose, 1996; Miller & Rose, 2008; O’Malley, 2004).

Resilience strategies have emerged as a response to the shift in liberal security imaginaries towards unknowable and potentially catastrophic futures (Aradau & Munster, 2011). It resonates with logics of precaution (Aradau & Munster, 2007; Ewald, 2002; Massumi, 2005), preparedness (Aradau, 2010; Collier, 2008; Lakoff, 2007), and pre-emption (Cooper, 2006a; de Goede, 2008; Massumi, 2007) within an increasingly influential anticipatory assemblage of security seeking to govern the radical contingency of contemporary threat (Dillon & Reid, 2009; Dillon, 2006, 2007, 2008). Departing from the predictive and standardizing techniques of the Welfare State, resilience technologies look to manufacture systems and subjectivities capable of adapting to change and uncertainty (Lentzos & Rose, 2009; O’Malley, 2010). In an explicit criticism of risk-based logics of protection, resilience strategies aim at the production of systems capable of living-with, or even *embracing* (Baker & Simon, 2002), risk.

The radical transformation in the rationalities and practices comprising liberal security governance has led some to question whether this represents the ‘death of the social’ (N. Rose, 1996) and others whether these techniques might still be rightfully recognised as biopolitical (Massumi, 2009)? This book maintains that a biopolitical analytic is most appropriate for understanding these changes. It does so in accord with contemporary research interested in the biopolitical implications of more general transformations in the understanding of species-life advanced within the associated digital and molecular revolutions (Cooper, 2006a, 2008; Dillon & Lobo-Guerrero, 2008, 2009; Dillon & Reid, 2001, 2009; N. Rose, 2007). Dillon and Lobo-Guerrero explain that taken together these revolutions are advancing a particular speciation of life understood as “a complex adaptive and continuously emergent, informationally constituted, system” (Dillon & Lobo-Guerrero, 2009: 1). Resilience corresponds to a mode of valuing life in relation to its capacity to adapt and transform through processes of complex emergence. Such a speciation represents a distinct way of understanding, problematising and valuing life. As such, it issues new imperatives to biopolitical governance.

Rather than operating to tame the milieu of the population, contemporary biopolitical governance is directed towards mastering the conditions of regeneration and transformation of a range of open systems displaying the life-properties of complex emergence. Resilience is a measure of evolutionary fitness required to thrive in radically uncertain and precarious worlds. Drawing on a myriad of specialist knowledges, resilience initiatives seek to invest life with the capacity to quickly and efficiently adapt, regenerate and transform in the presence of an emergency event. The contingency of emergent species-life and the

correlative study of its complex adaptive behaviour respectively provide a target and an epistemic base for biopolitical security interventions. When life became understood in terms of its pluripotentiality (Cooper, 2006b, 2008; Waldby, 2002)—that is, as capable of differentiation through multiple developmental potentialities—the objective of biopolitical security initiatives shifted to asserting “control and command [over] the morphogenetic process itself” (Dillon & Lobo-Guerrero, 2008: 287). The knowledge of how to provoke conditions of emergence to make life live may also inform initiatives designed to pre-empt the emergence of undesirable forms of life in increasingly effective and economical ways (Cooper, 2006a). Mastery over the conditions of emergence for life-itself thus offers a new threshold for biopolitical governance—but it also provides a new science for a thanatopolitics directed to killing those forms of life found inimical to liberal life. The value of resilience represents the new telos of these biopolitical security initiatives.

Chapter Outline

While this study proceeds chronologically it does not purport to provide an extensive history of UK civil contingencies management.ⁱⁱ It instead looks to analyse those relatively rare events which broke open long periods of organizational stasis and drift with a punctuated burst of debate, reflection, creativity and change. Acting as problematizations these events served to call existing modes of practice into question thereby opening a space for new ways of understanding and evaluating to take shape. Analysing these events thus allows us to trace important shifts in the institutional structures of security including the introduction, development and migration of rationalities and practices of governance which comprise them. More profoundly, an analysis of such events permits us to trace the evolution of the idea of

security itself. The event, according to Deleuze, signals a shift in the hierarchy of forces which give something its sense (Deleuze, 1983: 3-6). It represents “the reversal of a relationship of forces, the usurpation of power, the appropriation of a vocabulary turned against those who had once used it (Foucault, 1994: 381). Yet, Foucault notes, “the forces operating in history do not obey destiny or regulative mechanisms, but the luck of the battle” (Foucault, 1994: 381). A genealogy of resilience therefore will not trace the linear development, and growing perfection of a thing over time, but instead draw attention to the historical contingency—the debates, controversies and, most importantly, the *politics*—of what has been construed as logical, necessary and natural.

Each chapter in this book is organised around an important event in the reorientation of economies of security from values associated with stability, including fortitude, robustness and stoicism, to those of resilience. Chapter 1 begins by locating the biopolitical imperative driving the formal institutionalization of a British machinery of emergency governance in the years following the First World War in order to secure the ‘essentials of life’ from industrial unrest. Each subsequent chapter goes on to trace the historical conditions under which resilience displaced stability as the primary value of British emergency governance. Chapter 2 analyses the development of techniques of preparedness in respect to the security problematic posed by the advent of thermonuclear war and the threat it posed to the ‘survivability’ of the British nation. Chapter 3 traces the consolidation of resilience discourses in the 1970s in relation to an emergent epistemological order forged in relation to the advent of neoliberal techniques of governance. Chapter 4 details the operationalisation of resilience strategies within the realm of state security via the application of concepts and strategies developed within the Revolution in Military Affairs (RMA) which proved influential in the

reorganization of UK civil contingencies management after the collapse of the Cold War. Chapter 5 investigates how governmental technologies are being employed to fashion 'resilient subjects'. A short conclusion will draw on the analysis undertaken in these chapters in returning to the question of the value of resilience.

References:

- Adger, W. N. (2000). Social and ecological resilience: are they related? *Progress in Human Geography*, 24(3), 347–364. Vol. 24, pp. 347–364.
- Anderies, J. M., Walker, B. H., & Kinzig, A. P. (2006). Fifteen Weddings and a Funeral: Case Studies and Resilience-based Management. *Ecology and Society*, 11(1), 21–33. Vol. 11, pp. 21–33.
- Anderson, B. (2010a). Preemption, precaution, preparedness: Anticipatory action and future geographies. *Progress in Human Geography*, 34(6), 777–798. Vol. 34, pp. 777–798.
- Anderson, B. (2010b). Security and the future: Anticipating the event of terror. *Geoforum*, 41(2), 227–235. Vol. 41, pp. 227–235.
- Aradau, C. (2010). The Myth of Preparedness. *Radical Philosophy*, 161, 1–7. Vol. 161, pp. 1–7.
- Aradau, C., & Munster, R. Van. (2007). Governing Terror Through Risk: Taking Precautions, (un)Knowing the Future. *European Journal of International Relations*, 13, 89–115. Vol. 13, pp. 89–115.
- Aradau, C., & Munster, R. Van. (2011). *Politics of Catastrophe: Genealogies of the Unknown*. London & New York: Routledge.
- Baker, T., & Simon, J. (2002). Embracing Risk: The Changing Culture of Insurance and Responsibility. Chicago: University of Chicago Press.
- Bancroft, A. (2004). *Parental drug and alcohol misuse : resilience and transition among young people*. York: Joseph Rowntree Foundation, p. x, 41 p.
- Barabási, A. (2007). The Architecture of Complexity. *IEEE Control Systems Magazine*, 33–42. pp. 33–42.
- Barry, A., Osborne, T., & Rose, N. (1996). *Foucault and political reason: Liberalism, neo-liberalism, and rationalities of government*. Chicago: University of Chicago Press.
- Bataille, G. (1991). *The Accursed Share, An Essay on General Economy: Vol, 1 Consumption*. New York: Zone Books.
- BBC News. (2005a, July 8). Markets recover from UK bombings. *BBC News Online*.
- BBC News. (2005b, July 18). Tube Driver tells of bomb chaos. *BBC News Online*.
- Beatley, T. (2009). *Planning for coastal resilience : best practices for calamitous times*. Washington, DC ; London: Island Press, p. xvi, 181 p.
- Birkmann, J. (2006). *Measuring vulnerability to natural hazards: Towards disaster resilient societies*. Tokyo: United Nations University Press.

- Brand, F. S., & Jax, K. (2007). Focusing the meaning(s) of resilience: Resilience as a descriptive concept and a boundary object. *Ecology and Society*, 12(1), 23. Vol. 12, p. 23.
- Brigilio, L., Cordina, G., Bugeja, S., & Farrugia, N. (2005). *Conceptualising and Measuring Economic Resilience*. Malta: Island and Small States Institute.
- Briguglio, L. (2008). *Small states and the pillars of economic resilience*. Malta: Islands and Small States Institute of the University of Malta ; London : Commonwealth Secretariat, p. 424 p.
- Brookbanks, M., Gandy, T., & Hilbert, M. (2002). *Operational resilience: the art of risk management*. Canterbury: Financial World Pub.
- Burgess, J. P. (2011). *The Ethical Subject of Security: Geopolitical Reason and the Threat Against Europe*. London and New York: Routledge.
- Cantril, H. (1943). Causes and Control of Riot and Panic. *Public Opinion Quarterly*, 7(4), 669–579. Vol. 7, pp. 669–579.
- Clarke, L. (2002). Panic: myth or reality? *Contexts*, 1(3), 21–26. Vol. 1, pp. 21–26.
- Coaffee, J. (2003). *Terrorism. Risk and the City: The making of a contemporary urban landscape*. Aldershot: Ashgate.
- Coaffee, J. (2009). Protecting the Urban: The Dangers of Planning for Terrorism. *Theory, Culture & Society*, 26(7-8), 343–355. Vol. 26, pp. 343–355.
- Coaffee, J., & Rogers, P. (2008). Rebordering the City for New Security Challenges: From Counter-terrorism to Community Resilience. *Space and Polity*, 12(1), 101–118. Vol. 12, pp. 101–118.
- Cocking, C., Drury, J., & Reicher, S. (2009). The psychology of crowd behaviour in emergency evacuations: Results from two interview studies and implications for the Fire and Rescue Services. *The Irish Journal of Psychology*, 30(1-2), 59–73. Vol. 30, pp. 59–73.
- Cohen, R., Erez, K., ben-Avraham, D., & Havlin, S. (2006). Resilience of the Internet to random breakdowns. In M. Newman, A. Barabási, & D. Watts (Eds.), *The Structure and Dynamics of Networks*. Princeton: Princeton University Press, pp. 507–510.
- Coleman, J., & Hagell, A. (2007). *Adolescence, risk and resilience : against the odds*. Chichester: John Wiley, p. 205 p.
- Collier, S. (2008). Enacting catastrophe: preparedness, insurance, budgetary rationalization. *Economy and Society*, 37(2), 224–250. Vol. 37, pp. 224–250.
- Cooper, M. (2006a). Pre-empting Emergence: The Biological Turn in the War on Terror. *Theory, Culture & Society*, 23(4), 113–135. Vol. 23, pp. 113–135.

- Cooper, M. (2006b). Resuscitations: Stem Cells and the Crisis of Old Age. *Body & Society*, 12(1), 1–23. Vol. 12, pp. 1–23. doi:10.1177/1357034X06061196
- Cooper, M. (2008). *Life as Surplus: Biotechnology & Capitalism in the Neoliberal Era*. Seattle: University of Washington Press.
- Croft, W. (2006). Vulnerability and resilience in adults who as children witnessed violence between parents. Norwich: University of East Anglia.
- Daase, C., & Kessler, O. (2007). Knowns and Unknowns in the 'War on Terror': Uncertainty and the Political Construction of Danger. *Security Dialogue*, 38(4), 411–434. Vol. 38, pp. 411–434.
- De Goede, M. (2008). The Politics of Preemption and the War on Terror in Europe. *European Journal of International Relations*, 14(1), 161–185. Vol. 14, pp. 161–185.
- Deleuze, G. (1983). *Nietzsche and Philosophy*. London: Continuum.
- Deleuze, G., & Guattari, F. (2004). *Anti-Oedipus*. Minneapolis: University of Minnesota Press.
- Dillon, M. (2006). Governing through contingency: The Security of biopolitical governance. *Political Geography*.
- Dillon, M. (2007). Governing Terror: The State of Emergency of Biopolitical Emergence. *International Political Sociology*, 1(1), 7–28. Vol. 1, pp. 7–28.
- Dillon, M. (2008). Underwriting Security. *Security Dialogue*, 39(2-3), 309–332. Vol. 39, pp. 309–332.
- Dillon, M., & Lobo-Guerrero, L. (2008). Biopolitics of Security in the 21st Century: An introduction. *Review of International Studies*, 34, 265–292. Vol. 34, pp. 265–292.
- Dillon, M., & Lobo-Guerrero, L. (2009). The Biopolitical Imaginary of Species Being and The Freedom to Underwrite in the Molecular Age. *Theory, Culture & Society*, 26(1), 1–23. Vol. 26, pp. 1–23.
- Dillon, M., & Reid, J. (2001). Global Liberal Governance: Biopolitics, Security and War. *Millennium: Journal of International Studies*, 30(1), 41–66. Vol. 30, pp. 41–66.
- Dillon, M., & Reid, J. (2009). *The Liberal Way of War: Killing to Make Life Live*. Milton Park: Routledge.
- Drury, J., Cocking, C., & Reicher, S. (2009). The Nature of Collective Resilience: Survivor Reactions to the 2005 London Bombings. *International Journal of Mass Emergencies and Disasters*, 27(1), 66–95. Vol. 27, pp. 66–95.
- Ericson, R., & Doyle, A. (2004). Catastrophe Risk, Insurance and Terrorism. *Economy and Society*, 33(2), 135–173. Vol. 33, pp. 135–173.

- Evans, B., & Reid, J. (2014). *Resilient Life: The Art of Living Dangerously*. Polity Press.
- Ewald, F. (2002). The Return of Descartes's Malicious Demon: An Outline of the Philosophy of Precaution. In T. Baker & J. Simon (Eds.), *Embracing Risk: The Changing Culture of Insurance and Responsibility*. Chicago: University of Chicago Press, pp. 273–301.
- Folke, C. (2006). Resilience: The emergence of a perspective for social–ecological systems analyses. *Global Environmental Change*, 16(3), 253–267. Vol. 16, pp. 253–267. doi:10.1016/j.gloenvcha.2006.04.002
- Folke, C., Carpenter, S., Elmqvist, T., Gunderson, L., Holling, C. S., Walker, B., ... Svedin, U. (2002). *Resilience and Sustainable Development: Building Adaptive Capacity in a World of Transformations*. *Ambio*. Stockholm, Sweden.
- Foucault, M. (1977). *Discipline and Punish: the birth of the prison*. New York: Random House.
- Foucault, M. (1994). Nietzsche, Genealogy, History. In J. Faubian (Ed.), *Aesthetics, Method and Epistemology: Essential Works of Foucault 1954-1984 Vol. 2*. London: Penguin Books, pp. 369–392.
- Foucault, M. (1998). *The History of Sexuality, Volume One: The Will to Knowledge*. London: Penguin Books.
- Foucault, M. (2003). *Society Must Be Defended : lectures at the Collège de France, 1975-76*. London: Penguin.
- Foucault, M. (2007). *Security, Territory, Population: lectures at the Collège de France, 1977-1978*. Houndmills, Basingstoke, Hampshire ; New York: Palgrave Macmillan, p. xvii, 417 p.
- Foucault, M. (2008). *The Birth of Biopolitics: lectures at the College de France, 1978-1979. Michel Foucault: lectures at the Collège de France*. Basingstoke: Palgrave Macmillan, pp. xvii, 346.
- Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What good are positive emotions in crisis? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of Personality and Social Psychology*, 84(2), 365–376. Vol. 84, pp. 365–376.
- Gorman, S. P. (2005). *Networks, Security and Complexity: The role of public policy in critical infrastructure protection*. Cheltenham: Edward Elgar Publishing Ltd.
- Gunderson, L. H., & Holling, C. S. (2002). *Panarchy : understanding transformations in human and natural systems*. Washington, DC ; London: Island Press.
- Hamilton, A. (2005, July 8). Panic, shoving, fear of fire and bonding below ground. *The Times [Final 2 Edition]*, p. p. 6. London, UK, p. p. 6.

- Handmer, J. W., & Dovers, S. R. (1996). A Typology of Resilience: Rethinking Institutions for Sustainable Development. *Organization & Environment*, 9(4), 482–511. Vol. 9, pp. 482–511. doi:10.1177/108602669600900403
- Hennessy, P. (2010). *The Secret State: Preparing for the Worst 1945-2010*. London: Penguin Books.
- Henning, M. (2005, July 8). Attack on London: Aldgate: Stunned silence, darkness, panic, then calm: 8.51am. *The Guardian [online]*, p. p. 4. London, UK, p. p. 4.
- Holling, C. S. (1996). Engineering resilience versus ecological resilience . In P. Schulze (Ed.), *Engineering within ecological constraints*. Washington, D.C.: National Academy Press, pp. 31–44.
- Hollnagel, E., Paries, J., Woods, D. D., & Wreathall, J. (2011). *Resilience Engineering in Practice: A Guidebook*. Ashgate Publishing Company.
- Hollnagel, E., Woods, D. D., & Leveson, N. (2006). *Resilience engineering : concepts and precepts*. Aldershot: Ashgate, p. xii, 397 p.
- Johnson, N. (1985). Panic and the breakdown of social order: Popular myth, social theory and empirical evidence. *Sociological Focus*, 20(3), 171–183. Vol. 20, pp. 171–183.
- Joseph, S., & Linley, P. A. (2008). *Trauma, Recovery, and Growth Positive Psychological Perspectives on Posttraumatic Stress*. Hoboken, New Jersey: John Wiley and Sons, Inc.
- Kay, J. J., Regier, H. A., Boyle, M., & Francis, G. (1999). An Ecosystem Approach for Sustainability: Addressing the Challenge of Complexity . *Futures*, 31(7). Vol. 31.
- Keating, J. P. (1982). The myth of panic. *Fire Journal*, 76(3), 57–61. Vol. 76, pp. 57–61.
- Kindt, M. T. (2006). Building population resilience to terror attacks: Unlearned lessons from military and civilian experience. *The Counterproliferation Papers*, (Future Warfare Series 36).
- Lakoff, A. (2007). Preparing for the Next Emergency. *Public Culture*, 19(2), 247–271. Vol. 19, pp. 247–271.
- Lentzos, F., & Rose, N. (2009). Governing insecurity: contingency planning, protection, resilience. *Economy and Society*, 38(2), 230–254. Vol. 38, pp. 230–254.
- Lewis, T. G. (2009). *Network science: theory and practice*. John Wiley & Sons.
- Lobo-Guerrero, L. (2011). *Insuring Security: Biopolitics, Security and Risk*. London & New York: Routledge.
- London Chamber of Commerce and Industry. (2005). *The Economic Effects of Terrorism on London: Experiences of Firms in London's Business Community*. London.

- Massumi, B. (2005). The Future Birth of the Affective Fact. In *Genealogies of Biopolitics Conference*. (accessed online 10 January 2009
<http://www.radicalempricism.org/biotextes/textes/massumi.pdf>).
- Massumi, B. (2007). Potential Politics and the Primacy of Preemption. *Theory & Event*, 10(2), (no pagination). Vol. 10, p. (no pagination).
- Massumi, B. (2009). National Enterprise Emergency: Steps Towards an Ecology of Powers. *Theory, Culture & Society*, 26(6), 153–185. Vol. 26, pp. 153–185.
- Masten, A. S., Best, K. M., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology*, 2(4), 425–444. Vol. 2, pp. 425–444.
- McDonough, W. J. (2003). Promoting Financial Resilience. *Cato Journal*, 23(1). Vol. 23.
- Miller, P., & Rose, N. (2008). *Governing the Present*. Cambridge: Polity Press.
- Mitchiner, P. H. (1938). Gas Warfare and the Doctor's Responsibility to His Patients. *The British Medical Journal*, 1(4024), 93–95. Vol. 1, pp. 93–95.
- Moore, C., Boshier, L., Coaffee, J., & Fletcher, D. (2008). Resilient design for community safety and terror-resistant cities. *Proceedings of the ICE - Municipal Engineer*, 161(2), 103–110. Vol. 161, pp. 103–110. doi:10.1680/muen.2008.161.2.103
- Moyes, S. (2005, July 8). 07/07: Terror In London: WE'RE GOING TO DIE! WE'RE GOING TO DIE! ; Cries pierce choking air as survivors flee twisted wreckage of Tube trains. *The Daily Mirror [EIRE Edition]*, p. p. 4. London, UK, p. p. 4.
- Muir, H., & Cowan, R. (2005, July 8). Four bombs in 50 minutes - Britain suffers its worst-ever terror attack. *The Guardian*.
- Najjar, W., & Gaudiot, J. L. (1990). Network resilience: a measure of network fault tolerance. *IEEE Transactions on Computers*, 39(2), 174–181. Vol. 39, pp. 174–181.
- Neocleous, M. (2013). Resisting Resilience. *Radical Philosophy*, 178(March/April), 2–7. Vol. 178, pp. 2–7.
- Nietzsche, F. (1968). *The Will to Power*. New York: Random House.
- Nietzsche, F. (1989). *Beyond Good and Evil: Prelude to a Philosophy of the Future*. New York: Random House.
- Nietzsche, F. (2007). *On the Genealogy of Morality*. Cambridge: Cambridge University Press.
- O'Malley, P. (2004). *Risk, Uncertainty and Government*. London: The Glasshouse Press.
- O'Malley, P. (2010). Resilient Subjects: Uncertainty, Warfare and Liberalism. *Economy and Society*, 39(4), 488–509. Vol. 39, pp. 488–509.

- Office of Civil Defence. (1951). *Panic Control and Panic Prevention: Instructor's Manual and Teaching Outline*. Sacramento, CA.
- Orr, J. (2006). *Panic Diaries: A genealogy of panic disorder*. Durham: Duke University Press.
- Ottens, M., Franssen, M., Kroes, P., & Van De Poel, I. (2006). Modelling infrastructures as socio-technical systems. *International Journal of Critical Infrastructures*, 2(2/3), 133–145. Vol. 2, pp. 133–145.
- Page, L., Rubin, J., Amlôt, R., Simpson, J., & Wessely, S. (2008). Are Londoners Prepared for an Emergency? A Longitudinal Study Following the London Bombings. *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*, 6(4), 309–319. Vol. 6, pp. 309–319.
- Paton, D., & Johnston, D. M. (2006). *Disaster resilience: an integrated approach*. Springfield, Ill.: Charles C Thomas, p. xxii, 321 p.
- Paton, D., Violanti, J. M., & Smith, L. M. (2003). *Promoting capabilities to manage postraumatic stress : perspectives on resilience*. Springfield, Ill.: Charles C. Thomas Pub, p. xxii, 222 p.
- Radvanovsky, R., & McDougall, A. (2010). *Critical Infrastructure: Homeland Security and Emergency Preparedness, Second Edition*. London: CRC Press.
- Reid, J. (2012). The Disastrous and Politically Debased Subject of Resilience. *Development Dialogue*, 58, 67–80. Vol. 58, pp. 67–80.
- Rose, A. (2003). Defining and measuring economic resilience to disasters. *Disaster Prevention and Management*, 13(4), 307–314. Vol. 13, pp. 307–314.
- Rose, A. (2007). Economic Resilience to natural and man-made disasters: multi-disciplinary origins and contextual dimensions. *Environmental Hazards*, 7(4), 383–398. Vol. 7, pp. 383–398.
- Rose, N. (1996). The Death of the Social? Re-figuring the territory of government. *Economy and Society*, 25(3), 327–356. Vol. 25, pp. 327–356.
- Rose, N. (2007). *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century*. Princeton & Oxford: Princeton Univ Press.
- Rubin, G. J., Brewin, C. R., Greenberg, N., Simpson, J., & Wessely, S. (2005). Psychological and Behavioral Reactions to the Bombings in London on 7 July 2005: Cross Sectional Survey of a Representative Sample of Londoners. *British Medical Journal*, 331, 606–611. Vol. 331, pp. 606–611.
- Rynearson, E. K. (2006). *Violent death : resilience and intervention beyond the crisis*. New York, N.Y. ; London: Routledge, p. xxxiv, 389 p.

- Scalingi, P. (2007). Moving Beyond Critical Infrastructure Protection to Disaster Resilience. In *Critical Thinking: Moving from infrastructure protection to infrastructure resilience*. George Mason University, pp. 49–72.
- Schoch-Spana, M. (2008). Community Resilience for Catastrophic Health Events. *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*, 6(2), 129–130. Vol. 6, pp. 129–130.
- Sheffi, Y. (2005). *The Resilient Enterprise: Overcoming Vulnerability for Competitive Advantage*. Cambridge: MIT Press.
- Sheppard, B., Rubin, G. J., Wardman, J. K., & Wessely, S. (2006). Terrorism and dispelling the myth of a panic prone public. *Journal of public health policy*, 27(3), 219–45; discussion 246–9. Vol. 27, pp. 219–45; discussion 246–9. doi:10.1057/palgrave.jphp.3200083
- Tierney, K. (2003). Disaster Beliefs and Institutional Interests: Recycling Disaster Myths in the Aftermath of 9-11. In L. Clarke (Ed.), *Terrorism and Disaster: New Threats, New Ideas*. Oxford: Elsevier Ltd., pp. 33–52.
- Trim, R. (2005). An integrative approach to disaster management and planning. *Disaster Prevention and Management*, 13(3), 218–225. Vol. 13, pp. 218–225.
- United Nations Development Programme. (2004). *Reducing Disaster Risk: A Challenge for Development, A Global Report*. New York: UN Publications.
- United Nations Environment Programme. (2004). *Exploring the Links: Human Well-Being, Poverty & Ecosystem Services*. Nairobi: UN Publications.
- Waldby, C. (2002). Stem Cells, Tissue Cultures and the Production of Biovalue. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine*, 6(3), 305–323. Vol. 6, pp. 305–323. doi:10.1177/136345930200600304
- Washington Post. (2005, July 8). Economies Resilient After Attacks; Global Markets Recover Following London Bombings. *Washington Post*.
- Waters, C. D. J. (2007). *Supply chain risk management : vulnerability and resilience in logistics*. London: Kogan Page, p. viii, 256 p.
- Werner, E., & Smith, R. (1989). *Vulnerable but Invincible: A Longitudinal Study of Resilient Children and Youth*. New York: Adams, Bannister, and Cox.
- Werner, E., & Smith, R. (1992). *Overcoming the Odds: High-Risk Children from Birth to Adulthood*. New York: Cornell University Press.
- Wessely, S. (2005a). Victimhood and Resilience. *The New England Journal of Medicine*, 353, 548–550. Vol. 353, pp. 548–550.

Wessely, S. (2005b). Don't panic! Short and long term psychological reactions to the new terrorism: The role of information and the authorities. *Journal of Mental Health*, 14(1), 1–6. Vol. 14, pp. 1–6.

Wessely, S. (2005c). The bombs made enough victims--let's not make more. *Spiked Online*, <http://www>. Vol. <http://www>.

ⁱ The notion of resilience can be found in discourses pertaining to environmental sustainability (Beatley, 2009; Gunderson & Holling, 2002; Kay, Regier, Boyle, & Francis, 1999), natural disasters (Paton & Johnston, 2006; Trim, 2005), animal and public health (Schoch-Spana, 2008), anti-terrorism (Coaffee, 2003; Lentzos & Rose, 2009; Page et al., 2008), economics (Briguglio, 2008; A. Rose, 2003, 2007), finance (McDonough, 2003), business contingency planning (Brookbanks, Gandy, & Hilbert, 2002; Sheffi, 2005; Waters, 2007), critical infrastructure protection (Gorman, 2005; Ottens, Franssen, Kroes, & Van De Poel, 2006; Radvanovsky & McDougall, 2010; Scalingi, 2007), engineering (Hollnagel, Paries, Woods, & Wreathall, 2011; Hollnagel, Woods, & Leveson, 2006), network science (Barabási, 2007; Cohen, Erez, ben-Avraham, & Havlin, 2006; Najjar & Gaudiot, 1990), economic development (United Nations Development Programme, 2004; United Nations Environment Programme, 2004), urban planning (Coaffee & Rogers, 2008; Coaffee, 2009; Moore, Boshier, Coaffee, & Fletcher, 2008), child psychology (Bancroft, 2004; Coleman & Hagell, 2007; Croft, 2006), and psychological trauma (Joseph & Linley, 2008; Paton, Violanti, & Smith, 2003; Rynearson, 2006; Wessely, 2005a)—to name just a selection.

ⁱⁱ Detailed histories of British emergency planning and response are provided by Jeffery and Hennessy (1983) and Geary (1985).