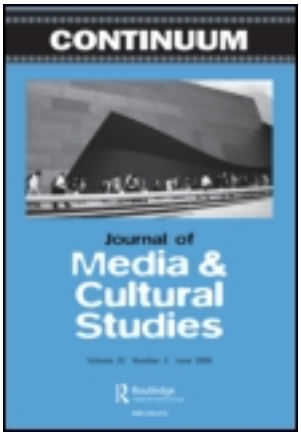

Continuum: Journal of Media & Cultural Studies
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/ccon20

Navigating complexity: From cultural critique to cultural intelligence

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Published online: 29 Nov 2011.

To cite this article: Ien Ang (2011) Navigating complexity: From cultural critique to cultural intelligence, Continuum: Journal of Media & Cultural Studies, 25:6, 779-794, DOI: 10.1080/10304312.2011.617873

To link to this article: http://dx.doi.org/10.1080/10304312.2011.617873

Continuum: Journal of Media & Cultural Studies
Vol. 25, No. 6, December 2011, 779–794

Navigating complexity: From cultural critique to cultural intelligence

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That the world is terribly complex is now a vital part of global cultural experience, a structure of feeling which has grown more pervasive in the 21st century. How do we find ways of navigating the complex challenges of our time? And what role can we, as cultural researchers, play in this task? Much humanities and social science scholarship in the past few decades has embraced complexity, so much so that the pursuit of complexity (e.g. in scholarly theorizing) has become an end in itself, a key element in the production of cultural critique. In this essay, I argue that if we wish to engage with the real-world need to deal with complex realities, cultural research must go beyond deconstructive cultural critique and work towards what I call 'cultural intelligence'. The development of sophisticated and sustainable responses to the world's complex problems *requires* the recognition of complexity, not for complexity's own sake, but because simplistic solutions are unsustainable or counter-productive. At the same time, cultural intelligence also recognizes the need for simplification to combat the paralyzing effects of complexity. Developing simplifications should not be equated with being simplistic. While being simplistic is tantamount to a reductionism which dispenses with complexity, simplification allows us to plot a course *through* complexity. To put the question simply, how does one simplify without being simplistic?

Introduction: Complexity in need of simplification

It is a truism now to say that we live in a world burdened by exceptionally complex and intractable problems. Economic instability, the widening gap between rich and poor, climate change and the environmental crisis, the unstoppable transnational flow of refugees despite increasingly harsh regimes of border control, the threat of terrorist movements, rising geopolitical tensions as the hegemony of the West declines, urban gridlock and conflict in our hyper-diverse cities, the unsustainable costs of health care in times of population ageing, and the unsettling impact of rapid technological change – these are only a few of the large conundrums facing our globalized, interconnected world today. Such challenges are the product of long-term developments which do not have a single origin, and their fallout manifests itself in a wide range of spheres and at varying scales, from the intimately local to the encompassingly global. They affect people's livelihoods in radically contradictory ways. In short, everywhere in the world complexity is staring us in the face; its overwhelming impact – socially, economically, ecologically – is increasingly undeniable and inescapable. That the world is terribly complex is now a vital part of global cultural experience, a structure of feeling which has grown more pervasive in the twenty-first century.

What remains unclear, however, is how we should respond to this complexity in practice. How can we navigate the complex realities of our time and find effective

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ISSN 1030-4312 print/ISSN 1469-3666 online

http://dx.doi.org/10.1080/10304312.2011.617873
http://www.tandfonline.com

'solutions' for managing them? I put 'solutions' in quotation marks here because it is all too evident that there are, as the saying goes, no silver bullets for the complex challenges of our time. In other words, in a complex world problem-solving can only be a partial, provisional and indefinite affair, with uncertain and indeterminate outcomes.

But the reality of this complexity is difficult to communicate, let alone make palatable to the public at large. As Laidi puts it, 'The complexification of the real creates the need for a simplification of its enunciation' (2007, 178). This means that dealing with complexity requires a way of making it easier to handle, not least in the imagination. That is, we should see simplification as a necessary, but never definitive way of dealing with complexity. Simplification is enabling: it allows us to 'contain' the complex and to act on it. However, it provides only a temporary relief from the paralyzing effects of the latter. As Mol and Law (2002, 3) observe, simplifications that reduce a complex reality to a simple scheme tend to 'forget' about the complex, but the latter may reappear later as a surprising or disturbing element that could not be fit into the simple scheme. Thus, rather than imposing an absolute simplicity, as in the case of being simplistic, simplification is part of an ongoing process. While being simplistic is tantamount to a reductionism which dispenses with complexity, simplification allows us to plot a course *through* complexity. Indeed, contemporary societies are awash with simplifying mechanisms designed to navigate the multiplying complexities of modern life. The point here, as Mol and Law (2002) argue, is not simply to reject or denounce simplifications, but to examine how they work as more or less effective ways of handling complex realities. Indeed, while simplifying things is often necessary if we are to act in a complex world, making our accounts of that world *too* simple may in fact be counter-productive. To put the question simply, how does one simplify without being simplistic?

This is an empirical question, to be asked within the context of particular problems or challenges occurring in particular instances of social practice. The essays in this special issue of *Continuum* address the question of complexity in this way. Each of them focuses on a concrete subject matter or issue, drawing attention to its distinctive complexities. More than just describing those complexities, however, the authors also discuss how we might effectively act on these complex realities. Some propose possible modes of strategic simplification, while others demonstrate that it is only by taking complexity seriously that we may find practical ways of addressing the problems raised. Whatever the case may be, this special issue showcases how cultural research can go beyond deconstructive cultural critique, and engage with the real-world need for dealing with complexity by contributing to what I call 'cultural intelligence'. I will return to this at the end of this essay.

Cultural intelligence involves a mode of analysis which does not reduce the complexity of particular realities to some underlying simplicity, but proceeds by acknowledging that complexity is inherent and open-ended. We argue that the development of sophisticated and sustainable responses to the world's complex problems *needs* the recognition of complexity, not for complexity's own sake, but because simplistic solutions will no longer be sustainable – in government, in policy, in organizations, in public culture, in everyday life. In other words, this special issue asks: how do we square the recognition of complexity with imaginative, non-simplistic ways of dealing with it?

Complexity theory: Articulating the Zeitgeist

Metaphors of complexity have been influential for some time in scholarly discourse, most visibly – though by no means exclusively – in the guise of 'complexity theory'. Originating in the world of the natural sciences, complexity theory unsettled the Newtonian view of the

world, which has been dominant in Western science and culture until well into the twentieth century. With its emphasis on linearity, order and predictability, this dominant view is embodied in the pervasiveness of the principles of positivism in the human and social sciences even until today (Steinmetz 2005).

When I was a psychology student in the early 1970s, I found myself submitted to a discipline where the hegemony of positivist scientism was particularly forceful. Positivism as an epistemology holds that the scientific method of uncovering laws of behaviour is the only way to produce valid, certain and objective knowledge. I was taught that in order to make my research scientific, it has to be replicable, falsifiable and precise (by which is meant measurable). Above all, it has to be parsimonious. This principle of parsimony is especially confining, as it states that the simplest explanation possible should be applied to any set of empirical observations. In other words, for positivism extreme simplification – and the elimination of complexity – is the preferred route to superior, scientific knowledge. Positivism, then, is reductionism par excellence; it insists that we can (and must) explain complex realities by reducing them to simple, unchanging laws. Banned from the positivist world view is the possibility of multiple meanings and realities, and ambiguity and paradox were relegated to the realm of the unscientific.

What has come to be called complexity theory – a range of scientific theories which stress non-linearity, unpredictability and self-organization in the way systems work – can be seen as a revolt against the positivist worldview in science. Complexity theory, a more generalized and broader version of chaos theory, describes the world as complex to the extent that it consists of always-changing, unstable and dynamic systems, where there is no consistent relationship between different elements, and where the whole has emergent properties which makes it always larger than the sum of the parts. Interactions between parts may produce unpredictable effects which, however small, may lead to massive changes in the future; there is no necessary proportionality, nor simple linearity, between 'causes' and 'effects' (see, for example, Waldrop 1992; Stengers 1997).

This radically anti-positivist theory has struck a chord. By the late twentieth century, concepts such as strange attractors, emergence, non-linearity, the butterfly effect and the idea of 'living at the edge of chaos' have become a popular vocabulary far beyond the world of science. Complexity theory principles have already been applied in the corporate sector, as illustrated by books such as *The complexity advantage* (Kelly and Allison 1999), *Harnessing complexity* (Axelrod and Cohen 2000) and the recent IBM report *Capitalizing on complexity* (IBM Corporation 2010). In each of these, the message is that in a rapidly changing and highly competitive global marketplace corporate structures can no longer depend on a rigid command-and-control style of management, but need to embrace complexity as an organizational tool. Meanwhile, references to chaos and complexity theory have been avidly made as narrative devices in popular culture from *The Simpsons* to *Jurassic Park*.

Thrift (2005) observes that the popularity of complexity theory is a sign of a wider cultural shift, characterized by 'seeing complexity' in the world. The idea that the world is irrevocably complex is now an important part of the *Zeitgeist*, an emergent, twenty-first-century structure of feeling. As Mitchell (2009) points out, the word *complex* comes from the Latin root *plectere*, meaning to weave, entwine: 'In complex systems, many simple parts are irreducibly entwined, and the field of complexity is itself an entwining of many different fields' (Mitchell 2009, 4). This vision resonates with the very real complexification of the world in the past few decades, in particular as a consequence of accelerating globalization.

One particularly important feature of early twenty-first-century culture and society is the impossibility of withdrawal from interconnections and interdependencies on a global

scale. We live in an increasingly networked world, where disparate and diverse entities and processes are inescapably entangled in multiplying and ever-changing webs of relationality (Castells 2000). Globalization has ushered in a condition of connectivity which has transformed the nature of (national) societies, as they lose their autonomy and sovereignty and become interwoven as 'elements within systems of global complexity' (Urry 2003, 107). An equally significant aspect of this globalized world is the intensification and massification of transnational flows and mobilities (of people, money, information, technologies, etc.) that traverse individual localities, stitching them into global processes which involve more than just occasionally lifting some people out of them. What these processes bring about is not the simple absorption of the local into the global, but the more complex and unavoidable enmeshment of the global in the local, and the local in the global, thus unsettling (though not dissolving) the very distinction between these two terms (Appadurai 1996; Tomlinson 1999; Massey 2005).

It is clear that this world cannot be adequately described in positivist terms; that is, as a simple reality consisting of fixed and separate entities (or 'variables'), each with a singular and unambiguous meaning and predictable, linear relations of cause and effect. It is not surprising, then, that complexity theory has travelled widely beyond its own specialist field (Thrift 2005). Complexity theory principles and metaphors have been introduced into a range of humanities and social science disciplines by authors such as Byrne (1998), Dimitrov and Hodge (2002) and Urry (2003). I would suggest that post-positivist engagement with the complexity of the contemporary world has been a much more general tendency in the humanities and social sciences, which is by no means limited to utilizing the specialist vocabulary of complexity theory. In other words, there has been a much wider complexity turn in scholarly discourse, where conceptual and methodological trends have increasingly, in various ways, revolted against simplification and sought to capture 'the complex'.

Cultural research and the complexity turn

An example of this complexity turn can be found in the work of renowned international relations theorist James Rosenau. During the first decades of his career he was a leading initiator of the behaviourist revolution in American social science, involving the scientific analysis of empirical data through the quantitative testing of hypotheses on patterns of human affairs and international politics. By the late 1970s, however, when the hegemony of positivist behaviourism was at its height, he underwent an intellectual transformation and began to question the adequacy of positivist premises for the analysis of international politics in a world of escalating complexity. As he puts it: 'The transformation involved relaxing the scientific criteria of parsimony and their dependence on quantitative analysis in favor of an interpretive approach that allowed for scientific methods but at the same time seemed more appropriate to the changes that were rendering world affairs ever more turbulent and complex' (Rosenau 2003, 407). He observes that today's globalized world is characterized by an endless series of interactive polarities – e.g. between global and local, core and periphery, states and markets, urban and rural, universalism and particularism, public and private, West and East, integration and disintegration – for which he introduces the label 'fragmegration'. If this word sounds grating and awkward, so be it, says Rosenau, as it expressly sensitizes us to 'the contradictory tensions wherein the world is simultaneously moving in opposite directions' (12). Referring to the post-Cold War period of accelerating neoliberal globalization, Rosenau borrows from the language of complexity theory to underscore 'the contradictions, ambiguities, complexities and uncertainties that have replaced the regularities of prior epochs. Consisting of nonlinear processes in which

every effect is a cause of yet another outcome in a complex and endless array of feedback loops, these contradictions, ambiguities, complexities, and uncertainties are, in effect, the regularities of our age of fragmegration' (12).

The fragmegrative dynamics of our time create a turbulent world which has profound implications for the organization and governance of societies. Established ways of thinking and doing things are no longer adequate. 'As the seventies moved into the eighties and the eighties into the nineties, national states seemed increasingly less competent to frame and move towards their goals' (409), Rosenau remarks. In this regard, the treatment of domestic and foreign policy as two separate realms, as is routinely the case in the work of national governments, is becoming increasingly problematic. As Rosenau points out, the boundaries between domestic and foreign affairs have become porous: 'what is domestic is also foreign and what is foreign is also domestic' (410). Indeed, many of the most intractable and urgent problems we are confronted with today – refugees and border control, Islamist terrorism, internet politics – are profoundly both domestic and foreign, national and international (or transnational), thus unsettling the certainty and neatness of that very divide.

The analytical separation between foreign and domestic politics has long been constitutive of the discipline of international relations, reinforcing a categorical simplification which is deeply institutionalized in the very system of modern nation-state governance and its assumptions of territorial sovereignty (Agnew 1994). But it has become increasingly problematic not only for our way of understanding the world, but also for acting within it. International relations theory, according to Rosenau (2003), must overcome this disciplinary trap if it is to produce adequate knowledge of the complexities of the 'fragmegrated' world we live in.

In a similar vein, leading sociologist Saskia Sassen argues that the social sciences must go beyond the assumption that the global and the national are two mutually exclusive entities. The global, she says, 'simultaneously transcends the exclusive framing of national states, yet partly inhabits, and gets constituted inside, the national' (Sassen 2007, 1). Globalization has destabilized fixed scalar hierarchies (such as the hierarchy between local, national and global) as the multiscalar and interscalar nature of many contemporary phenomena (such as the global city, Web 2.0 networks or global warming) has become more irrefutable. Such phenomena defy the presumption of closed underlying realities, whether territorial or social, because they occur simultaneously at multiple, mutually entwined scales. Importantly, they warrant the denaturalization of the national as the pre-eminent scale of analysis in much scholarship and research. Of course, recent scholarly work in transnationalism (Levitt and Khagram 2007; Vertovec 2009) and mobilities (Urry 2007), and the attendant focus on flows and networks, has begun to address this paradigm shift, which signals an undeniable intensification of the complexity turn in social and cultural research. But this also means that the so-called *cultural* turn in the humanities and social sciences – as epitomized by the rise of cultural studies since the 1970s – must be seen, epistemologically at least, as a turn to complexity.

Cultural studies and the cult of complexity

Let me illuminate this by starting out with a simple description of complexity. Mol and Law (2002, 1) characterize it this way: 'There is complexity if things relate but don't add up, if events occur but not within the processes of linear time, and if phenomena share a space but cannot be mapped in terms of a single set of three-dimensional coordinates'. In other words, what characterizes the complexity turn is an emphasis on irreducible multiplicity, historical

undecidability, and the simultaneous presence of contradictory elements, under the logic of both/and (rather than either/or).

Obviously, this kind of thinking is fundamental in a resolutely post-positivist (or anti-positivist) field such as cultural studies. It is intrinsic to what may be called a cultural studies sensibility, and it may in fact partly explain cultural studies' rapid rise in global popularity from the 1980s onwards. When I was first attracted to the now legendary work of the Birmingham Centre for Contemporary Cultural Studies almost 30 years ago, I was drawn particularly to this sensibility: a sense that the phenomena we seek to understand are always more complex than what positivist science claims to be the truth. I experienced the world as complex, full of paradoxes and ambiguities which defy the positivist mindset, and was searching for alternative ways of knowing it which would do justice to that complexity, making it understandable rather than reducing it to simplicities. Hence, the epiphany I felt when Williams (1974) described television, in the title of his classic book, as technology *and* cultural form. Here an explicit doubling of perspective was foregrounded which allowed for analytical approaches that treated television as a complex, multidimensional phenomenon with multiple meanings. Indeed, as I have argued elsewhere (Ang 2008), cultural studies can be described as a knowledge practice centrally concerned with the complexities of the relations between culture and society, or more simply, with cultural complexity.

There is little direct engagement with complexity theory in cultural studies, but some of the most important critical-theoretical underpinnings of cultural studies theorizing in the past three decades bear its concern with complexity out. The post-structuralist understanding of the subject as a complex intersection of multiple, situated and shifting subject positions. The anti-essentialist emphasis on identity (gender, racial, national) as always constructed in relation. The post-colonial emphasis on hybridity and 'third space', which unsettles the divide of sameness and difference. The Foucauldian notion of power/knowledge as dispersed and capillary. The Derridean idea of meaning as determined by a context that is never absolutely fixed, and therefore never fully captured. The Latourian redefinition of society from a distinct entity to an endless trail of association of heterogeneous elements (Latour 2005). All these critical-theoretical perspectives, each of them arguably manifestations of the complexity turn, have informed the fundamental cultural studies axiom of 'culture' as always in process, overdetermined by a multiplicity of diverse, intersecting forces, and always plural and dynamic, not reducible to a single origin. Across all these varied theoretical instances, cultural studies can be described in terms of an anti-reductionist 'revolt against simplification' (Mol and Law 2002, 1). Even cultural studies' notorious resistance to assume a clear-cut disciplinary identity can be seen as an expression of awareness of complexity! (Ang 2008)

This insistence on complexity has become a commonplace habit of thought, a routine discursive move not just in cultural studies, but in the postmodern humanities and social sciences more generally. Historian Russell Jacoby (2008) contends that there is a devotion to complexity in the academic humanities today. He observes how often the stated intent of scholarly papers or presentations in the conference circuit is now 'to complicate matters' rather than to clarify:

> We celebrate the fact that everything can be 'problematized'. We rejoice in discarding 'binary' approaches. We applaud ourselves for recognizing – once again – that everything varies by circumstances. We revel in complexity. (Jacoby 2008, online)

Jacoby refers in particular to the highly professionalized and inward-looking world of American academia, but some of the tendencies in what he calls the 'cult of complication' are amply detectable in the discourses of cultural studies. Our inclination to problematize,

contextualize, relativize, particularize, in short, complexify; to denounce everything that seems reductionist or essentialist; to reject all binary oppositions in favour of the blurring of boundaries; to replace unitary identities with multiplicities; to be suspicious of notions of coherence and homogeneity; to pluralize everything which used to be talked about in the singular (e.g. truth, culture, reality and of course complexity itself) – the routinized use of all these discursive proclivities suggests that the pursuit of complexity has become an end in itself in much cultural research today. For Jacoby (2008), this is a fashion which 'elevates confusion from a transitional stage into an end goal'. That is, complexity has become sought after for its own sake. But, as Jacoby (2008) asks: 'shouldn't scholarship seek to clarify, illuminate, or – egad! – simplify, not complicate? How did the act of complicating become a virtue?'

In Jacoby's view, the prevalence of this mindset in contemporary academia is the sign of a complacency which legitimizes, or excuses, the disengagement of academic knowledge from the public sphere, and as a consequence, its lack of impact beyond the confines of academia itself (Jacoby 2000). Indeed, the preference for complexity in academic discourse arguably ties in with the ubiquitous hermeneutics of suspicion guiding critical scholarship, not least in cultural studies. Here the impulse is one of 'heightened mistrust vis-à-vis commonsensical forms of language and thought' (Felski 2011), whose accounts of the world tend to be represented as needing relentless deconstructive questioning and critique. In this regard the turn toward complexity, the urge to complexify things, may be a key method to command scholarly authority: the penchant not to take things at face value but to disclose their unidentified complexities is generally taken as a mark of intellectual sophistication.

A small example is the common critical impulse in cultural studies to be suspicious of 'facts' and expose them as social constructions. However, as Bruno Latour has pointed out, in the current global controversy over climate change such a strategy of complexification problematically gives fuel to climate change deniers, who 'are using the very same argument of social construction to destroy hard-won evidence that could save our lives' (2004, 228). For Latour, this turn of events reinforces his worry that the political-intellectual project of critique has run out of steam.

The argument here is not that we should return to the linear reductionism of positivism, but that it is not enough for scholars to revel in the complexity of things. There's no denying that the world is complex, and arguably increasingly so, but the recognition of this complexity – in both the political and the academic realms – cannot be left hanging. We have to move beyond critique, beyond complexity. Complexity is *not* the message, or at least, not the *only* message! To reiterate Laidi (2007, 178), 'the complexification of the real creates the need for a simplification of its enunciation'. What this means is that, as cultural researchers, we need to do more than articulate how things are 'complex and contradictory'. What we should also aspire to, as part of our research endeavour, is explore what kinds of simplifications need to be developed in order to cope, deal with, or navigate the concrete complex realities we are confronted with.

Difficulties and messes

While scholars may relish complexity, living in a world where complexity rules is not easy. Such a world is ravaged by messy problems which are crying out for some resolution, but for which there are no simple answers. Chapman (2004) makes a distinction between two broad classes of problems: 'difficulties' and 'messes'. Difficulties are bounded problems about which there is broad agreement about the nature of the problem

and some accepted understanding of its possible solution. Here a linear model of simplification which gets to the core of the problem would prove effective to solve it. For example, when your car breaks down, you try to find the faulty part and replace it. In the case of 'messes', on the other hand, 'there is rarely agreement about where the problem actually lies or where improvements might best be made, and they are subject to high levels of uncertainty' (Chapman 2004, 36). Messy problems are unbounded in terms of the time and resources they could absorb, the scope of inquiry needed to understand them, and the number of people who may need to get involved. To put it differently, while difficulties may be complicated, in the sense that it may take some effort to know the problem before it can be solved, they are not complex. It may take some time to find which part of the car is faulty, but once found, you can fix it. Messes, on the other hand, are inherently complex in the sense that we can never fully pin down exactly what the problem is.[1]

Of course, as Chapman (2004) admits, this binary distinction between 'difficulties' and 'messes' is too simplistic; in practice most problems fall between these two extremes. Nevertheless, it is clear that many of the problems we are faced with in the world today are very messy. A key feature of a messy problem is that there are many valid perspectives on the issue or situation, many different interpretations of the available information. As a consequence the ambiguity of the situation is paramount, as it is subjected to a range of divergent definitions and readings. Often it is not even possible to establish clearly what 'the facts' are. Moreover, one cannot circumscribe clearly what the boundaries of the problem are, because it is entangled with other issues and situations whose unravelling may have a direct or indirect influence on the problem concerned.

Climate change is perhaps one of the most dramatic examples of such a messy problem (Giddens 2009). Even the very fact of the problem's existence is fiercely contested, as the authority of scientific knowledge continues to be challenged by some interest groups and exploited by others. There is ferocious debate about the many facets of the problem – the most contentious of which is the extent to which the warming of the planet is the consequence of human agency – and what should, or could, be done about it, and by whom. At the same time, what climate change might mean on the ground varies widely across the globe, leading to massive disjunctures between local and global perspectives. Moreover, whatever is called 'climate change' spills over into uneasy questions about the sustainability of our lifestyles and the desires and expectations on which it is based, about the inherent contradictions of the reigning global capitalist economic system, about the international geopolitical fallout as developed and developing nation-states argue over what constitute fair strategies to combat climate change, about how ethical issues such as human solidarity and duty of care for other species should play in a global society that likes to see itself as civilized, and so on. It is extremely hard to know how this multifaceted complex of challenges, escalating from the problem of climate change, might be unscrambled and sorted out (Ison 2010).

As Chapman (2004) points out, such messy problems lead to intractable policy controversies, where achieving a consensus on how to address the problem is dauntingly hard. Indeed, there is a pervasive sense of impasse and paralysis in relation to what to do about climate change, despite occasional upbeat pronouncements of global policy breakthroughs, such as those decided upon at the eleventh hour at the United Nations climate change talks in Cancun, Mexico, in December 2010. This was one year after the much commented-upon failure of similar talks in Copenhagen. Most of us are only too aware that the effectiveness of global deals is both limited and uncertain, as individual nation-states will strive to safeguard their national economic interests in the implementation and interpretation of the agreed-upon measures. In the language of

complexity theory, the command-and-control strategies developed at the global top – as represented by the United Nations system – do not produce linear effects: they cannot impose deterministic courses of action on lower-level, interdependent constituents such as nation-states, which themselves operate as self-organizing, complex adaptive systems, harbouring emergent processes whose unpredictable outcomes will feed back into other parts of the system as a whole, in turn producing new, destabilizing and unpredictable effects. This, in fact, exemplifies the 'fragmegrated' world Rosenau (2003) has talked about.

In short, if we experience our contemporary world as exceedingly complex, it is because we feel submersed in a proliferation of escalating messes, a world of seemingly irresolvable, uncontrollable problems. It is in the face of this common social experience that we should caution against a wholesale celebration of complexity. Might not the world have become *too* complex? Professor Ross Garnaut, the independent climate change advisor for Australia's Labor government under Prime Minister Kevin Rudd (2007–2010), expressed his pessimism about finding a solution for climate change in the following manner: '*It's too complex*. The special interests are too numerous, powerful and intense' (quoted in Wilkinson 2008, my emphasis). Another example is the 2008 global financial crisis. As widely reported, one trigger for the crisis was that the global financial system had become so complex as new, highly intricate financial products such as credit-default swaps flooded the financial markets in the 2000s[2] that Wall Street traders and bank executives barely understood the real-world implications of their actions. As the *International Herald Tribune* summed it up: 'Complexity of trading overwhelmed the traders' (Schwartz 2008). These examples suggest that complexity can be a decidedly negative thing in human societies.

Complexity and collapse

A longer-take historical view may put the current interest in complexity and complexity theory in a more sobering perspective. In his book *The collapse of complex societies*, archaeologist Joseph Tainter (1988) provides an account of how ancient societies such as the Roman Empire and the Mayan civilization, once so powerful and prosperous, eventually collapsed. When they were in their prime, these civilizations were vibrant and sophisticated societies which thrived on complexity. Tainter sees complex societies as problem-solving organizations – indeed, as complex adaptive systems, even though he does not use this term from complexity theory – which, in the course of their history, invest in more complexity (e.g. the intensification of agriculture or increasing the specialization of bureaucracies) to relieve stress or to realize new opportunities. However, while this investment in complexity is initially a productive strategy with a positive cost-benefit ratio, over time the marginal return on complexity declines, to a point where the society can no longer find the resources to invest in additional levels of complexity to respond to new challenges. Eventually this would lead to economic stagnation, political decline, territorial shrinkage or, possibly, collapse, which entails a marked decrease in complexity. In Tainter's (1988, 4) definition, a society has collapsed when it displays a rapid, significant loss of an established level of socio-political complexity (for example, through the abandonment of key areas of practice or power).

Tainter's vivid account of how complex societies collapse has deeply disturbing resonances with the condition of the world today. Indeed, although he does not consider collapse an imminent contemporary threat, he argues that declining marginal returns on investment in complexity apply to post-industrial societies as well. Thus, he questions

whether technological innovation will be able to contribute as much to the solution of future problems as it has to past ones, while the cost of the organizational and socio-political complexity needed to solve new challenges such as resource depletion and environmental degradation, but also other messy problems such as terrorism and population ageing, may soon become unaffordable without a decline in the standard of living that people have come to expect. Even increased investment in R&D, including in specialist higher education – so favoured today by governments as a strategy for continuing economic growth – can never yield a permanent solution, merely a respite from diminishing returns, according Tainter (1988, 209–16). As Tainter muses: 'Will we find, as have some past societies, that the cost of overcoming our problems is too high relative to the benefits conferred, and that not solving problems is the economical option?' (213). From this point of view, our societies today already have a debilitating degree of complexity, which may over time prove to be unsustainable.

These insights put a darker shade on the cultural significance of the complexity turn in contemporary discourse. Thrift (2005, 53) sees the new structure of feeling which 'frames the world as complex, irreducible and anti-closural' as the sign of a new sense of time, involving a much greater sense of openness and possibility about the future. This is an optimistic reading, suggesting that awareness and acceptance of complexity, with its recognition of the world as a complex assemblage of shifting and entangled diversities, multiplicities, indeterminacies, and so on, is a cosmopolitanizing sign, the mark of a growing cosmopolitan imagination which can presumably contribute to a thriving and harmonious, inclusive global human future (Delanty 2009). However, this hopeful perspective should be juxtaposed with the much more dismal experience of complexity as a paralyzing, incapacitating state of affairs. Evidence abounds that global society has become so fiendishly complex that it is increasingly unmanageable within established institutional structures – witness the declining stability and effectiveness of national liberal-democratic governments throughout the developed world, most of whom appear to be so embroiled in continuous wrangling about how to sort out an endless array of messy situations that crisis management seems to have become a normal state of affairs.

Cultural intelligence for a complex world

To point to the downside of complexity is not to evoke a nostalgia for simpler times, nor to submit to doom scenarios of prospective collapse, even though we are not short of warnings of this kind in recent years (Ferguson 2010). For better or worse, we cannot escape the escalating complexity of the contemporary world, and it is the task of navigating this sometimes debilitating complexity, in its varied particular manifestations, that we are faced with today. As I have suggested throughout this essay, this task is two-pronged. On the one hand, it requires us to take complexity seriously as an inherent and irreducible feature of reality. On the other hand, we need to find ways of navigating this complexity through appropriate modes of conceptual and discursive simplification. This special issue proposes that as cultural researchers we can contribute to this task, not by providing ready models for complexity management – this is not the task of academic scholarship – but by developing theoretically informed, empirically grounded accounts which substantiate the messy complexities in particular fields of practice; not for the purposes of critique (or at least not exclusively), but in order to open up new avenues for addressing the challenges involved, be this the challenge of teaching in hyper-diverse classrooms (see Megan Watkins' essay), the challenge of running Sydney's railway system (Hodge and Matthews), or the challenge of managing the cultural complexities of urban nightlife (Rowe and Bavinton). Finding

a language to understand these complexities – that is, to describe the specific ways in which things are 'complex and contradictory', as cultural studies generally insists – is a necessary step to generate the cultural intelligence with which to formulate 'solutions' in terms of strategic, flexible, emergent, non-simplistic simplifications, rather than the reductionist and mechanistic thinking (informed by positivism) which still dominates much policy-making and problem-solving (Chapman 2004).

One thing is certain: complexity is no longer a revolutionary idea, it is now a mainstream concern. For example, for IBM's 2010 *Capitalizing on complexity* report, more than 1500 CEOs, general managers and public sector leaders from around the world were interviewed on their most pressing challenges in the current global environment. The study identified one primary challenge: complexity. These corporate leaders and bureaucrats told the researchers that they operate in a world which has become substantially more volatile, uncertain and complex, and they expected this complexity only to increase in the coming years. Interestingly, however, more than half of them doubted their ability to manage it. At the same time, the report says, organizations that managed to *capitalize* on complexity proved to be the most successful in reaching their goals. The single-most important capacity needed to find an effective path through this complexity, the report concludes, is creativity. As IBM President Samuel Palmisano puts it in his foreword to the report:

> What we heard through the course of these in-depth discussions [. . .] is that events, threats and opportunities aren't just coming at us faster or with less predictability; they are converging and influencing each other to create entirely unique situations. These firsts-of-their-kind developments require unprecedented degrees of creativity — which has become a more important leadership quality than attributes like management discipline, rigor or operational acumen. (IBM Corporation 2010, 4)

This corporate embrace of creativity as the key 'solution' to managing complexity demonstrates that the recent enthusiasm for creativity (e.g. the creative industries), as Pratt and Jeffcutt (2009, 3) argue, 'needs to be put in context and, in particular, connected to strategic responses to competitive and globalized challenges in the contemporary economy'. Creativity here is associated with operational dexterity and lateral thinking, with a flair for experimentation, a willingness to innovate and take risks. Creativity, in short, refers to the capacity for cultural improvisation in circumstances beyond our control and prediction, where there are no fixed scripts for action (Hallam and Ingold 2007). Importantly, then, creativity rises in use value in conditions of complexity, precisely because deterministic knowledges do not work very well here.

In this sense, creativity is a crucial element in what I call, for want of better phrase, cultural intelligence. To be sure, the notion of cultural intelligence is not new. The primary coinage of the concept has been in association with the capacity to operate in today's diverse, cross-cultural contexts (Earley and Ang 2003). Commodified in management literature as 'CQ', it is defined as a 'specific form of intelligence that helps individuals function effectively in multicultural situations' (Livermore 2009, 19). This is a restricted notion of cultural intelligence, however, for two reasons. The rationale that in today's global, interconnected world there is a pressing need for people to become more adept at dealing with differences is a salutary one, although it is crucial not to limit 'differences' to fixed categories of ethnic otherness, as is often the case in conventional understandings of intercultural communication (Holliday 2011). Rather, I would suggest that we need cultural intelligence because we need ways of untangling and unscrambling the complexity generated by the irreducible, wildly heterogeneous, co-existing differences circulating in the world. Moreover, cultural intelligence should not be reduced to an individual capability,

a psychological competence which can be acquired through 'how to' courses and guidebooks. Instead, I propose to conceptualize cultural intelligence as an orientation to knowledge and understanding which goes beyond cultural critique through a practical engagement with complexity.

The term 'intelligence' is suggestive because of its general meaning as the 'ability to comprehend; to understand and profit from experience' (Princeton University 2011), but also for its more purposive meaning of the gathering of useful, often covert (or unofficial, contingent) information to assist in strategic decision-making, as in an intelligence operation. Intelligence here connotes the calculated pursuit of knowledge required to act in circumscribed, tricky and precarious contexts. This always involves modes of strategic simplification, in that the knowledge produced must provide pointers for action. In this regard, intelligent knowledge is bound to be highly selective and contextualized, framing complex situations and messy problems in ways that will empower us to find pathways through them.

I call this orientation to knowledge *cultural* intelligence not to refer to the ability to recognize many different distinct cultures (as in conventional concepts of multiculturalism), but to stress the constitutive role of culture in our efforts in making sense of, and dealing with, complexity. That is, complexity is always also cultural complexity, to the extent that the complexity of things (problems, events, practices, institutions, systems) is generated precisely, at least in part, by the multiplicity of meanings and perspectives which continuously work to shape and reshape their shifting and contested configurations. Central here is the well-known cultural studies conceptualization of 'culture': that it is not a fixed entity, but an ongoing social process of meaning-making underpinning the constitution of society. To put it succinctly, cultural intelligence involves the recognition that navigating complexity can never be a question of definitive or one-size-fits-all 'solutions'; a complex problem can only be addressed partially, through an ongoing and painstaking negotiation with its multiple aspects, the different ways in which it is perceived, and the divergent interests and perspectives involved. Moreover, because efforts to solve one problem in isolation tend to generate unforeseen or unintended consequences which create new problems down the track, in turn needing concerted efforts to resolve them, cultural intelligence favours a more process-oriented approach to 'problem-solving', based on emergent, creative strategies of simplification which keep room for contingency and variability along the way, rather than predetermined, linear goals and formulas.

While the essays in this special issue deal with a broad range of problems and areas of concern, what they have in common is that they adopt a cultural complexity approach in their analysis. In this regard they all fit within the general field of cultural studies: their general analytical thrust is to show that the problems and phenomena concerned are more complex than is usually acknowledged. What each of the essays also attempts to do, however, is put forward some suggestions for how these problems and issues might be addressed more effectively – whether it is through alternative policy concepts, principles of practice, or logics of governance – precisely by taking their complexities more seriously. In short, the essays do not only engage in the production of cultural critique, but also reflect on the possibilities of exerting cultural intelligence.

Cultural intelligence can be seen as the practical application of complexity thinking, but in the process it also goes beyond a mere critical affirmation of complexity: it proposes conceptual and strategic tools for navigating it, fully cognizant that the complexity of the world will persist irrespective of the simplifications imposed on it. While cultural critique tends to be focused on the representation of complexity as such, cultural intelligence requires the adoption of a more heuristic approach, treating the

complexity of the world not as the endpoint of analysis, but as the starting point for possible intervention within it.

What the essays here suggest, however, is that when we are faced with the complex challenges of today's society, the distinction between cultural critique and cultural intelligence can only be a subtle one. Thus, rather than *replacing* cultural critique, the pursuit of cultural intelligence is *based on* the critical insights which cultural studies research can deliver so well. In each of the articles in this special issue, the relationship between cultural critique and cultural intelligence is played out through an engagement with the complexities within a particular area of policy and practice. Crucially, they are all based on extensive empirical research. Indeed, one could argue that while cultural critique requires what Stuart Hall (1996) called a 'detour through theory', articulating one of cultural studies' most well-known methodological principles, cultural intelligence can only be gained through *a scrupulous detour through the empirical*, without which we cannot sufficiently appreciate and grasp the actual complexities at hand. Only when we have a detailed mapping of how particular problems and issues are dealt with in the real world can we begin not only to theorize and critique current practice, but to intervene intelligently within it. Exactly what this means in concrete terms obviously depends on the empirical particularities on the ground, which each of the articles here discuss in depth. As a result, this special issue takes us through a rich array of real-world instances where cultural complexity is both encountered and, more often than not, denied or ignored, leading to unhelpful, simplistic 'solutions'.

Zoë Sofoulis has stepped into the world of urban water management, where the need to address very complex challenges is a daily and increasingly urgent affair, especially in light of continued urban growth, shrinking water supply and other environmental problems. The traditional management approach of the water industry is a modernist, top-down, one-dimensional one, based on simplifying strategies such as the statistical invention of the 'average water user', which smooth out any understanding of the social and cultural uses and meanings of water in households. That this simplistic reductionism is no longer adequate today is reflected in changing perspectives in some parts of the industry, where Sofoulis finds that more culturally intelligent approaches to water management, recognizing a broader range of relevant knowledges including social and cultural research, are slowly getting traction. Yet, the dominant governmental imagination – as articulated by bodies such as the Productivity Commission and the National Water Commission – is still one which 'skirts' the need to deal with the full complexity of water supply and use as part of a broader urban sustainability agenda.

David Rowe and Nathaniel Bavinton diagnose a similar obscuring of cultural complexity in the governance of urban nightlife. They find that discourses of the 'night-time economy' tend to produce highly simplistic, dualistic models of urban governance based on either 'stimulating' or 'controlling' nightlife practices. Such reductionist policy models are found to be out of step with the fluid diversity of nightlife cultures in different cities or city centres, as mapped by the authors. They argue that taking the cultural complexity of nightlife cultures seriously would enable the formulation of policies which are more accurately targeted to the local specificities and dynamic mobilities of nightlife cultures, and more attuned to issues of equity and inclusion. The implication of taking cultural complexity seriously, however, is that we cannot rely on 'global' solutions to problems related with the night-time economy (such as alcohol abuse). The desire for such off-the-shelf solutions is itself a simplistic governmental response which is part of the problem.

Greg Noble critiques established policies of 'multiculturalism' – a controversial area of contemporary social and cultural policy throughout the Western world – for its simplifying, if not simplistic assumptions of cultural diversity, where ethnicity is reified and multicultural society is imagined as a static mosaic of distinct, monolithic 'cultures'. Drawing on a meticulous microanalysis of the complexities of everyday intercultural relations in Eastwood, Sydney, Noble points out that any renewal of multicultural policy would have to take the varied and multiple ways in which people manage complex milieux into account, hence transcending the divisive moralizing injunctions ('respect difference!', 'assimilate or else!') currently plaguing political debate in the field. In this regard, he shares Rowe and Bavinton's argument that culturally intelligent policy renewal might usefully frame itself in contingent, localized and provisional terms rather than in categorical and all-embracing, macro-national terms.

Focusing on the more targeted field of formal education and schooling, Megan Watkins similarly criticizes the ethnic essentialism of official multiculturalism, here demonstrated in the tendency among education professionals and policymakers to equate differences in school performance with differences in ethnic background. However, Watkins argues it is simplistic to assume that Chinese children succeed at school because of their Chinese background, or that children of Pacific Islander background perform poorly because of their Pasifika heritage. Drawing on Bourdieu's distinction between regularities and rules of practice, she proposes a more culturally intelligent mode of simplification, or what she calls complexity reduction, by designing pedagogic strategies which intervene in the patterns of practice which children are socialized into at home and at school (e.g. the doing of homework or habits of learning).

Beatriz Cardona and Brett Neilson start out with an apparently simple empirical fact: the significant rise of the consumption of human growth hormone (HGH) as an anti-ageing product, despite the fact that such use is illegal and scientifically dubious. A simplistic policy response to this situation would be to tighten regulations on the sale and circulation of HGH drugs to curb their abuse. But such a clamp-down is notoriously counter-productive. A more culturally intelligent approach, according to the authors, requires a comprehensive understanding of the complex assemblages of players and processes involved in the production, distribution and use of HGH around the world. The authors enlist Manuel DeLanda's assemblage theory to lay out this cultural complexity, which also leads them to conclude that cultural intelligence must be more than 'the "patching" of consensus solutions within already established policy frames'. For them cultural intelligence must have a political dimension, focused on more fundamental points of intervention, and is thus inherently linked with cultural critique.

Fiona Cameron squarely addresses the challenge of climate change, one of the most urgent and complex problems of our time, by examining the symbolic role of islands threatened by rising sea levels in the imagining of competing models of climate change governance. A central 'solution' often promoted in the invocation of the 'disappearing islands' as a signifier for climate change is the mobilization of citizens in the West to act on their cosmopolitan duty to do their bit to 'save' the islands. Drawing on focus group data, Cameron finds that this moralizing impulse is not only too simplistic, but counter-productive, leading more to a sense of paralysis and to a denial of responsibility than to concerted ecological action.

Finally, Bob Hodge and Ingrid Matthews present an argument for a more active engagement of cultural studies with chaos and complexity theory in order to develop more precise methodological tools for making real-world complexity more visible and manageable. They base their case on an analysis of the multiple problems faced by Sydney's

malfunctioning rail company, RailCorp, and propose that a methodological focus on 'critical incidents' and the construction of 'virtual trialogues' may provide a way of understanding the rail network and its operations as a vast complex system, opening up an opportunity for RailCorp managers to clarify the problems they face and making more effective solutions possible. The extent to which these managers are ready for this, arguably, more culturally intelligent approach remains to be seen, however, as with the water managers in Sofoulis' study, pointing to the continuing challenges for engaged cultural researchers like us to demonstrate the relevance of taking cultural complexity seriously in addressing the messy problems of our time.

Notes

1. For this conceptual distinction of 'complicated' and 'complex', see Stengers 1997.
2. The market for credit-default swaps, essentially insurance on debt, barely existed a decade ago and ballooned from $900 billion in 2001 to $45.5 trillion in 2008 (Schwartz 2008). This demonstrates the enormous growth in scale and complexity of finance capitalism in the early twenty-first century, aided by exponential gains in computing power and speed and the rising economic power of the Middle East and Asia.

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