Dialogues in Human Geography

Article

Space and spatiality in theory

Dialogues in Human Geography
2(1) 3–22

DOI: 10.1177/2043820611434864
dhg.sagepub.com
SAGE

Peter Merriman
Aberystwyth University, UK

Martin Jones
Aberystwyth University, UK

Gunnar Olsson
Uppsala University, Sweden

Eric Sheppard
University of Minnesota, USA

Nigel Thrift
University of Warwick, UK

Yi-Fu Tuan
University of Wisconsin-Madison, USA

Abstract
This article is an edited transcript of a panel discussion on 'Space and Spatiality in Theory' which was held at the Annual Meeting of the Association of American Geographers, Washington, DC, April 2010. In the article, the panel map out some of the challenges for thinking, writing and performing spaces in the 21st century, reflecting upon the emergence of new ways of theorizing space and spatiality, the relationship between writing, action and spacing, and the emergence of distinctive spatialized ontologies (e.g. 'movement-space') which appear to reflect epistemological and technological shifts in how our worlds are thought, produced and inhabited. The panellists stress the importance of recognizing the partial nature of Anglophone theoretical approaches, and they argue for more situated and modest theories. They also reflect upon the importance of a wide range of disciplinary knowledges and practices to their thinking on the spatialities of the world, from philosophy and the natural sciences to art and poetry.

Keywords
history of geography, language, movement, poststructuralism, space

Introduction by Peter Merriman and Martin Jones

Space and spatiality are often positioned at the heart of the discipline and practice of geography, unifying

Corresponding author:
Peter Merriman, Institute of Geography and Earth Sciences, Aberystwyth University, Llandinam Building, Penglais Campus, Aberystwyth SY23 3DB, UK.
Email: prm@aber.ac.uk

a diverse and eclectic subject matter that ranges from the patterning of economic and social life to physical processes and 'natural' environments (Thrift, 2009a). Different understandings of space and spatiality underpin some of the key epistemological chasms and ontological assumptions separating philosophical approaches and practices in geography, while these same traditions espouse approaches to space that can be traced back to the thinking of scholars such as Aristotle and Plato, Bergson and Einstein, Euclid and Carnap, and perhaps most significantly Newton, Descartes, Leibniz and Kant (see, for example, Casey, 1998; Jammer, 1969; Reichenbach, 1958).

In the past few decades it has become somewhat conventional within Anglophone human geography to claim that space and spatiality are social and cultural, as well as quasi-material, *productions* – claims which were evident in the writings of Doreen Massey, David Harvey, Manuel Castells and Henri Lefebvre, and before them Émile Durkheim and Georg Simmel. More recently, Massey, Thrift and others have suggested that our focus must be on 'time-space' or 'space-time'. Massey (2005), in particular, has outlined how space and time 'are integral to one another', 'distinct' but 'co-implicated', and 'it is on both of them, necessarily together, that rests the liveliness of the world' (pp. 47, 55, 56), and she has convincingly argued that relational approaches to time-space can enable us to reconnect the spatial with the political, as well as forming the basis for dialogue between human and physical geographers (Massey, 2005). Along with Harvey and Thrift, she has shown how processual, poststructuralist and non-representational approaches to the flux and unfolding of social spaces and times moves us well beyond Cartesian and Newtonian conceptions of space and time, but as such understandings have spread throughout the discipline we might ask whether more conventional conceptions of dimensioned, contained or delimited space and time have actually receded. Indeed, one could argue that the fusing of time and space as time-space and their a priori positioning as concepts for understanding the unfolding of situations and events may actually reflect a prevailing western scientism which can be traced back from contemporary geography, philosophy and science through the work of Bergson, Einstein, Newton, Descartes and Kant to classical thinking (Merriman, 2012a, 2012b). Of course, many geographers prefer to operationalize seemingly more encultured and embodied concepts, such as place, environment, landscape, region and locale, in their studies than the seemingly more abstract concept of space, but it is precisely the multiplicitous and heterogeneous nature of space and spatiality – as abstract and concrete, produced and producing, imagined and materialized, structured and lived, relational, relative and absolute – which lends the concept a powerful functionality that appeals to many geographers and thinkers in the social sciences and humanities.

The remainder of this article is an edited transcript of a panel discussion on 'Space and Spatiality in Theory' which we organized at the Annual Meeting of the Association of American Geographers in Washington, DC, in April 2010. Four panellists – Gunnar Olsson, Eric Sheppard, Nigel Thrift and Yi-Fu Tuan – reflect upon past and present attempts to think and practise space and spatiality in geography, the humanities, social sciences and sciences.

We invited the panellists to address a series of purposefully open questions about space and spacing and how they have been approached as absolute, relative, relational, abstract, processual, more-than-representational, matter, structured and experienced. We asked the panellists to reflect upon the history of geographical engagements with theories of space and spatiality, and the directions that current debates may be heading in. We asked them to reflect upon how geographers have engaged with theories of space and spatiality developed in such diverse disciplines as anthropology, economics, philosophy, physics, literary studies, mathematics, art, political theory and performance. We asked the panellists to consider whether there has been, or needs to be, a shift from grand theoretical treatises on space and spatiality towards more modest and/or contextual theories of life and world, and what kinds of methods are or might be useful for apprehending the spatialities of the world.

The panellists' contributions to theories of space and spatiality over the past three to five decades are widely known and, as is well documented in

accounts of their careers, they have engaged with, and been pioneers of, a broad range of approaches which embrace human and, at times, physical geography, quantitative and qualitative approaches, regional science, critical GIS, geomorphology, Marxism and neo-Marxism, humanism, structuration theory, time geography and poststructuralism; reaching out to disciplines such as planning, anthropology, sociology, politics, economics, performance studies and critical theory. We encouraged the panellists to reflect upon their own biographical and theoretical trajectories in order to stress the processual nature of their thinking and theorizing on space and spatiality. Theoretical arguments and perspectives on space have been and are constantly shifting, and we do not believe that there are any universal solutions to age-old problems or theoretical debates. The four panellists provide clearly situated, positioned and (hopefully) modest contributions which, coupled with the audience questions, should provoke readers to think space and spatiality differently and multiply, opening up new lines of investigation, experimentation and debate.

Gunnar Olsson

Alphabetical order is also an order, the letter O by convention placed closer to the end than to the beginning. But so strangely is the present panel composed that for once my own name comes first. Yet another performance on the high wire, yet another attempt to understand the relations of time and space, cause and effect.

And let it be said at the outset that whenever I encounter these Kantian fundamentals of time and space, cause and effect, then my mind automatically swirls back to Augustine of Hippo, the one-time-hooligan-turned-saint who in his search for eternity once stopped and wondered: 'What then is time?' And then he replied: 'If no one asks me, I know; if I want to explain it to a questioner, I do not know' (1944, Book XI, Chapter XIV: 217).

My own attitude to the concepts of space and spatiality is quite similar, a feeling I share also with Gilbert Ryle who in the preface to *The Concept of Mind* remarked that 'many people can talk sense *with* concepts but cannot talk sense *about* them. They are', as he put it, 'like people who know their way about their parish, but cannot construct or read a map of it, much less a map of the region or continent in which their parish lies' (Ryle, 1949: 7–8, emphases added). Accordingly he made it his task 'to rectify the logical geography of the knowledge we already possess'. Sounds like Ptolemy to me, the cartographer who spent a lifetime constructing a net in which he could capture the world.

But wait! What is a concept, what is a net, what is the mind itself? As so often, the answers lie in the words themselves, the *OED* a treasure trove for anyone interested in the logical geography of the knowledge we already possess.

First, the concept – a disposition, a frame of mind; its Latin roots in the two words *con* and *capere*, literally 'grasping together'. Close your eyes and you will see what a concept is: a reaching out with the hand, a way of dealing with the most abstract ideas as if they were a collection of things. It is hard to find a more revealing example of how the flesh turns to word and comes to dwell among us. 'Gripping' is the name of the conceptual game.

Then, the net – a weaving together of warp and weft; a world-wide-web which in the same texture forms what it captures and captures what it forms; a *thesaurus sapientiae* of well-ordered boxes. But a net is also a *matrix*, by definition 'a rectangular arrangement of quantities or symbols', the algebraic map that lay at the heart of Walter Isard's Regional Science, the very womb of my own brand of geography, the mould in which everything was cast and shaped.

Next, the mind – sometimes a noun and sometimes a verb, but always somehow related to memory; the action-space of imagination, that particularly human faculty through which we can make the absent present and bring the unconscious into the open. But memory, like so much else, has a tendency to be doubly anchored, one hook sunk into the sensible, the other into the intelligible. To exemplify, there is a profound difference between remembering the members dismembered, on the one hand, and being reminded of whatever you might or might not have forgotten, on the other.

And with that remark about the intertwining of epistemology and ontology I have finally come to

where I set out to come: to Plato's *chora*, the pivotal concept of *Timaeus*, that most difficult and most influential of all his dialogues. It was in this late work that he finally understood that the logical geography which had guided him so well in the past was really not good enough, that the invisible maps he had constructed in the *Republic* had been too simplistic. To be more precise, he now realized that the world consists not of two modes of being, but of three; not merely the intelligible, which I can grasp with my thoughts, and the sensible, that I meet with my body, but a third genus as well.

It is his third genus that Plato called *chora*, a term which nowadays is often translated as 'space' or 'place'. In his own words, however, it is 'a concept difficult of explanation and dimly seen . . . , the receptacle, and in a manner the nurse, of all generation . . . , an invisible and formless being which receives all things and in some mysterious way partakes of the intelligible, and is most incomprehensible' (Plato, 1961: 49a (1176) and 51b (1178)). Little wonder that later generations have gotten lost, for as Jacques Derrida once put it: 'Who are you *chora*, where do I find you, where is your place, what is your unnamable name?' (Derrida, 1995: 111). Rephrased into my own vocabulary: how do I grasp the formless that refuses to be categorized, how do I comprehend the incomprehensible?

Not so easy to say, especially as these questions are important enough to be protected by the taboo, a concept which is etymologically connected not merely with the terms 'under prohibition' and 'not allowed', but with the words 'sacred' and 'holy' as well. What is taboo is consequently doubly tied, first to the forbidden itself, then to the strongest form of the taken-for-granted, that is to those aspects of the unconscious which are crucial enough to be blessed by the gods themselves, by definition beyond reach. How could I possibly resist the temptation of pursuing these issues of understanding how I understand, how could I ever stop wondering what it means to be human?

Driven by that desire I now find myself at the very core of the most forbidden of everything forbidden; in the bottomless chasm between the five senses of the body and the sixth sense of culture; in the abysmal land of liminality which the well-behaved must never enter. This is indeed the realm of the *chora*, the void that took Plato a lifetime to locate and Aristotle a sea battle to name: the excluded middle – a most appropriate term for *the* fix-point of logical geography, the non-bridgeable gap which in the same figure unites and separates, liberates and imprisons; the no man's land of wired trenches and exploding mines.

But why would the excluded middle be excluded? Because it is there – and nowhere else – that POWER resides, there that the dictators of self-reference are free to do whatever they fancy, by nature predictably unpredictable; 'I am who I am and I do what I do', like YHWH himself a tautology, by definition always true but never informative. Trespassing into that well-guarded territory is obviously not for you and me and that is why the second commandment with its double prohibition against images and improper naming amounts to nothing less than an all-embracing censorship paragraph. In that light it is easy to see why even the most innocuous map risks taking its holder to Siberia, for every map is essentially an interweaving of picture and story. Perhaps the real issue is whether it is at all possible to have a metaphor that is not at bottom spatial.

So where have these analyses led me? To the Kantian limits of space, time, and causality; to the womb of creativity, the formless receptacle that our concepts have been designed not to grasp, our nets not to net, our minds not to mind. It is in this sanctuary that I find not only the princes, for whose education Plato set up his Academy, but also the poets, whom he did his utmost to keep out. Among the latter I would certainly include Stéphane Mallarmé, he who finished his *Un Coup de Dés* with the conclusion that 'nothing has taken place except the place . . . except perhaps a constellation' (1994: 142 and 144). It is this constellation that I now name 'the Great Cartographer', an octagon formed by the bright stars of Paul Cézanne and Marcel Duchamp, James Joyce and Samuel Beckett, Michel Serres and Franco Farinelli, Kurt Gödel and Paul Cohen.

Were it not for his bad habit of solving problems by defining them away, Alain Badiou might have been there as well. And yet the truth remains that among contemporary thinkers he is the only one to

seriously approach the void as a multitude, the only one who knows where the dice are thrown, the unnamable named, the formless conceived. Easy to share his taste for Mallarmé and Pesoa, impossible to excuse his Maoism.

Strange adventure this descendence into the categorical abyss, in retrospect an experience so rich that I might never wish to ascend from it again (a story more fully told in Olsson, 2007). The challenge is enormous, for as I have preached so many times before, the point is to minimize mistranslation by thinking-and-acting in such a way that what I am writing *about* is one with the language I am writing *in*. And once that challenge has been accepted, it seems quite clear that self-reference is the ultimate mode of spatial analysis, a power-filled game of autocorrelation played with loaded dice. And just as every croupier knows that in the long run the bank always wins, so every fisherman, every accountant, every categorizer knows that the net (in whatever guise it might appear) is what remains after all expenses have been paid.

All of it easier said than done, all of it easier done than understood. And that is why the theme of the present panel is so maddeningly exciting.

Eric Sheppard

I have titled these reflections 'Confessions of a Recovering Spatial Fetishist', because my exposure to geography and space began with the evangelical spatial science revolution, which I had to work through as a kind of aporia alongside Gunnar and many others, coming out of the other side to try to make sense of what space means in geography. Another way of describing this is as my trajectory from space to spatialities. At the centre of my thinking – and this is the 'recovering' part, as you never quite get past it – has been the question of what it means to take seriously the spatial dimensions, aspects and modalities of socio-environmental processes. How does this affect the ways in which we think?

My particular engagement with this, from which my current thinking has emerged, has been triggered by my work in economic geography; a field where space and geography also have enthusiastically been taken up by a discipline outside our own over the last 20 years (Economics). In this case, geography has been taken up by even the most autistic of social science disciplines as a factor that matters, but in a particular way – as an exogenously given flat world, the uniform plane of August Lösch (1954 [1940]). The challenge, also Lösch's challenge, has been how to create uneven economic topographies upon that uniform surface by dint of the cost of transportation. This was, and is, 'spatial science' redux, and it had radical implications within the very narrow canon that dominates Economics. 'There's not just one equilibrium; but more than one', was the first surprise that space added to the neoclassical pantheon, and a series of others have followed, with very powerful public consequences. For example, the 2009 World Development Report is basically a Krugmanesque account of how the 'development problems' of the Third World can be ameliorated by connecting it better to the rest of the world through the flattening of space (World Bank, 2008).

Taking the spatiality of the economy seriously – which is not done in an economics literature that takes it to be an exogenous variable – generates a very different optic. In this view, territorial economies are produced with their distinctive features as particular kinds of places; also, the very connectivity of the world is produced, changing distance, connectivity and spatiality through the modification of transportation/communications technologies. When you follow this path, as I have over the past 30 years, you find that it challenges most of the core parables of neoclassical economic theory: parables of equilibrium and harmony, of microfoundations, of the social benefits of capitalism and the market, of comparative advantage, of the highest and best use of land, and many others. But it also undermines some hoary nostrums of Marxian political economy, including those about value and class (Sheppard, 2004).

In short, taking seriously the constructed nature of spatiality as shaped through economic processes forces you to reconsider core economic principles in many of the aspatial paradigms that still accompany the word 'economics' in its various manifestations. So the lesson, here, is that spatiality can disrupt theories that have not taken it seriously. However,

although the economic geography story reminds us of this, what is crucial is *which* theorizations of spatiality are imported into a set of discussions, and to *what* effect. Turning to the debates we have had around this in geography, particularly over the last 15 years, we have seen a sequence of central concepts come and go. In the days of Bill Bunge (1962) it was space and distance, but another concern was place and territoriality, which emerged in the work of Yi-Fu Tuan (1974) and returned in the late 1980s and early 1990s across the discipline. Then came extensive theorizations of the construction of scale (Delaney and Leitner, 1997), followed shortly thereafter by networks, relational approaches, connectivity, and such mind-blowing concepts as non-proximal propinquity (Jones, 2009). Borders, frontiers and boundaries have been a theme, as have hybrid spaces, mobility, and flat ontologies and the event.

In short, there has been a whirlwind tour of one concept replacing another, in a way that has been quite unproductive, particularly because it has often been done on an ontological register suggesting a lack of space for common ground: looking for that master ontology, if you will. 'My ontology versus yours', such were the debates over flat ontology and scale. There also has been an attempt to get beyond this by selecting out several 'master concepts' to use as the prime conceptual grid into which everything else can be fitted: the TPSN framework (Territories, Places, Scales, Networks) that Bob Jessop and Martin Jones have described (see Jessop et al., 2008; Jones and Jessop, 2010).

In the final analysis, I would argue, these lists, prioritizations attempting to find the concepts that matter most, are always incomplete and never really get us to where we need to go. Worse, they are reflective of the perspectives, the situated knowledge, out of which these concepts have been developed; those of an Anglophone, arguably masculine and mostly white geography, as represented in today's panel.

Yet, of course, there are other concepts circulating out there: the paradoxical spaces of Gillian Rose (1993); the antipodean spatialities that Phil O'Neill and Pauline McGuirk (2007) have written about; postcolonial spatialities such as the partition spaces of Oren Yiftachel (2003) and Sanjay Chaturvedi (2005); various kinds of indigenous spatialities; phase space; fractal spaces; and my own experiments with sociospatial positionality (Sheppard, 2006). One could go on and on, but that is not the point. Building lists does not really get us very far.

As we look forward, I want to suggest four things:

First, if we are going to make an ontological claim at all I think it should be relatively modest, not deeply philosophical. It is that complex emerging spatialities, or spatiotemporalities, matter. And they matter because even though they are in part constructed by us through a series of socionatural processes in which humans participate, they nevertheless always already exist, always coming back to shape what happens. This is what Ed Soja (1980) has referred to in another context as a 'socio-spatial dialectic'. They matter in multiple ways. They matter materially. They matter in terms of discourses and representations that are mobilized around various spatial concepts. They matter through the ways in which space is performed. And, critically, they matter in terms of the everyday constructions of space that happen in the real world, as social movements, neighbourhood organizations and other groups make the spaces that we academics try to think. Again, it is not a question of either/or: we have to be thinking about spatialities in all of these dimensions at once.

Second, returning to the various spatialities which can be mobilized, including all those which I have not listed or which have not yet been formulated or suggested, again it is not about a list but rather should be a dialectical, process-based, relational way of approaching these concepts – not as monisms, to be debated, cast aside or prioritized, but as relationally constituted concepts. This is an ongoing, complex, geographical process of knowledge production through which certain patterns of concepts may precipitate out for a time, as what one might want to call 'permanences' (with big scare quotes around the word). Yet they are always in flux, at risk of dissipation, and the debate always goes on. We must attend to the constitutive processes through which these emerge, also expanding those processes by diversifying the sociospatial situatedness of the knowledge producers able to participate in this conceptual mapping.

Third, we need to take a lesson from Einstein and many others and remember that it is not about space or spatiality; it is always about spatiotemporality. Our debates in geography too often set time aside or position it as an orthogonal Newtonian third dimension. This essentially freezes our ways of thinking about the world, putting us in danger of following economists' obsessions with equilibrium and pattern rather than with change. Therefore, we need to attend to history, to the irreversibly emergent nature of space-time as these complex systems co-evolve. I would argue that incorporating time adequately into how we think about spatiality remains a major challenge for geographical theorists.

Finally, in terms of methodological issues, I want to strongly urge that we move away from methodological and spatiotheoretical predispositions which have tended not only to separate out different kinds of ways of thinking about space, but also to associate them with particular kinds of methodologies. As I have argued elsewhere, this creates caricatures that are counterproductive (Sheppard, 2001, 2005). Consider, for example, how mathematical formulations of the world can be constructed in ways that have all kinds of dialectical and even Deleuzian properties to them. Folding space is not just something which happens in Marcus Doel's (1999) *Poststructuralist Geographies*, or in Deleuze, but happens just as much in the mathematics of complexity theory (DeLanda, 2006; Sheppard, 2008). Alternatively, consider how GIS – a technology that, of any that you can think of in geography, is based on Boolean logics that social theorists can be quick to criticize – has shown a remarkable flexibility in connecting with other kinds of spatial logics and spatial representations, creating qualitative, feminist and ethnographic GIS, etc. (Cope and Elwood, 2009; Kwan, 2002; Schuurman, 2002).

Spatialities are always open, up for grabs. Any time we try to create boundaries between this spatial concept and that, or this methodological approach and that, we are short-changing our ability to try to make sense of this whole mess.

Nigel Thrift

The organizers of this session sent us a formidable list of questions we might answer concerning space, not just on matters vegetable, animal and mineral, but also metaphysical, logical, categorical, even biographical – I feel there is a moment of Gilbert and Sullivan in there, if I could only get to it. I thought what I would do is just answer one kind of quasi-biographical question, hoping that I could touch on some of the others that were asked as I wend along my merry way.

I suppose the best way I could summarize why I became interested in space in the way that I did was that I was interested in enunciating a kind of dynamic notion of space; one in which it is possible to subscribe to a sense of space as fields of differential movement. And I started out with an interest in how space and time interlocked, which led me naturally into fields like 'time geography' and even methods like multidimensional scaling (Thrift, 1977a, 1977b). I then proceeded, in a somewhat naive way, it has to be said, to try to link these kinds of areas to what I thought of at the time as larger forces, like capitalism, helped by the thoughts of, for example, Marx on time and space (Thrift, 1983). Then I suppose I moved on to a more general emphasis on movement, one which framed being as a never-ending production of spaces and times (Thrift, 1996, 2008). That is why I do not think there could ever be a single ontology.

Like all writers, I had to spend a lot of time excavating the forerunners of my own thoughts. You find, normally, that every thought you have that you think is original has already been thought 100 times by someone beforehand. And that is, of course, a never-ending process of rediscovery. I also encountered, luckily, a whole series of what one might call orphan thinkers of various stripes – whom I kind of tripped across by accident – who enliven this whole process. I am very taken at the moment, for example, with the work of a German writer called Heiner Muhlmann, who writes things that are truly crazy and extremely interesting, both at the same time (see Muhlmann, 2005). Finally, I was able to make that journey in the company of other much more inspired contemporaries who taught me an awful lot, even when I disagreed with them, and many of them are here today.

At the same time, of course, while all this intellectual rambling was going on, the world was

changing. In particular, the kinds of technologies that we used in everyday life made it increasingly possible to track and trace movement and to frame the world as movement. The kinds of things that Torsten Hägerstrand wanted to do – such as producing a kind of dynamic census of, I suspect, just about everything, changing moment by moment – are becoming a kind of reality, bit by bit. In turn, and not coincidentally, we are entering a kind of diagrammatic world that reflects back on itself in all sorts of rather interesting ways. For example, just look at contemporary continental philosophy that is intent on etching the shape or the outline of thought through various kinds of spatialization. And I do not think it is a coincidence that that is happening at this particular time.

Again, and at the same time, across academia then more generally, people became interested in space. I was never exactly sure why this happened and I am still not. And the reason for that is simply because the impulse sprang from a whole series of inexact motives of one form or another. Look, for example, at postcolonial writers refiguring historical memory. Look at philosophers trying to produce new takes on immanence. Look at the reworking of the political, which connects the social and the somatic in political theory. Look at rewriting the landscape in literary works or even acting as the fuel of the current interest in matters material, whether that be in the form of objects or new forms of media.

Whatever the reason for this spatial impulse, in large parts of social science and humanities it has not only produced new takes on the empirical – and, by God, we need those because, frankly, social scientists will become a dying breed, I suspect, unless they can start generating new ways of doing empirical work – but it has also forced theory to take on board what one might call a kind of second naturalism, as well as pointing to the resonances from forces that we cannot explicate but we know are there because we can feel them in various ways. In part, then, this spatial impulse was simply another fad. In part it was something with genuine grip. I suspect it was always thus.

So where are we now? I have only a few clues. We are in the middle of it. How can we possibly know, in any strong sense? Instead of trying to claim that the whole lot of everything can or should be explained, what I should like to think is that what the emphasis on space might have shown is how little we can often explain and how often we can stifle as well as enliven. Contexts have their own dynamics and what comes out of them is often unpredictable, excessive, and certainly is only partly open to what we call theory. The world, in certain senses, is continually a kind of experiment and the best we can often do is harvest the situation to our advantage. I suppose one of the concerns I have is that what we might loosely – and I do mean loosely – call 'the Left' has undersold a lot of the time this skill of reading propensity and with it the possibility of conducting a much more widespread politics of, if you like, 'sign', or should it be 'signal' and 'sight' intertwined? In particular, I think, 'the Left' tends to underestimate the process of *doing* as a moment in its own right and not just as a way station to a secure goal that has already been legislated.

I could go on, but let me turn instead in the last part of this talklet to my sense of what I think is happening in the world at present. I think one should, in a sense, put one's money where one's mouth is, so I will do that. Roughly speaking, I think the world is being refashioned so that what one might very generally call 'media techniques' – for example, drawn from practices like film but certainly not just from the practices of film – are becoming 'for real', etched into the fabric of spaces in such a way that the atmosphere of these spaces can be reliably reproduced, like the frames of film. Save, of course, that the frames bleed into each other, and that they are not really frames, but more technologies that allow the shorthand of the glance to be actualized by providing just enough prompts and props to allow detail to be inferred rather than provided.

That process of what we might call diagrammatology, using words, images, numbers, is happening because new kinds of three-dimensional writing which incorporate all kinds of ways of signing and sensing the world are coming into existence. These allow spaces to be explicated in ways that were heretofore unavailable. Spaces can, in a sense, be represented in ways that would not have been the case in the past. And such writing operates in the domain of affect, but as a domain that is calculated,

thereby bringing feeling and calculation together in the classic Deleuzian way, rather than holding them apart as is often conventional. Such writing is not abstracted from a mode of life. Indeed, in certain senses it is a mode of life.

In my recent work, what I have tried to describe is the current ambition of one agency out of many to actually do this. I have called that agency – and one puts a few chips, I suppose, on the table at this point – the 'security-entertainment complex' (Thrift, 2011, after Sterling, 2009). You can call it a complex, you can call it what you like, but I am sure it is complex! The phrase is in contradistinction to the military-industrial complex since I think it marks the passing of a particular way of proceeding. And what this new agency is trying to do is to remake the world in its image by producing, through this continual generation of frames, what I call 'Life World Inc' – by which I mean a machine that is there for mass-producing different phenomenologies frame by frame using this kind of three-dimensional writing.

Now, one of the reasons I have fixed on this agency is because I think it is relatively new. There are other agencies in the world that are also extraordinarily important in all sorts of ways, but I do not think they are that new. Finance is a good example – when you look at the current crisis, you think, 'My God, we've seen this over and over again'. And, indeed, many people now argue that finance is probably best likened to a kind of smokestack industry with a large number of pollutants associated with it.

Anyway, the kinds of possibilities I am trying to describe could never have unfolded unless the spatial template of the world could be changed and a new kind of space, I think, is gradually being rolled out across the world. It has taken a long time to produce. But I think it is extremely interesting. And, in a sense, what it consists of is two epistemological shifts that have transmuted into ontological ones.

In the first pass, the Euclidean model of numbered and angled space produced a grid over the world. That process, of course, took hundreds and hundreds of years to actually come to pass, and it only really finally stopped with the advent of global positioning systems. The second pass overlapped and it began with the introduction of new forms of information technology that produced a generalized capacity to trap movement that is likely to end with the redefinition of the world of persons and objects as constituent elements of a kind of mutually constitutive moving frame. This second pass is still in formation. Already I think we can see it is producing a kind of world of 'movement-space', at least in those places where the technology stretches (Thrift, 2004), a space in which movement is able to take on a different form, no longer understood as a simple displacement in space, knowable only in terms of the movement already taken, but arising instead from the institution of what Erin Manning (2009: 187) calls a 'resonant grid' that can itself shift shape and that is able to detect and work with the coming into existence as well as that which already exists. Once you can do that, once you can actualize that kind of logic of propensity using that kind of moving frame, then the continual production of worlds becomes a possibility.

If I had to summarize the developments I want to describe, I would draw on the work of Tim Ingold. Ingold is an exceptionally interesting but, in the end, absolutely rock solid traditional phenomenologist. His work on 'lines' argues that we are beset by a world in which Euclidean lines, which work from point to point, have superseded an older and better way of proceeding which might be understood, if you like, as the wayfaring line, the kind of line which can wander about and which, by inference, is closer to the fabric of the world (Ingold, 2007). But I would argue that the kind of world in which this wandering wayfaring line held sway is now being reconstructed but out of the fields of number, out of the stuff of calculable coordinates. And, in turn, this space is also, I think, producing new ways of doing social science and of restarting the social. People like Mike Savage and Roger Burrows in the UK have argued that, unless we can do something new, given the profusion of data that is likely to become available, parts of social science will simply become redundant (Savage and Burrows, 2007). If you have got populations, a lot of the time, will you necessarily need to do some of the things that we currently see as business as usual?

But I think what is really interesting coming out of this new kind of space is the possibilities it

produces for linking together the humanities and the social sciences in various ways. Not here but elsewhere I have talked about the ways in which that might be possible; for example, by reworking various kinds of phenomenological motives through new ways of doing architecture; and by reworking what we mean by mapping. It is hardly bringing news to a conference of geographers that there has been an absolute renaissance of mapping going on over the last ten years or so, much of that driven by an interaction between the social sciences and the humanities (Goodchild, 2009). And that is starting, I think, to produce genuinely new ways of thinking about the world and new ways of actually doing the politics of the world.

Yi-Fu Tuan

I hate to be the creature of my time, and particularly of my age, but I am afraid this talk is going to review both. In other words, although the speakers thus far have addressed the present and the future, what I have to say here cannot help but have a slightly musty odour to it.

In 2005, I went back to China after an absence of 64 years. My Chinese was rusty and I dreaded having to give talks on 'Space and Place' in Chinese. In the end, as the better part of valour, I spoke in English. I was to find later how stilted translations of 'space' and 'place' could sound in Chinese. None of them quite fitted. The English words 'space' and 'place' turn out to include meanings that have no close parallel in Chinese, nor, I dare say, in other languages. Words can gain or lose meaning with time. It just happens that 'space' and 'place' have sponged up an unusual variety. New ones, moreover, are being added, as, for example, the colloquial 'spaced-out' and our own semi-technical 'spatiality'.

Further complicating the meaning of 'space and place' are such related binaries as 'nature and culture', 'town and country', 'city and wilderness', and 'home and world', all of which are in common use. Over time, some of their meanings have been added to those of 'space and place', enriching them. A similar process has very likely occurred in China. If so, the Chinese words for 'space' and 'place', whatever they are, can only have distanced themselves further from the English ones. The reason is this. Chinese binaries, whose meanings have been added to the Chinese for 'space and place', differ themselves in meanings from their English analogues. The words *chao ye* (court and wilderness) are a case in point. They appear to be analogous to 'city and wilderness', but this is misleading. The meaning of *ye*, unlike that of 'wildness' or 'wilderness', is almost wholly negative. To Chinese farmers, the nomads who roamed the open spaces beyond the Great Wall were uncouth barbarians and little else. In the western world, ancient Romans might well have thought the same of the Germanic tribes, but in modern times, following the West's Romantic turn in the 18th century, a shift in attitude occurred such that peoples beyond the civilized world were seen not only as wild, but also as noble. With this shift, wilderness itself gained a more positive aura.

In attitude toward 'space' and 'place', contrast between East and West was perhaps sharpest in the 19th and early 20th centuries. During this period, the Chinese viewed space beyond the densely settled farmlands as unappealing, even threatening, and they moved into it only under duress. Americans, by contrast, saw such open space in their country as freedom and opportunity. Space that led outward to where the land met the sky stood for hope. Prospect, for Americans, has the double meaning of view and future. It is what they could see from their picture window. The traditional Chinese courtyard house had no picture window. Rather than space stretching to the horizon, the only broad expanse of space was the sky above, and it stood not so much for hope in this world as hope for Heaven's benevolence in the next.

Now, you may wonder, why this excursus into cultural geography? I offer it as my answer to a question that the organizers of this session have asked us panellists to address, namely, is a theory of space and spatiality possible? My answer is that I have my doubts, for space, to me, is a cultural and experiential construct, the meaning of which can vary widely from people to people, and from individual to individual. This fact – that space has an unusual range of subtly differentiated meanings – invites us to engage in taxonomy, comparison, and the tracing of their evolutionary course rather than

seek the Grail of an all-encompassing theory. In other words, space remains geography, not physics.

What about spatiality? I cannot say, for my understanding of the term is too hazy. I do wonder, however, this. If a promising theory is in the works and has been so for some time, shouldn't we have by now a common vocabulary and a common set of goals? We don't, do we? We may actually have moved apart, become islands unto ourselves, close to one another only in that we share a common intellectual ancestry, or that, like today, we happen to be seated on the same panel. Regrettable though this state of isolation is from the standpoint of our desire for commonality and universality, society at large may rejoice in our differences, in the diversity of our offerings, and in the fact that meetings of the Association of American Geographers (AAG) have, increasingly, the rambunctious feel of a carnival.

Still, as intellectuals, we continue to yearn for a language, a theoretical statement, that commands the attention of many. While we wait for it to emerge, I suggest that we look more closely at what we already have, which is the power of insight to come up with an idea, a relationship, that receives nods of recognition – if not worldwide, then across cultural barriers and personal limitations. Here are two examples. The first is from Roland Barthes. In a typical *aperçu*, he reminds us of how the sense of closeness and distance is linked to personal pronouns. 'We' implies closeness, 'you' a certain distance, and the third person singular – 'he' or 'she' – a still greater distance (Barthes, 1977: 168–169). If in conversation we hear a man refer to his friend as 'he' rather than as 'Paul', we will know that their relationship has cooled. The second example is from T.S. Eliot's poetry. I am struck by two lines. One is: 'I have lain on the floor of the sea and breathed with the breathing of the sea-anemone'. The other is: 'I have lain in the soil and criticised the worm' (Eliot, 1935: 65). In these two lines, deep intimacy with nature is first invoked, and then broken by a single unexpected word – 'criticise'. Hinted in them is the fragility of human bonding, the fact that we can so easily create distance – make space yawn – even while we are in bed with the other.

Now, I believe that the audience in this room, made up of geographers of different backgrounds and generations, has no trouble understanding these two examples of psychological distancing. Isn't it strange that this should be the case when few of us fully grasp what our own theorists say about space and spatiality, even though they speak in prose and strive, as scholars of a scientific or philosophical bent, for maximum clarity? Suppose one theorist does come up with a theory or framework that grips the imagination and commands the respect of many. Can it be that its power lies not, as the theorist himself may believe, in its compelling logic, but rather in its hidden metaphors – its poetry?

Questions

Najeeb Jan (University of Colorado, USA)

In your closing remarks you suggested that the poetry within our concepts is often more compelling than their formal or logical senses. The privileging of the poetic over the technical element of thought suggests the proximity between the concept of spatiality and the thought of ontology, which is to say that at the limits of thought the concept of spatiality cannot be inquired about in isolation from the concept of being. If that is the case then it becomes critical – in order to bring sense to spatiality – to think more carefully about what we mean when we invoke the term ontology. Could I ask the panellists to speak a bit more concretely about their understanding of the meaning of the term 'ontology' and its philosophical genealogy?

Gunnar Olsson. A very good question, a question which in my mind has much to do with rhetoric, that is with the ways in which we are anchoring our statements in whatever we may be referring to. That said, we clearly find it easier to share the world of material things like tables and chairs than to agree about social relations like hopes and fears. And this is why Immanuel Kant devoted his entire life to mapping the boundary between the phenomena that exist and the noumena that subsist; theoretical philosopher in the issues he was thinking *about*, practicing geographer in the languages he was thinking *in*. Yet not even he was sensitive enough to avoid all the traps of misplaced concreteness, of treating the

invisible as if it were visible. But what else could he have done, for he too conceived of human thought-and-action as a game of ontological transformations, his geographic metaphors setting off explosions of metonymic associations: 'Let there be, and there is.'

Towards that background let me briefly return to the key question of my introductory comments: 'Is metaphor an inherently spatial concept?' Once that question has been posed, what is its relation to the all-embracing censorship paragraph of the second commandment; as the sovereign of sovereigns twice decreed, 'you shall not make for yourself an idol [and] you shall not misuse the name of the LORD your God' (Exodus 20: 4 and 7; Deuteronomy 5: 8 and 10). Notice, though, that the punishment for spatializing the abstract (that is for forming a sculpture or drawing a picture) is far greater than for temporizing the power-holder's name (that is for telling a story). Please also recall that every map is a merging together of picture and story, indicative and imperative in the same breath. As William Blake (1975: xviii) put it, 'prisons are built with stones of law, brothels with bricks of religion'.

Wise is therefore the ontologist to remember Aristotle's saying that rhetoric and dialectics are the twin sisters of each other. And up-to-date is the dialectician who knows that all that is solid melts into air.

Nigel Thrift. The first thing, of course, is that there are many different ways that you can define ontologies. If I was doing it I would probably index the Humean sense of the term, as inferences about the world's connections, natural organizations, perceptions of experience and causation and of what therefore constitutes both existence and non-existence. So that would, if you like, be a very general definition. Going on from that, though, I think what is interesting about the current moment is there are a lot of people who are playing around with this notion with the result, of course, that it has become extremely confused. But there are, I think, very good reasons for that which probably come down to the fact that we have, in all sorts of ways, multiplied what one might call epistemology-speak, but that we are only just now really starting to multiply ontology-speak. And, of course, some of these attempts to rework ontology will be extraordinarily hopeless and some will not. But you can already see a number of links to other arguments, for example, that there is not just one ontology that one has to rely on; there could be all sorts of them in the world. Similarly, there is also the argument that there is absolutely no reason to think that it would not be possible to construct the predicates of ontology and, in a sense, therefore, 'the social' becomes very, very intertwined with what we mean and how we do ontology.

Yi-Fu Tuan. I have a question, which is simply this. I have often heard it said that all western philosophies are footnotes to Plato. So my question is: how did Plato manage without using the word 'ontology'?

Eric Sheppard. The only point I want to add is that there has been this multiplication of ontologies, with poststructuralist philosophies providing rationales for a metastization of what the term means. I certainly agree that there is no meta-ontological position from which one can defend the one way in which the world is supposed to be. My worry is what is at stake when people deploy the term 'ontology' rhetorically, as a line in the sand. To say that my particular statement about spatiality is an ontological statement runs a danger, in my view, of asserting authority. It makes me (seem like) a real philosopher if I can use the deepest of its (western) concepts, and exert power over the conversation in this way. As I suggested in my comments, when ontology becomes a line in the sand, it is either 'my ontology' or 'your ontology'. But these are just different ways of seeing the world. How do you actually engage in a constructive way beyond such oppositions?

Margaret Grieco (Edinburgh Napier University, UK)

It would be interesting to see some discussion of gender because it seems to me that we are not looking at gendered geographies ... well we are *looking* at gendered geography (the panel on the stage is male, the audience is predominantly female), and it is not very positive I have to say. But we should be thinking about children's geography that is going

on, the geography of older people, and indeed gendered geography, women's geography. And I think if we are going to deal with ontology you could kind of play with the notion that it is the boundaries of our being, and in these different social situations we have different boundaries around our beings. So possibly we have different epistemologies. So I think the interesting question is: what is the relationship between ontology and epistemology?

Peter Merriman. I thought the constitution of the panel would come up as a question and I know Eric mentioned it in his talk. I did not want to give a history of the constitution of the panel, but we had originally conceived three panels on the theme, and we did invite a number of prominent female and feminist theorists of space to participate, as well as sociologists and philosophers, but unfortunately they were unable to attend.

Eric Sheppard. All knowledge is situated and one has to take into account the situatedness of this particular group of people and how we came together, wittingly or unwittingly, as I suggested in my comments. So, absolutely: gender, ethnicity and all kinds of other issues are important. I would like to invite contributions from others that offer up those other perspectives. As to the issue of epistemology and ontology, the only thing I can offer on this is that I talk to philosophers, and cannot even get them to agree on what counts as an epistemology or an ontology when talking about particular debates in the philosophy of science, so I am just as ill-equipped as they are to tell you exactly which is which under all circumstances. I would argue that ontologies have epistemological implications, absolutely (poststructuralists would argue the opposite: Dixon and Jones, 1998). What this means in terms of going beyond epistemology to methodology is more complicated, I think. Often there is a variety of methodological approaches that will allow you take up certain kinds of epistemological priorities. But I would not be surprised to learn that that is up for grabs as well.

Gunnar Olsson. I think it is important to realize that epistemology and ontology are so intricately intertwined that the two cannot be separated, that you cannot have one without the other. Yet it is difficult to keep both in focus at the same time: when we are trying to understand *how* something is, we are telling epistemological stories; when we are asking *what* that something is, we are drawing ontological pictures. What normally happens is that whenever we run into problems with one of these techniques of representation we try to handle them by switching to the other; as epistemology anchors itself in ontology, so ontology transcends itself by shifting into epistemology. But what does the growing interest in what we are talking *about* tell us about the shortcomings of the languages we are talking *in*? Why the strong drift away from ambiguity to certainty? Is fundamentalism a political response to events beyond our control, a way of dealing with a world that refuses to sit still?

Whatever the answers there is no doubt that we have experienced a most remarkable development. Indeed I am willing to bet that in 1964, when I was attending my first AAG annual meeting, very few of us (myself included) knew what the terms 'epistemology' and 'ontology' actually meant.

Mauro Caraccioli (University of Florida, USA)

Earlier today Professor Jeff Malpas (University of Tasmania) encouraged geographers not merely to sit and read philosophers but to sort of sit down and have a nice candlelit dinner with them and engage in some dialogues, and throughout the session the panellists have mentioned prominent philosophers, e.g. Plato, Badiou. I would like to hear some more of the panel's thoughts on who are the particular thinkers that they have had dialogues with across their careers. But more importantly I would ask: how much would you encourage contemporary geographers to pick a thinker or two to have that lifelong dialogue with?

Peter Merriman. Maybe we could expand the question to include people such as artists who have inspired your thinking around space and spatiality, or indeed practitioners in other fields.

Gunnar Olsson. As I have already stressed, there are essentially two ways of communicating, one

through pictures, the other through stories. To any geographer this should be exceptionally interesting, because the place where the two modes come together is in the map itself. The pictorial elements are obvious: the legend, the scale, the projection, the perspective. But why the story? Because the very purpose of the map is to help us find the way. And way-finding, my friends, is structured exactly as a travel story, logical deduction the outstanding illustration of how the three fix-points of premises and conclusion are woven together into a net of longitudes and latitudes. In my own attempts to understand the secrets of this art of triangulation, I have drawn on a range of remarkable artists, all of them explorers of the perspective, all of them well aware that what I happen to see depends on where I happen to stand: Filippo Brunelleschi, Paul Cézanne, Mark Rothko, Marcel Duchamp, the latter the most profound critic of cartographic reason ever to be.

Nigel Thrift. It is an impossible question to answer in all sorts of ways. Let me try to take what Gunnar said and say the same thing in a slightly different way. So if I was looking at the pictures that inspired me, it would undoubtedly be those of Torsten Hägerstrand. They said something more than just the diagram itself. And they still say things, I think, about open ambition, and a way of inscribing the world which is very important. If you come on to story, then the story that I think probably most inspired me at one time would simply be that of Marx. I do not think there is any doubt about that. I think it is true to say that many people would think that I had veered some way away from that story but, at the same time, I think it is important to remember the incredible sense of narrative drive that exists in Marx. Going on from that, I think of two other things. First, there are the kinds of thinkers who want to draw you into their world. They have vast vocabularies of one form or another that are often initially completely incomprehensible so that you have to spend all your time looking back to the definitions of the words they are using. Some of the time, of course, there is a kind of game of bluff and counterbluff going on. But writers like Gilles Deleuze and Alfred North Whitehead have that kind of capacity to, in a sense, try to conjure up a very particular kind of world. And then, second, and going on to what Gunnar was saying about maps, I suppose the single artist who recently has inspired me most is the artist Joyce Kozloff. She does some extraordinary work on trying to remap maps in all sorts of ways which have included trying to remap gender (Kozloff, 2008). I can see in it something of the same property as in Hägerstrand's diagrams: that sense of potentiality that comes from trying to rewrite and refigure certain parts of what the world is.

Yi-Fu Tuan. Well, being a person of my time, I find it difficult to use 'he' and 'she' or just 'she' in what I write. But I do not feel apologetic because the non-geographers, philosophers, writers who influenced me most are: Susanne Langer (a student of Whitehead), Iris Murdoch and Hannah Arendt. But I should also mention Maurice Merleau-Ponty for his understanding of spatiality and the existentialists (particularly Jean-Paul Sartre and Albert Camus) for their novelistic approach to the human condition. And, by the way, apparently Claude Levi-Strauss dismisses existentialism as 'shop girl metaphysics' (Maslin, 2010).

Eric Sheppard. In 1964, when Gunnar came to his first AAG meeting, geography as a discipline was seeking to ground its respectability through a claim to be a science and having a rooting in science. I sometimes wonder if we have now moved to try to claim respectability by rooting ourselves in philosophy. And I take seriously Jeff Malpas' challenge this morning that while geographers may spend a lot of time reading particular philosophers, do they actually sit down and debate with the philosophy profession about these issues and seek to learn from those debates in the ways we wish economists would sit down and debate with geographers about their conceptions of geography? Coming to your question, I find this really hard to answer, partly because it makes me feel old to be in a position to answer a question like this, and in part because I think rattling off a list of names is trying to create a claim to expertise that I feel uncomfortable about. I would say that my approach to the philosophical literature has often been quite pragmatic. I have not chosen

one philosopher to read deeply, with the exception of Marx. Rather, I have moved from one writer to another, reading successively, shallowly and inexpertly, which I must acknowledge – perhaps seeking inspiration in other registers for ideas that I am thinking around in my head. The same goes for art. I have got all kinds of painters I can think of who have influenced me at various points in time, but there is no one that stands out when a question like this comes up. I guess the other cluster of thinkers who have been important for me over the last five to ten years, on my wayward ways through these literatures, has been philosophers of science, who have exposed (for me) ways of thinking about knowledge in a very different way.

Helga Leitner (University of Minnesota, USA)

I find it interesting that nobody mentioned that they draw their inspiration from the people they do research on or with, rather than just philosophers and writers. My question, though, is for Nigel Thrift. Nigel was arguing that the spatial template of the world is changing, and he made a very interesting and convincing argument about these new 'movement-spaces'. I was wondering in how far, if we speak of a spatial template of the world and we speak of these new 'movement-spaces', we again privilege a particular spatiality, the particular spatiality of mobility, and what happens to the symbolic meaning of place, or scale and networks. Shouldn't we think about, for example, how these new 'movement-spaces' in turn articulate and redefine the meaning of spaces?

Nigel Thrift. I want to say two things. The first is that what I am arguing, relative to the conversations taking place, is that what we can see in the modern world is epistemology leading to ontology. What we are seeing is, in a sense, a way of knowing which is becoming what is, and that is what I am arguing this spatial template is actually producing. So I think that is the first thing to say. The second thing is that, within that process, if there is one thing I am sure about it is that one of the impulses behind doing this is the ability to actually mobilize and then harness diversity, to be able to produce lots and lots of so-called species of spaces of one form or another which arise from a process of syndication rather than difference. Because if you have more of such diversity you will also have more opportunities for profit. And I think it would be naive to suggest that this search after profit is not a factor in what is going on.

Emma Roe (University of Southampton, UK)

There has been a lot of reference to the humanities (e.g. art) as potentially offering geography a resource for theorizing space and spatiality. Natural science has not yet been referenced in this debate. I have spent quite a lot of time working with animal scientists over the last five years and this year I have had the opportunity to work with humanities academics. If I reflect on how as a cultural geographer I felt working with these different disciplines, the work with scientists felt constraining, limiting, rigid, whereas with the humanities a soft flexibility, new ways for thought to travel, a curiosity about their processes and practices of study. It is just remarkably different. Where can work in the natural sciences take us in our continued theorization of space and spatiality?

Eric Sheppard. Just a couple of thoughts on this. First of all, I think we have to remember that the spatialities of the world in which we live are not constructed by humans alone but are constructed by the socionatural processes which we shape and inhabit. So part of this is understanding the various kinds of processes that we gather under the label of biology, ecology or earth science, and the ways in which they constitute spatialities of the world which we cohabit. So that is one area where, of course, research in that tradition can be very helpful. My second point is to suggest that I think that there is often a false dualism between how humanists and scientists think, and I say that as somebody who does not think of himself as a humanist or a scientist. My father is a scientist, who has taken to reading philosophy of science after he retired, and he berates me again and again, saying that the way scientists actually work and think is much more like humanists than the caricature that is created of traditions of scientific thinking. So, I would suggest,

notwithstanding protestations to the contrary, scientists often think very much like humanists. They get excited about things. They debate different interpretations of the same phenomenon. They follow their passions. They get caught up in their predispositions as to what they are going to see. By the same token, I think humanists are seeking their own particular logical frameworks for making sense of the world in a rigorous way. One of the great things about being in a discipline like geography is that we have the capacity to construct conversations across these divides, even though the conversation about spatiality has often remained more or less on the human side of the discipline. That is unfortunate: I think we have a lot to learn from expanding our conceptions.

Yi-Fu Tuan. I may not be answering the question but I feel that there has been a kind of a decline in standards in the humanities. When I was a student in England in 1950 the most prestigious subject was classics, not physics. Oxford University in 1948 did not even have engineering. But I gather that the humanities, even at these old British universities, have declined. At my university now, University of Wisconsin-Madison, there is this huge complex of buildings devoted to science. The humanities have become almost a kind of a playground for all of us who do not feel that we know calculus very well. But I am also struck by the degree of learning that was called for in the humanities in the old days. For instance there is the famous poet, A.E. Housman, who was also Kennedy Professor of Latin at the University of Cambridge. He is famous for many things but, outstandingly, for compiling a five-volume critical edition of Marcus Manilius' *Astronomicon* (Housman, 1903–1930, 1937). He was a second-rate Roman poet. A.E. Housman spent years editing the work of a second-rate poet in the 2nd century AD. And he produced five volumes. And you wonder, isn't this a waste of time? Everybody knows Manilius is not a great poet. But you see, Manilius did write voluminously and the scholarship of these five volumes edited by Housman was just astonishing because this Roman poet mentioned everything, maybe a weed in his yard or the location of the constellation in the sky. So, as the editor of this work, Housman felt that he had to annotate everything that this poet mentioned. If he mentioned a pot, what was this pot made of? This would be part of it. And he had to consult his colleagues in astronomy to determine whether the stars were located at that location. So it is a monumental, almost geography-like, comprehensive work.

Nigel Thrift. Just a couple of points. Whether you like it or not, science is a part of the world and is becoming more so over time. Indeed, in a sense, this links into some of the things we have been talking about – for example, recent developments in continental philosophy that are basically trying to reinvent naturalism in all sorts of ways, often using scientific motifs of one form or another. Then, to come back to the point you made about humanities, in some ways you were right but in other ways I think some of the things that science does can instil just exactly the same kinds of moments as the humanities. I am thinking just of two things recently that I have attended. One was a lecture by a quantum theorist and I can honestly say I understood about 1% of it. But one of the things that has become clear is that it is now possible to set up an experiment in which particles are interacting with no distance effect eight miles apart. This is an extraordinary thing if it turns out to be the case. The second thing was a British TV programme which some of my colleagues may have seen, which was headed by a physicist called Brian Cox. Cox went into a cave somewhere in the world, I cannot remember where, to introduce himself to a being called snottite, which is named precisely as to how it looks. But what is extraordinary about it is that it breathes in sulphur dioxide and excretes sulphuric acid. And again I had no idea that that 'life' form existed and it is quite extraordinary. That sense of wonder strikes me as common to the sciences and the humanities. Moreover, there is a way in which you can see the humanities coping with that sense of scientific wonder. For example, we have a poet in Warwick called David Morley who does beautiful writing in this particular area (Morley, 2010). But I suppose I also hold to the line that if we lose that quality of wonder we also lose a vast amount of what universities are about. I think that in some senses universities are under siege and we do need

to remind ourselves about what institutions like universities are about, as well as the many other things we also need to attend to.

Afterword by Peter Merriman and Martin Jones

In this afterword we do not want to try to summarize the points raised by the four panellists and five audience members who asked questions. Rather than close down the debate we would like to focus on two related themes which might broadly be termed, first, technologies of space and, second, languages of space and spacing. First, despite the persistent attempts of many social scientists to think and move beyond Euclidean, Cartesian and Newtonian conceptions of space – as a dimensioned container or measure of extension in the world – and approach space as a social and cultural production, spaces are envisioned and produced through all manner of technologies of calculation, measurement and representation which, as Nigel Thrift points out, are increasingly coming to shape how we experience and understand the world. The increasing incorporation of complex computing technologies and software into western environments is generating a 'qualculative world' where 'enhanced calculativity' has merged into the 'space-time background', and corporate bodies and governments are increasingly able to locate and position agents and processes in a relative 'movement-space' (Thrift, 2004: 596, 597). New media techniques are being incorporated into the envisioning of spaces, and all of these different technologies are becoming important to how we literally and metaphorically 'write' spaces in different ways (Thrift, 2009b). The extent to which we can escape these scriptural conventions and economies is debatable. While a number of the contributors have highlighted the inventive and creative ways in which we can think and inhabit spaces, practise spaces differently, and resist dominant scriptings and codifications of space, Thrift's account of the incorporation of these epistemologies, spacings and scriptings into western ontologies could be seen to focus more on the dark processes of encapturing and enspacing life than the creative consumptive practices by which people may re-enscript, evade or ignore these codified geo-graphies, these earthly and bodily writings.

Second, this leads us on to the question of different languages of space and spatiality. On the one hand, new technologies for understanding, measuring and representing space are frequently underpinned by new languages and modes of writing and inscribing space and, as Gunnar Olsson alludes to in his contribution, different practices and aesthetics of writing enact different modes and styles of spacing. On the other hand, the issue of language takes us beyond the issue of inscription and aesthetics, for the theories of space and spatiality which have emerged from such diverse disciplines as mathematics, physics, architecture, geography, philosophy and anthropology are themselves underpinned by different linguistic and scriptural traditions – mathematical, logographic, phonemic – which are closely aligned with epistemological and ontological assumptions about how the world is, what we can know, how we can infer and conclude (cf. Thrift, 2009b). Despite the mathematical forays of philosophers such as Alain Badiou and the philosophical forays of physicists such as Ilya Prigogine, for many observers mathematical equations, artistic representations and the written words of philosophers and humanities scholars are incommensurable modes of writing which often underpin different epistemological and ontological world-views, being associated with different languages of authority and differing capacities for universality and translatability.

Despite the imperious and imperial position of the English language in global affairs, there is no *universal* written language for apprehending or scripting space, and in their contributions both Gunnar Olsson and Yi-Fu Tuan point out that concepts like space and place do not always translate well into other languages and cultural contexts (e.g. Chinese), nor are they easy to map onto classical concepts such as *chora* or *topos* (cf. Casey, 1998). Spatial theories, knowledges, languages and ontologies need to be situated and s/placed in their historical, geographical, cultural and political contexts, and we should not assume that there is a universal language for scripting, understanding or representing space and spatiality. In remarking upon the visual images or pictures which have most

inspired him, Nigel Thrift refers to the time-space diagrams of the Swedish geographer Torsten Hägerstrand. At first sight, Hägerstrand's diagrams may appear to have a clarity and simplicity that is easily translated but, as Peter Gould pointed out in 1981, even Hägerstrand's space-time geography does not seamlessly translate from Swedish to English, for Anglophone understandings of space are much broader than Germanic and Swedish understandings of space (*rúm*/*room*/*raum*) as delimited, partitioned, constrained and located, incorporating these with Latin/French understandings of space (*espace*/*spatium*) as open, enlarged, infinite, liberated and free (Gould, 1981). In the past 50-odd years of spatial theorizing there have only been intermittent discussions of such non-Anglophone linguistic traditions and non-western cultural practices by which space and spatiality are understood and inhabited differently. Our languages of space, then, raise important issues of difference, translation, power and authority, and we could extend these beyond issues of cultural and linguistic difference to encompass the broader positioning and positionality of the panellists in this article. As a number of panellists and questioners observed, this panel was all-male, and its constitution – like recent attempts by others to draw up lists of 'key thinkers' (Hubbard and Kitchin, 2011; *Environment and Planning A*, 2005) – might be seen to: first, inadvertently reflect and reinforce the gender inequalities of the discipline; and, second, to be in danger of presenting a series of universalized masculine theorizations of space (cf. Rose, 1993). First, it was not our intention to have one all-male panel. When we were planning the sessions in late 2009 we were intending to organize two or three panels, and we invited a number of prominent female *and* feminist theorists of space to participate, as well as a number of prominent philosophers, sociologists and anthropologists, all of whom were unable to attend. We hope this deficiency will be rectified in the published responses to this article. On the second point, however, none of the four speakers claim to describe a singular or universal experience of space or place, and their clearly situated and carefully positioned responses reflect their own diverse biographies and philosophical and career trajectories. While acknowledging their gender and their relatively privileged positions within academia, we would not wish to flatten their biographies and simply pigeonhole them as members of a homogenized Euro-American male academic elite.

Acknowledgements

Pete and Martin would like to thank the speakers and audiences of all three sessions on 'Space and Spatiality in Theory' at the 2010 AAG Annual Conference, and the audience members who kindly agreed for their questions to be reproduced in the article.

Funding

Pete would like to acknowledge the financial support of the AHRC, Award Ref AH/H00243X/1. Martin would like to acknowledge the financial support of WISERD – Wales Institute of Social and Economic Research, Data and Methods – funded by ESRC and HEFCW.

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