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Rethinking affective atmospheres: Technology, perturbation and space times of the non-human

James Ash *

Northumbria University, Department of Media, United Kingdom

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ABSTRACT

This paper develops literatures on affective atmospheres to rethink the status of technical objects in human geographical analysis. Suggesting that narratives of affect and affordance have difficulty accounting for objects when they are not directly encountering one another, the paper draws upon Levi Bryant's discussion of allopoietic objects and Graham Harman's analysis of space and time to advance the concept of perturbation. In doing so, the paper argues that technical objects are not lifeless mechanisms but actively produce spatio-temporal atmospheres, which shape the humans who are immersed in these atmospheres. Using the iPhone 4 as a thought experiment to think through the different types of atmosphere that can be generated by technical objects, the paper suggests that geographers should attune themselves to these atmospheres and recognize the role they play in the organization and experience of space and time for humans.

1. Introduction

> "When a machine runs efficiently, when a matter of fact is settled, one need focus only on its inputs and outputs and not on its internal complexity. Thus, paradoxically, the more . . . technolog[ies] succeed, the more opaque and obscure they become" (Latour, 1999, p. 304).

> "Anyone who has ever had to . . . operate on a computational apparatus knows that a strange and unique world does stir within such a device. A tiny private universe rattles behind its glass and aluminium exoskeleton" (Bogost, 2012, p. 9).

As Bruno Latour argues in Pandora's Hope, the more refined technology becomes, the more it tends to sink into the background of human perception. In doing so, technology itself becomes a blackbox defined only through its capacity to complete tasks and produce outputs. Examples of modern blackboxes include computers, televisions, dishwashers, wireless routers and a whole host of other electronic and mechanical devices. Geographers such as Kitchin and Dodge point out that, while they are often inconspicuous, these blackboxes have profound effects on the organization of social life and production of space in the western world. As they put it:

> "Software conditions our very existence. Living beyond the mediation of software means being apart from collective life: not appearing in government databases; not using any utilities such as water and electricity or banking services; not using the many kinds of household appliances that rely on digital code to control functions, ranging from bathroom scales to washing machines . . ." (2011, VII).

Developing this perspective, Ian Bogost suggests that computational objects consist of a "tiny universe" of components that interact with one another. These components are necessary, but often invisible for the human beings who use these devices. As Bogost puts it: "for the computer to operate at all for us first requires a wealth of interactions to take place for itself" (2012, p. 10 emphasis in original). To understand these objects and how they relate to one another, Bogost suggests the development of an "alien phenomenology", a way to speculate about what it is to be a non-human thing. He uses a variety of methods to achieve this, including exploded diagrams, lists and metaphor.

In a similar spirit, drawing upon the work of Levi Bryant and Graham Harman, this paper develops a series of concepts to think about the ways in which technical objects relate to one another and to human beings outside of human consciousness or intentionality. The paper suggests that technical objects relate to one another through what Bryant (2011) terms "perturbations", which are active in the production of atmospheres (a term that refers to the circulation of perturbations to produce space times local to technical objects). Differentiating itself from existing accounts of affective atmosphere, the paper argues that these atmospheres

* Address: Department of Media, Faculty of Arts, Design & Social Sciences, Northumbria University, Lipman Building, Sandyford Road, Newcastle upon Tyne NE1 8ST, United Kingdom.
E-mail address: James.ash@northumbria.ac.uk

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generate the times and spaces that appear to both the humans and non-humans within them.

To make these claims the paper analyses a single object: the Apple iPhone 4, a popular form of smart phone at the time of writing. The iPhone 4 was released in 2010 in the USA. To date six models of the iPhone have been released (the iPhone, iPhone 3G, iPhone 3GS, iPhone 4, iPhone 4S and the iPhone 5), each of which has incrementally upgraded the phone's processing power and features. Estimates put total iPhone sales from 2007 to present at around 72 million phones (statistica.com).As a smart phone, the iPhone has multiple applications, including taking photos, recording movies, playing games, browsing the internet, text messaging and making phone calls.

The paper explores smart phones, and the iPhone 4 in particular, because it is a popular example of a complex, location-based piece of technology that has multiple functions and components. Due to its success, faults and issues with this model of the iPhone have been well covered by the media. As I argue in section three, it is in moments of breakdown that objects open themselves to new modes of analysis. Examining two components of the iPhone 4 that have been subject to criticism allows us to explore the implications of thinking about technical objects through the concepts of perturbation and atmosphere in a contemporary, relevant and interesting way.

In producing this account, the paper contributes to and informs a number of debates in human geography. Firstly the paper attends to debates regarding the status and nature of materiality in geographical analysis (see Whatmore, 2006; Thrift, 2005; Roberts, 2012; Bissell, 2010a, 2010b; Dewsbury, 2011; Gallacher, 2011; Romanillos, 2008, 2011). As Jackson and Fannin put it:

> "Matter has always been at the heart of geography. It is the stuff of the Earth we write ... But how we write about and think through these things—for 'things' they are—emerges from what presents itself to us and, in a sense, thinks through us. Things are always already presenting and not presenting; it has been learning how we see and listen that has been the focus for geography and its cognates" (2011, p. 435).

This paper, and the account of perturbation and atmosphere it argues for, could be read as another way of "listening" to the materiality of the world and how it presents itself to thought and perception in its own right. In this sense the paper moves beyond Anderson and Wylie's (2009) call to think about the multiple states and elements in which matter exists. As I develop through the paper, the examples of atmosphere outlined in section three offers a way thinking about materiality as something that is not reducible to static matter or interacting through brute causality, but as dynamic and selective in how aspects of an object engage with aspects of other objects.

As the paper outlines, this atmospheric approach is rather different from Actor Network Theory (ANT), which has arguably become one of the main approaches cultural geographers utilise to understand human/technology relations (for example, see Bingham, 1996; Murdoch, 1998). Whereas ANT is a strongly relational approach that considers how objects emerge from the relationship between things (Latour, 2002), as I argue in section two, an account of perturbation and atmosphere allows us to consider the non-relational aspects of entities, which ANT has difficulty accounting for.

The effect of conceptualizing objects as producing atmospheres alters the method and modes of analysis by which one can study objects and how one understands space and time in relation to them. Rather than following a thing to understand how it emerges from a set of relations (as in ANT), instead one can begin by attending to the singularity of the object itself and understand how the qualities it expresses are singular to this or that relation with other objects. Furthermore, rather than time and space being intrinsic to, or shaped by forces external to a thing, taking the non-relational aspect of objects seriously allows us to consider how time emerges from the interior of objects and space from the disjunctions and gaps between things.

Secondly then, the paper contributes to debates around affective atmospheres that are emerging in human geography and beyond (Adey, 2009; Ash, 2010, 2013; Anderson, 2009; Bissell, 2010a; Duff, 2010). Whereas these literatures tend to concentrate on how atmospheres shape humans' emotions and capacities, the account of perturbation presented here concentrates on the relationships between non-human things. The concept of perturbation emphasizes that the active communication between non-human and inorganic entities can generate atmospheres that have effects on humans within these atmospheres outside of a particular emotional or affective register, through the way they actively generate space and time.

Thirdly, this account of technical objects as generating atmospheres also expands recent debates around geographies of code, software and mobile technologies (Kinsley, 2010, 2011, 2012; Wilson, 2011a, 2011b; Perkins and Dodge, 2009; Dodge and Kitchin, 2005a, 2007; Galloway, 2010; Graham, 2010). Geographers have shown how specific technical objects shape peoples' spatial understanding and behavior. For example, Wilson (2012) suggests that mobile technology is leading to a new form of "conspicuous mobility" in which the disclosure of one's location is enabled and encouraged by a series of applications for mobile computational devices. He argues that this is leading to changes in individuals' spatial understanding and behavior:

> "the accrual of multiple locational traces weaves a narrative about the specifics of one's presence in space—enabling users to broadcast that curated narrative of the places they frequent, the neighborhoods they travel within, and the kinds of consumptive activities they afford" (2012, p. 5).

In a similar vein, Axon et al. (2012) suggest that GPS and Sat Nav technologies are "intrinsically changing people's wayfinding behavior, processes and practices of navigation and their understanding of what "maps are and do" (2012, p. 6). In this case, the technology of Sat Nav produces a very different mode of engagement compared to paper based maps.

While the above accounts are important, they tend to play down the actual status of the device as an object, instead emphasizing what people do with those objects. Following Meillassoux (2008), we might term these accounts correlationist in the sense that the mobile computational object is reduced to the way in which it appears to human beings rather than its status as an object in its own right. As Mackenzie argues, turning towards the materiality of these devices paints a very different, more complicated, picture of the assemblage of objects and processes that enable mobile devices to operate. For example, the networks on which mobile computational devices operate are an important component in their functioning. These networks have their own spatialities based around the transmission of various forms of radio waves. While these spatialities are invisible to the human eye, they can also be made present through various practices. As Mackenzie suggests:

> "wireless devices and infrastructures create zones or fields of equivocal and indistinct spatial proximity. Many events in recent years have broadcast awareness of this equivocal proximity. Publicity about war chalking, the short lived practice of marking the presence of nearby wireless networks on pavements or walls, was an early sign" (2010, p. 12).