Approaches to Transdisciplinarity

Bodies and Stories, Chapter 1, Draft

Babel

Within contemporary academic discourse, the pursuit of knowledge occurs through a diverse range of methodologies subscribing to various epistemologies. Each discipline condones a prescribed set of means for approaching a question, and sanctions specific modes for analysing, recording and publishing information. Such divisions have not always existed, the segregation of disciplines has been driven by academic structuration since the eighteenth century (Serres 1995: 51).

The problem posed when examining the impact of technology on the self is the numerous disciplines within which study may be conducted. The self has long been a subject of extensive contemplation. Approaches to understanding the self have been developed within philosophy and religion, and more recently within the social sciences including psychology, anthropology, and sociology. Within psychology alone, divergent methodologies to the analysis of the self have arisen within psychoanalysis, neuropsychology, and cognitive science.

Similarly, the study of technology has progressed in a number of disparate courses. The dominant paradigm for the discussion of technology at present is the sciences – in the case of mediating digital technologies, fields such as computer programming, electrical engineering and network design. In turn, these often draw on more fundamental scientific disciplines such as physics, chemistry and mathematics. Conversely, technology has become a subject for study in areas of the humanities such as history and cultural studies.

Examining the interrelation of the self and technology requires a discipline that encompasses both areas of study. While many of the disciplines discussed above do so to some degree, most privilege a particular view or approach to the study of hybrid self/technology issues. The view of the individual within a field such as computer science is reduced to the 'user', an object that is then deconstructed in a similar fashion to other components within the system. Users are allocated goals that may be achieved by performing certain actions – trivial methodologies that fail to provide adequate means for investigating issues of the self.

Conversely, fields within the humanities such as sociology tend to emphasise the individual over the technology. Studies will view technology through a functional lens, focussing on the broader social implications without a clear technical understanding of the technology involved. Exemplary of this is the use of psychology in the development of computer systems, primarily for the purpose of interface design and usability testing – the technology behind the interface remains opaque to psychological investigation.

The heterogenous nature of the self – partly signifying discursivity, partly pre-linguistic embodiment – and the opposition of self to technology are mirrored by the disciplinary disparity most suited to examining each part. No single discipline is suitably encompassing. To capture the richness of such a complex and heterogenous field of study, an approach is required that is not limited by the disciplinary rigour of traditional academic study.

Several theorists have provided considerable insight into this challenge, and proposed a number of methodological approaches intended to remedy this fragmented approach. Bruno Latour has written

extensively on the history of technology, and as a consequence has explored means to incorporate technological methods and information into areas dominated by the 'humanities'. Michel Serres has developed a philosophy of integration, bringing together threads from the arts and the sciences in ways that have often confounded contemporary scholars. More recently, Damien Broderick and Mick Michael have offered methodological approaches that aim to integrate science and humanities more tightly.

Bridges

For academics operating within a specific discipline, the easiest approach to challenges that exceed the boundaries of the discipline is to draw on other disciplines as disciplinary 'others'. By "slotting into the chosen discipline whatever insights others can furnish, perhaps even using the data derived in those other disciplines" (Michael 2000: 11) an apparently interdisciplinary work can be produced. The failing of such an endeavour is that the 'secondary' disciplines, and the material drawn from them, and invariably framed within the discourse of the primary discourse.

Perhaps the most straightforward approach to addressing this disciplinary 'othering' is that taken by Latour in his analysis of the doomed French transport system 'Aramis'. Latour acknowledged that investigating a mix of sociological and technological elements required the "fusion of two so clearly separated universes, that of culture and that of technology" (Latour 1996: viii). Failing to find a master discourse suitably flexible, Latour deploys a hybrid methodology he refers to as 'scientifiction' (Latour 1996: ix). Scientifiction weaves together sociological interviews with technical documents and a fictional narrative. Further, the technique allows Latour to inject the 'voice' of the technology (Aramis) into the piece – addressing his ongoing concern over the silence of 'nonhuman' subjects. Latour stresses that the "discursive modes have to be kept separate", which he achieves using typographical styles.

In this way scientifiction weaves together pieces of evidence from a number of disciplines, each being retained in the appropriate discursive mode. The reader must then provide much of the synthesis, actively drawing links between the juxtaposed elements. Further, the reader must be capable of appreciating a range of styles, and related lexicons.

Damien Broderick provides a more integrative and synthetic approach to addressing the 'yawning gap' between the disciplines falling into the macro-genres' of the 'humane arts' and the 'sciences'. (Broderick 1994: ix, 4) 'human prescriptive path toward synthesis. However, whereas Latour retains segregation within his text, Broderick suggests that the academic must search for "discursive transcodings which fold each discourse back into the other" (Broderick 1994: x). Such an approach relies on the textuality of both the humanities and the sciences. Any discipline can be framed in terms of the analysis of various texts – from literary texts to sociological interviews to experimental data. This leads Broderick to the conclusion that all disciplines are forms of discourse analysis, constructing varying narratives from their texts depending on the nature of the discipline (Broderick 1994: x). As a result, the pursuit of knowledge in all fields is merely variant forms of the "continuing analysis of coded information-flows". (Broderick 1994: 23) This homogeneity provides the means to link the various segregated disciplines.

Despite asserting this universality of approach, Broderick pragmatic suggests that the most effective way for both writers and readers to work across multiple disciplines involves learning through participation (Broderick 1994: 82) – not dissimilar from the immersion required by Serres. One of Broderick's concerns is the paucity of previous attempts at transcoding that have failed insufficient

understanding. He believes instances of scientific terms such as 'undecidability' (following Gödel) and 'uncertainty' (following Heisenberg) in the humanities are often "premature attempts at transcoding the two cultures." (Broderick 1994: 104) Despite charting numerous pitfalls of transcoding, Broderick fails to provide a pragmatic methodology. In closing, he cites Paul Feyerabend;

"The successful researcher frequently is a literate man, he knows mank tricks, ideas, ways of speaking, he is familiar with the details of history and abstractions of cosmology, he can combine fragments of widely differing points of view and quickly switch from one framework to another. He is not tied to any particular language for he may speak the language of fact and the language of fairytale side by side and mix them up in the most unexpected ways." (Feyerbrand 1978 in Broderick 1994: 131)

Such a description begins to sketch the outlines of a methodology of transcoding. Perhaps more accurately, it sketches the scholar who will be capable of deploying it. While intended to be general, Feyerbrand description is startlingly reminiscent of Michel Serres and his work. As a philosopher, Serres has dedicated many years to describing a path through the seperatist opposition of disciplines toward a more holistic approach which he terms 'interdisciplinary' (Serres 1995: 57). His work seamlessly draws together elements from diverse fields, yet maintains a non-specialist vocabulary. Serres achieves this by drawing on a deep knowledge of a wide range of fields. Such an approach demands that authors steep themselves in diverse disciplines over time, a hybrid education contrary to the channelling and specialisation of contemporary academia.

Both Broderick and Serres acknowledge in drawing together elements from sciences and humanities, there exists "no common language bridging this schism" (Serres 1995: 85). However, whereas Broderick suggests that the academic mush search for discursive transcodings, Serres advocates the use of everyday language drawing on deep referentiality. In employing 'everyday language', Serres leverages its 'amplitude' (Serres 1995: 24) – an effect that is achieved through drawing extensive reference to a wide range of discourses, from mythology to mathematics. While he avoids the separatist jargon of disciplines, Serres' style relies on his reader being well versed in the text from which he draws unacknowledged links. Latour observes that many critics describe Serres' style as poetic (Serres 1995). Such an appreciation of the literary skill of his writing belies a lack of comprehension of the extensive referentiality of his work.

The core of Serres' methodology is the authors' personal development as a thinker and writer schooled in many disciplines. He advocates an 'apprenticeship' that must "encompass everything", an education that "excludes nothing" and "attempts to include everything" (Serres 1995: 27). This examplar of the philosopher is described variously as Hermes, the Harlequin, or the Troubadour, a figure who "should know everything, should have lived everything and understood everything" (Serres 1995: 26); a traveller to many lands and arguably citizen of none. Learning comes about from 'cross breeding' (Serres 1977: 49).

For Serres, this traversal of both the academic and the resultant work through an interdisciplinary terrain is reflected in a similar temporal traversal. He rejects the linear, progressive historicism at the basis of most disciplines, suggesting that time can be better understood as a chaotic space of accelerations, reversals, halts and leaps existing at simultaneously at many scales (Serres 1995: 57). Mapping the discourse of any discipline into such a complex topological temporality results in a rejection of traditional notions of contemporality that makes Serres' work even more difficult. With a non-linear view of disciplinary progress, he draws together recent scientific experiments and classical works such as that of Luctretius. In this way, the space that Serres' academic troubadour

traverses is both a space of complex and chaotic mingling of disciplines, as well as a space of complex and chaotic mingling of moments in time.

In traversing various disciplines, Serres acknowledges that the academic is invariably a foreigner. However, his approach differs from that of disciplinary academics who have written work outside their own specialisation. Such 'cross-disciplinary' work is written from the viewpoint of a specific discipline, presenting other paradigms as the academic 'other'. These other disciplines are translated into the framework of the academic's primary discipline. Contrary to this, Serres insists on the need to abandon all reference points (Serres 1977: 5), leaving the academic "outside any community, but a little and just barely in all of them." (Serres 1977: 6) In this process, the academic becomes multiple, 'hyphenated'. And as a result, the academic finds elements of all disciplines "brought together in himself" (Serres 1995: 65).

The transient academic resembles the marginalised peoples of diaspora – a life of re-departures, pauses and arrivals where they are denied heritage; where their identity becomes multiplied through the complexity of both time and (disciplinary) space. (Trinh 1991: 14) Trinh describes these as 'hyphenated people' (Trinh 1991: 15), their space an "elsewhere that does not merely lie outside the center but radically striates it." (Trinh 1991: 14) Nameless and marginalised, the people of the hyphen dares, by necessity, to mix, to cross borders, and to introduce into discourse everything repressed by limits. The people of the hyphen possess a 'hybrid' identity (Bhabha 1994) – an identity that is 'neither one nor the other', retaining the semblance of each yet ambiguously 'in-between'. This identity is practiced not in two distinct spaces, but in a 'third space' (Bhabha 1994), and in-betweening of two cultural worlds. Similarly to other hyphenated people, the challenge for the academic in the mould of Serres is lies in "the hyphen itself"; in creating "the realm in between, where predetermined rules cannot fully apply." (Trinh 1991: 157) At the core of hyphenation is the paradox of constancy and transience; "one is born over and over again as hyphen rather than as fixed entity, thereby refusing to settle down to one (tubicolous) world or another." (Trinh 1991: 159) Having spent the greater part of his life in 'preparation', Serres remains in a "fluid state", "interested in everything". (Serres 1995: 27)

Deploying a methodology drawing on Serres' philosophy is a considerable challenge. Such a project must entail a process of traversal through disparate sources that brings into being a third space/place (Serres 1977: ; Bhabha 1994). Further, the work must eschew disciplinary approaches, relying on the skilful use of everyday language, and the artful creation of connection between points across temporal and disciplinary space.

Interdisciplinary approaches may prove valuable in examining any number of sites. They are particularly pertinent when the site in question involves the blending of heterogenous elements. In examining a number of technologies and demonstrating their attachment to socio-cultural and natural components, Mike Michael situates his work within "a collective effort at breaching the disciplines (very generally, the natural and social sciences) that serve to keep [nature, society and technology] distinct." (Michael 2000: 1) While Michael avoids a specific methodology – instead suggesting an almost 'a-methodological' hybrid style – his rhetoric is similar to Broderick, searching for ways of thinking about human and non-human components that can "fold into one another" (Michael 2000: 2). To do so, he employs the "emergent (although, inevitably disparate) vocabulary" (Michael 2000: 2) of science and technology studies, an instance of the 'transcoding' Broderick advocates.

To the existing lexicon of 'cyborgs' and 'hybrids', Michael adds 'co(a)gents' to describe the complex interlinked networks of culture, nature and technology that he studies. While this is an interesting

neologism, the present project will employ the term ‘assemblage’ to similar effect, as it better serves to be part of the “abstracted, generalist vocabulary” (Michael 2000: 12) that Michael advocates.

In work that straddles the socio-technological divide, form mirrors content. In both. “we are beginning to thing about flows, movements, arrangements, relations.” (Michael 2000: 1) Michael’s co(a)gents (and Deleuze’s assemblages) are heterogenous networks of connection – networks that are most illuminated through heterogenous methodologies of connection. These insights make it clear that an analysis of the self and digital mediating technologies must follow such a path. Further, it is clear that the focus of such a study should be the connection and flow between human and non-human components. The space of in-betweening generated by the hybrid assemblage that is self-technology. As we begin to explore this space, Serres remind us that in-between is fare from simple and straight-forward. “Between the hard sciences and the so-called human sciences the passage resembles a jagged shore, sprinkled with ice, and variable. … It’s more fractal than truly simple. Less a juncture than an adventure to be had. This is an area strangely void of explorers.” (Serres 1995: 70) This project aims to chart just such a journey of exploration. And on such a journey, both writer and reader are travellers. For “[n]o learning can avoid the voyage.” (Serres 1977: 8)

Approach

As we venture into this complex and chaotic space, leaving the shores of disciplinarily behind, this project will draw on a number of these interdisciplinary theorists. In chapter two, a review of existing literature will be conducted. Such a review must necessarily touch on a wide range of disciplines, but synthesis will not be attempted. Following Latour, the review of literature will retain a degree of disciplinary rigour within each section. Where transcoding is attempted across sections in the style of Broderick, this will be done using the flexible tools provided by a number of philosophers including Varela, Deleuze and Guattari.

These transcodings will be extended in chapter three where a model of the self is proposed. Despite this attempt at synthesis, a schism will remain between the physiological and discursive aspects of the self. Analysis of these two aspects has been conducted in an almost exclusively segregated fashion, making transcoding problematic.

Two pieces of research will then be conducted. Following the physiological/discursive schism, this research will be conducted within alternately scientific and humanist paradigms. Chapter four will describe a controlled psychological experiment exploring the extension of the physiological self during computer game play. This research will be structured within a scientific framework, and communicated within the scientific mode of discourse.

Chapter five will explore the impact of technology on our narration of the discursive self. Examining a number of literary texts written before and after the advent of digital mediating technologies, modes of self-narration will be compared. As differences are found, attempts will be made to trace those linguistic and structural differences back to the social impact of these technologies. This research will be situated within the discourse of literary criticism and cultural studies.

Having completed two distinct research processes, the final chapter will use these segregated findings as a point of departure in an attempt at synthesis in the style of Serres. The chapter will eschew the specialist vocabularies used in chapters four and five to draw connections between the

various investigative discourses. Traversing both the present research and the bodies of work presented in chapter two, this conclusion will work to generate new insight through the juxtaposition of knowledge without regard for disciplinary boundaries or linear chronology.

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