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My Double-Diaspora: Two Natures, Two Cultures and reposing the enduring image of C. P. Snow's "bridge"

Abstract:

This work responds to the theme of writing from the fringes by exploring the author's experience of being doubly-diasporic across STEM and HASS scholarship, and by relating this situation to what Bruno Latour considers "being modern" and to what Michel Foucault describes as the modern paradox. This article does three things. Firstly, this work presents a piece of scholarly writing in an academic style that rereads and rewrites C. P. Snow's Rede Lecture on science and humanities disciplines, which Snow infamously called "the two cultures". Secondly, this article presents a piece of creative writing in the form of autobiographical metafiction, which also rereads and rewrites C. P. Snow's 1959 Rede Lecture, but this time, by telling the author's own story of double-diaspora or of *two natures, two cultures*. And finally this article considers how its academic and creative works open onto one another to repose the question of being modern (as in poststructuralism and STS) with a view to telling the author's story and critique of being modern in such a way that these can be heard by STEM and HASS. Some implications of this work for metafiction and for creative writing as a mode of academic inquiry are discussed.

Biographical note:

Fiona Druitt, PhD is a Research Fellow in the Faculty of Education at The University of Melbourne. Dr Druitt's research opens questions from science and from the humanities and social sciences (HASS) or from the "modern" disciplines (Foucault and Latour) onto one another in order to repose modern paradoxes of history and disciplinarity; to investigate questions of science-society, nature-culture and human-technology translations; and to develop novel modes of STEM-HASS interdisciplinarity.

Keywords:

Two Cultures, STEM-HASS interdisciplinarity, modern foundationalism, creative writing as a mode of inquiry, metafiction

Introduction

Bruno Latour wrote, “Nietzsche said that big problems are like cold baths; you have to get out as quickly as you got in” (1993, p. 12). But when it comes to the big problem of “being modern” and its particular ways of rupturing and reimagining history and disciplinarity, for me, “getting out” of this cold bath from either side (since the modern disciplines, in their current forms, and the stories that they tell about each other and about the past don’t quite come apart coherently) – or from both sides (since the modern disciplines, in their current forms, and the stories that they tell about each other and about the past don’t quite come together coherently) – is not one of the options. This situation leaves me “doubly-diasporic”. This work responds to the theme of writing from the fringes by exploring my experience of being doubly-diasporic across STEM and HASS scholarship, and by relating this situation to what Latour (1993) considers “being modern” and to what Foucault (1994) describes as the “modern paradox”. The rest of this introduction will define what I mean by the terms *being modern*, *doubly-diasporic*, *modern foundationalism*, and *modern disciplines* with their two different, but related, modes of being modern, “STEM” and “HASS”.

“We have never been modern”, writes Bruno Latour (1993). This, John Frow explains, is to say that:

the world has never conformed to the model of a universal rupture which, at a certain moment, would have divided historical time into two great blocs: on the one side the “hybridising” societies of the old world, where things and people were interrelated, where words had causal force, where practical knowledge was separate neither from power nor from cosmology; and on the other, the “purifying” societies of modernity, in which knowledge and power became quite separate domains, words describe the world rather than performing it, and material things are ontologically distinct from the people who make use of them. (1997, p. 1)

Knowing that “we have never been modern”, and that being modern is a problem that ruptures, reimagines and then fails to coherently recombine a whole series of modern binaries (such as nature and culture, technology and society, humans and non-humans, theory and practice, reading and writing, identity and difference, space and time, reality and perception ... and so on ...) is useful. It is this problem to which the fields of Latourian STS and Foucault’s poststructuralism respond, each in their own way, as well as the various HASS fields and “turns” that followed them. Latour (1993), Haraway (1988), Kirby (1997) and Foucault (1994) each describe why being modern is such a big problem for scholarship, for science, for technology and for society, and for their intersections in interdisciplinary scholarship.

Latour (1993) laments that being modern fails to translate science and society, and nature and culture, and to hold these categories together and apart coherently, which frustrates scholarly and practical attempts to address questions that entangle science and society, such as climate change. Haraway (1988) and Kirby (1997) point to another context, feminist embodiment, in which being modern fails to translate science and society, nature and culture, modern language and embodiment, being and knowing and evidence and experience. And Foucault (1994) describes the modern paradox that ruptures and then fails to coherently recombine words and

things, language and life, and positivism and representationalism (which he calls “a truth” both “promised and reduced”); at the centre of this problem of (re)configuring “words and things”, Foucault locates another paradox, modern *Man* or humanism (1994, p. 344). Poststructuralism attempts to respond to the modern paradox, and to the gendered problem of humanism, by opening questions of history onto philosophy, and by pointing out that, not just what we know in history, but how we know history (in epistemology) changes nonlinearly, in and through time.

But knowing *that* we have never been modern isn’t enough. What we (modern scholars) don’t know nearly enough about is *how* we have never been modern, and how we *are still* modern. Indeed, Latour’s (1993) play on words in “we have never been modern” is the paradox that we are *still somehow* modern, in a way that we don’t completely understand. The enigmatic modern paradox described by Foucault (1994) in post-Kantian philosophy has a curious habit of turning up again and again, despite scholarly attempts to refigure it (including those by Foucault and Latour, and their followers, and the temporal or spatial, material or linguistic turns that follow them). Merely disavowing being modern does nothing to repose or to resolve this problem. Postmodernism too simply reproduces a hyper-version of the problem of being modern by refusing to critically question it (Frow, 1997). Foucault’s (1994) image of the face of *Man*, drawn in the sand at the edge of the sea is too paradoxical to be permanent, Foucault reasons, but that’s not the same as saying that being modern, and its symptoms, the gendered and humanist *Man*, will wash away all on its own if we (modern scholars – and we *are still* modern) complain about him enough.

This work is, in part, a *structural* analysis of the problem of being modern, which is not the same thing as a *structuralist* analysis (three letters make all the difference; the former consciously investigates the problem, the latter unconsciously repeats it). To *describe* the structure of the problem of being modern, as I do here, is not necessarily to repeat it or to stoke division. If you uncritically believe *that* then you *are* a structuralist, by definition, which is a symptom of the problem of being modern. Structuralism, like everything else, has never been modern, which means that at some point, if you poke at it critically or creatively enough, even the most canonical structuralist logic misbehaves and delightfully contradicts itself (Kirby, 1997; Frow, 1997). Structuralists, on the other hand, believe that structuralism behaves itself, which it doesn’t. And furthermore, contradictions offer up knowledge about structure, and in particular, not just *that*, but about *how* it has never been modern. Mathematicians use this tactic in proofs by contradiction (mathematical training has served me quite well in HASS). Unconsciously repeating a paradox by calling it names but otherwise leaving it to its own devices – and contradicting a paradox by *critically* describing and *consciously* performing it – are two entirely different things. This article adopts the latter approach by telling academic and creative stories about being modern and by opening them onto one another.

I have, for the most part, avoided using the term “modernity” and have instead adopted the present, progressive term being modern. I do this firstly to reference being and knowing (ontology and epistemology). And secondly, in keeping with Latour (1993), Frow (1997) and Foucault (1994), I consider being modern not as a period or age of historical time, nor as

belonging or not belonging to ethnicity, culture or geography in space, but rather, as *an operation* that does something particular (and paradoxical) to knowing and to being, and to history and to disciplinarity, and to time and to space, when they become “modern”. My work doesn’t so much retrace how this transition happened through time (as, for example, in Foucault (1994) and Shapin and Schaffer (1986)), but rather, it retraces how it (being modern) shows up in history and disciplinarity today, and yet, how it has never *really* happened quite like that (how we are still modern, and how we have never been modern) across space and time, history and disciplinarity, language and life, and nature and culture (to name only a few modern binaries in what is a much longer list). I think of being modern as much like an operator in mathematics, that is, as an operation or process that acts on something to transform it in a particular way.

Latour (1993), Frow (1997) and Foucault (1994) study the operation of being modern as a *temporal* operation, while I study it as a *spatiotemporal* operation, which reposes the question of being modern. Latour describes the operation of being modern as having two parts, which he calls modern “purification” and “translation”. *Purification* ruptures (divides) modern binaries into separate ontological domains (entities of reality), such as nature and culture – and then *translation* attempts, but invariably fails, to translate (to get back across) these purified categories or domains again, producing ever more “incommensurable hybrids” or “hyphenations” or “mixtures” of binary categories that never quite came apart quite as neatly as in purification (1993, p. 10). “I now have a choice”, Latour figures: either “I defend the work of modern purification – and I myself serve as a purifier and a vigilant guardian of purification – or else I study both the work of [translation] and that of purification – but I then cease to be wholly modern” (1993, p. 46). Indeed. This makes sense. You can’t put back two categories that never came apart like that; we must study both work of translation and purification (by double-crossing foundationally different, but related, stories that appear across history and disciplinarity, I am essentially doing that).

However, I argue that Latour, Frow and Foucault fail to adequately repose the problem of being modern because they pose and respond to it as a temporal or historical problem instead of a spatiotemporal problem double-crossing modern history and disciplinarity.[1] For example, Frow writes that:

Latour’s logic is that the institution of modernity (and its necessary successor, postmodernity) is the effect of a process of back-projection in which the present constructs itself as a unity of all present time by distinguishing itself from a stable and archaic past which has a singular form. The primary work of the concept of modernity is to cut across the knot of heterogeneous strands of time in such a way as to produce the stabilities and unities of a “now” and a “then”. What is at stake is not so much the reality of the “then”, as the establishment of a division within the present which is at the same time a geopolitical division. (1997, p.1)

Frow notes further that “it is perfectly valid to talk about the ways in which many contemporary societies differ from many other societies past and present”, but that:

such changes do not consolidate into the vast binary opposition through which modernity is defined as an essential tranche of historical time. “Archaic” societies can then be seen to be no less complex and no less informed by highly abstract systems, “modern” societies to be no less informed by “magical” and cosmological modes of thinking, their knowledges no less structured by desire. (1997, p. 3)

But this temporal dimension of the problem of being modern is not the whole problem. To paraphrase Frow as quoted above, the primary work of the problem of being modern is also to cut across the “strands” of space in such a way as to produce the stabilities and unities of a “here” and a “there”.[2] For me, the “here” and “there” in question are what I call the “modern disciplines”, STEM and HASS. Note that disciplinarity isn’t the only way to know and to be in modern imaginings of space in the present time (nor are particular fields of history in time). One could study other ways of being in and knowing space and time, which is still modern, and which has never been modern in the present (albeit perhaps in different ways) by repeating this kind of double-crossing experiment.[3]

Just as being modern ruptures, reimagines and attempts to recombine time and history across a reimagining of time, as ancient and modern history (Frow, 1997; Latour, 1993), being modern also ruptures, reimagines and attempts to recombine space and disciplinarity across a reimagining of space, as STEM and HASS disciplines. STEM and HASS disciplines don’t just study nature and culture, and time and space *separately* (as was the case in Classical disciplinarity); being modern, they now conceive of these very terms of their questions, nature and culture, and space and time *differently*.

One of the many consequences of being modern is that I am “doubly-diasporic” across modern disciplinarity. Being *doubly-diasporic* involves performing the two modes of being modern (here, of modern disciplinarity) simultaneously, which also means that I can no longer *entirely* believe in either or both of these modes of disciplinarity (which tells me something about how I have never been modern). I mean the term *diaspora* as it is usually defined in the humanities and social sciences, as in the cultural diaspora, although I want to argue that diaspora goes both ways. That is, by adding the prefix “double”, I want to point out that my diaspora is as much about nature as it is about culture. And furthermore, diaspora is *really* always double-diaspora across the journey away from home and back again (these two translation problems of getting from *here* to *there*, and from *there* to *here* are related, but they are not *the same* problem of translation). Diasporic longing always already has *two homes* across space.

Diaspora is a longing for the home in modernity across space and time, and across modern imaginings of space and time and their paradoxes. The “home” in modernity is no longer quite how I traditionally imagined it (transgression doesn’t quite work all on its own either). Tradition and transgression, to stay still and to move, never came apart as neatly as being modern assumes. To be doubly-diasporic is to notice that being modern produces two versions of diasporic longing and belonging, two versions of the “home” and the journey away from home, across *here* and *there*, across space. Each of these homes or places, *here* and *there* – for me, STEM and HASS – each tell their own stories of time and of their shared history. Each of

these homes or places tell stories about themselves and about one another. Being doubly-diasporic is to observe that, although these stories turn up as entangled (in and through translation), but also as ruptured (in and through purification), none of the stories of being modern that I have, stories telling and told across time and space, across tradition and transgression, and across history and disciplinarity, come together or apart coherently. Being doubly-diasporic is at once a complication and a clue. I find it equally exciting and frustrating. Being doubly-diasporic means that I can't quite *tell* my own story of being in and knowing modern disciplinarity in STEM and HASS. But being doubly-diasporic also means that I can't *not see* that opening these supposedly disparate (although currently incompatible) stories onto one another *is telling*. *We have never been modern* is to say that the stories that we (modern scholars) tell across and about time and space have never *quite* come together or apart like that (through modern purification and translation).

The remaining definitions given here concern the modern disciplines. Disciplines (or fields) are "modern" if they perform the operation of being modern, which I have just described above, that spatiotemporally ruptures, reimagines and then attempts to recombine history and disciplinarity. I argue that there are two different, but related ways of being modern (two *modes* of modern disciplines), STEM and HASS. I argue that these two modes of modern disciplinarity, STEM and HASS (as with the two modern temporal modes of history, ancient and modern) don't just study nature and culture separately, across a division of labour. I'm less concerned with what STEM and HASS study than with how they study. My argument is that the problem of being modern is more foundational than that, and that STEM and HASS conceptualise nature and culture *differently*. I also argue that it is what I call *modern foundationalism* that demarcates STEM and HASS disciplines from one another (and which is not found in classical disciplinarity).

C. P. Snow's Bridge: From crossing to double-crossing, from dualism to chiasm

"There are steps to be taken which aren't outside the powers of reflective people ... isn't it time we began?", the writer and physicist C. P. Snow asked at the end of his 1959 Rede Lecture, which he concluded by warning, "we have very little time. So little that I dare not guess at it" (2002, p. 51). Snow gave this urgent warning more than sixty years ago. It was this now infamous public lecture at Cambridge that popularised Snow's phrase *the two cultures*, by which Snow meant "science" and the "humanities". Snow's Rede Lecture made use of the tropes *close the gap* and *cross the bridge*, two popular but imprecise terms that can readily be found in scholarly literature today.

According to Snow, in an article he wrote a few years before giving the Rede Lecture, the problem inspiring such urgency was that "the separation between the two cultures has been getting deeper under our eyes; there is now precious little communication between them, little but different kinds of incomprehension and dislike" (1956, p. 413). "All the arrows point the same way", he lamented, adding that "closing the gap between our cultures is a necessity in the most abstract intellectual sense, as well as in the most practical. When those two senses have grown apart, then no society is going to be able to think with wisdom" (1956, p. 413).

But what defines Snow's "two cultures", and how do they double and divide scholarship and our society? Was this ever true, and is it still relevant today? If the "two cultures" that Snow describes indeed do such disparate work, then does it matter if they don't talk to one another? What is this *gap* between science and humanities (HASS) scholarship that Snow identifies, and how are science and society, nature and culture, and humans and non-humans held together and apart across it? Who is this *we*, this *us*, this *our*, at which Snow's critique takes aim? Does, and if so, how does, Snow's "two cultures" problem affect our "wisdom"? And whose wisdom is this anyway? How can we recognise where wisdom is and yet, at the same time, ask what wisdom is, if it is *this* that has been divided across the two cultures? What does Snow mean by *closing the gap* between the two cultures? Isn't it time that we begin *what*, exactly?

Snow didn't quite say. Or, at least, that's what the usual commentary on Snow claims. Instead of answering these questions (or even explicitly posing them), Snow's Rede Lecture left its audience with a lingering suspicion about the controversy, even acrimony, that followed it. Snow's lecture appears to have "stepped on a nerve", the kind of nerve that fires off a knee-jerk reaction. Stefan Collini (2009) describes what he calls a "bust up" and a "blistering row" between Snow and the literary critic, FR Leavis (see Leavis, 2013). Many commentators misread Snow as personally or logically believing in, or enshrining, the fundamental separation between the two cultures, rather than as expressing incredulity and a proof by contradiction that the two cultures continue to believe in this themselves. For example, Lee and Wallerstein write:

Snow felt that such a lack of mutual understanding among scholars was dangerous and a social loss, and his lectures were an attempt to bridge the gap by explaining each of the two cultures to the other. Snow was of course certain that there did exist two cultures and they were quite different from one another, and that in a sense they ought to be different. For Snow, the fact that there were two cultures represented an intellectual division of labour that was intelligible and justifiable. (2004, p. 2)

Reflecting on the Rede Lecture's reception, Snow addresses this misreading, explaining that the lecture:

was intended as a description of, or a very crude approximation to, our existing state of affairs. That it was a state of affairs I passionately disliked I thought I made fairly clear. Curiously enough, some commentators have assumed that I approved of it. (2002, p. 61)

There is an obvious danger in asking questions considered to be out of bounds for the two cultures. Shapin and Shaffer warn that "the member [of a modern discipline] who poses awkward questions about 'what everybody knows' ... runs the real risk of being dealt with as a troublemaker or an idiot" (1985, p. 6). "Like an incompetent playwright", Snow observes, I always get "a laugh in the wrong place" (Snow 2002, p. 51).

Like Snow, I get (elicit and understand) this laugh too. Where this laugh occurs is predictable enough. It is elicited in HASS audiences by asking questions about STEM's version of modern foundationalism or about the questions that the STEM leaves out of the question, which *obviously* cannot be out of the question for HASS. This laugh is elicited in STEM audiences by asking questions about HASS's version of modern foundationalism or about the questions that the HASS leaves out of the question, which *obviously* cannot be out of the question for STEM. However, asking either of the modern disciplines about *their own* version of modern foundationalism doesn't produce a laugh. In fact, it rarely produces any sound at all. These "two rude questions" draw a blank. One of two things usually happens in response to asking the modern disciplines about their own version of modern foundationalism (which I am calling "rude questions"). Either you are accused of being rude, or the audience will simply stare back at you silently and blankly, as if they didn't hear you. This is what Snow calls "tone-deafness".

Snow's *two rude questions* (questions that drop out of the question) are deeply ironic if you consider them both simultaneously. Snow delivers his first rude question in the Rede Lecture as he recounts the following story:

a good many times I have been present at gatherings of people who, by the standards of the traditional [literary] culture, are thought to be highly educated and who have with considerable gusto been expressing their incredulity at the illiteracy of scientists. Once or twice I have been provoked and have asked the company how many of them could describe the Second Law of Thermodynamics. The response was cold: it was also negative. Yet, I was asking something which is about the scientific equivalent of: Have you read a work of Shakespeare's? ... I now believe that if I had asked an even simpler question – such as, what do you mean by mass or acceleration, which is the scientific equivalent of saying, can you read? – not more than one in ten of the highly educated would have felt that I was speaking the same language. So the edifice of modern physics goes up, and the majority of the cleverest people in the ... world have about as much insight into it as their Neolithic ancestors would have had. (2002, p.14–15)

But this "rude" question that is aimed at the humanities (HASS) doesn't turn up alone. Snow also has one for science. Snow explains that, between the war years and the Rede Lecture, he had interviewed about a quarter of England's professional scientists to find out "a certain amount of what they read and thought about" (2002, p. 11–12). He confesses that "even I, who am fond of them and respect them, was a bit shaken", noting that he "hadn't quite expected that the scientists' links with [literary] culture should be so tenuous" (2002, p.12).

Snow writes that:

when you meet the younger rank-and-file of scientists, it often seems that they do not read at all. The prestige of the traditional culture is high enough for some of them to make a gallant shot at it ... When you ask them what they read – "As a married man", one says, "I prefer the garden". Another says: "I always like just to use my books as tools". (1956, p. 414)

It's "difficult to resist speculating what kind of tool a book would make", Snow wonders; "a sort of hammer? A crude digging instrument?" (1956, p. 414). According to Snow, it was possible but "very rare" to find a scientist who read literature (not textbooks or scientific papers, but the literary kind: the "bread and butter" of literary persons, "novels, history, poetry, plays ...") and that:

most of the rest, when one tried to probe for what books they read, would modestly confess, "Well, I've tried a bit of Dickens ...", rather as though Dickens were an extraordinarily esoteric, tangled and dubiously rewarding writer ... We thought that discovery, that Dickens had been transformed into the type-specimen of literary incomprehensibility, was one of the oddest results of the whole exercise. (2002, p. 13)

Those scientists, Snow tells us, would approach Dickens "in a grim and dutiful spirit as though tackling *Finnegan's Wake*, and feel a sense of achievement if they managed to read a book through" (1956, p. 414).

Snow's in-joke (for HASS) connects Joyce's *Finnegan's Wake*, a novel that presents literary scholars with a classification problem (the problem of classifying a body of words in "the canon") that is connected to the "type-specimen", the biological science equivalent of this problem of classifying life (embodying bodies through classification). Each of these problems concerns the question of how to hold together and keep apart identity and difference. *Finnegan's Wake*, is, of course, the literary world's "type-specimen of literary incomprehensibility", which highlights a legitimate literary problem of "reading the whole book through" (let alone classifying it in the literary canon). Joyce's novel unsettles the traditional linear structure of the novel, possibly even the novel itself, while dispensing with plot quite entirely. Not all literary scholars agree on whether *Finnegan's Wake* has discernible "characters" or, if it does, then who they are. The opening line of *Finnegan's Wake* is already an incomplete sentence fragment that only seems to follow from the fragment that its closing line delivers, circling that very question of finishing or "getting through" it. Not only does *Finnegan's Wake* use what is often described as idiosyncratic, experimental writing, it either enjoys or is marginalised by its reputation as being the most difficult book ever written in English. Joyce's work does more than simply refuse classification; it challenges the system of literary classification.

Snow observes that the modes of modern disciplinarity are marked by a canonical erasure that is as particular as a type-specimen: STEM and HASS each consider it "a major intellectual virtue to know what *not* to think about" (1956, p. 413; emphasis added). This leads Snow to lament that:

there seems then to be no place where the two cultures meet. I am not going to waste time saying that this is a pity. It is much worse than that ... at the heart of thought and creation we are letting some of our best chances go by default. (2002, p. 16)

But does it really matter if HASS scholars can mathematically describe "mass" or "acceleration" or "entropy" or any other of thousands of scientific concepts across the various

fields of STEM? Is *specialisation* the problem with modern disciplinarity? Only scientists within certain scientific fields will understand the details of specialised scientific concepts. No scientist understands all of science, and if they did, this wouldn't address the problem of purification that divides and multiplies the two cultures. Many scientists outside the field of physics might have trouble distinguishing speed from acceleration or mass from weight. But this doesn't make them scientifically "illiterate" (this shifting concept of what literacy is and how it reads and writes words and things across fields and disciplines is also true of HASS).

What is of interest here isn't that scientists have never read *Finnegan's Wake* or the rest of Dickens, or that humanities scholars have learned the phrase "entropy always increases" with very little statistical mechanics. No. What is of interest here is how STEM and HASS reimagine two different but related problems in translation, as Snow's in-joke about James Joyce's writing attempts to describe, but clearly failed to land. Ironically, Snow considers the phenomenon that produces his *failure to tell* or to show the story of the modern disciplines to the modern disciplines. Here Snow observes that the two cultures see two "curious[ly] distorted image[s] of one another" (2002, p. 14).

Vicki Kirby (1997) also notices part of what Snow calls "tone-deafness" (more specifically, she points to HASS's version of tone-deafness. Kirby gives this phenomenon an equally rude name, calling it the *dumb question*, meaning a question that isn't articulated or articulate: a question that suspiciously goes missing in action. Kirby describes HASS's version of this question for HASS scholars in relation to the question of embodying the bodies of things. I call these questions that drop out of the question (as in "tone-deafness" and the "dumb-question") "modern foundationalism". Modern foundationalism also explains Snow's (and my) observation that the modern disciplines see two "curious[ly] distorted image[s] of one another"; why STEM and HASS can see the other's version of the problem, but not their own (that's the question that drops out of the question); and why writing from a double-diasporic positionality, which is to say, across two selectively *tone-deaf* modern disciplines, is no easy task.

What could Snow have meant by "closing the gap" between science and the humanities (2002, p. 50)? A canonical illustration of C. P. Snow's "bridge across the two cultures" can be found in *Scientific American Magazine* (Krauss, 2009). This image of C. P. Snow's bridge, commemorating fifty years since Snow's Rede Lecture, depicts a caricature of Snow perched atop a single-span bridge, presiding over a translation across the two cultures, which are depicted by a microscope and Homer's head. But where are the two curiously distorted images in this enduring picture of C. P. Snow's bridge? If these images of modern disciplinarity were representational problems, and not foundational problems (meaning that they go all the way down into their natures and their realities) then these two distortions of perception could be transformed back into the single bridge, as in the enduring image of C. P. Snow's bridge (which is pictured as a dualism or a direct connection). But my argument is that the problem of being modern *does not take this dualistic form*; the two "curious[ly] distorted image[s] that STEM and HASS have] of one another" affect nature and reality, and must be factored into the bridge or into the problem of modern translation (which is also to study purification). Neither of the

two cultures ever *gets across* to the other; rather, they both end up as a “curious distorted image” of the other.

To put this another way, C. P. Snow’s bridge, or the question of translating the modern disciplines into and out of one another, takes the form of the *chiasm* “χ”, not the *dualism* “/”: it is a question of *double-crossing*, not of a single crossing or single span bridge.[4] A crossing considers the translation problem of getting directly from STEM to HASS or vice versa, whereas a double-crossing considers *two* translation problems that cross from STEM and HASS to their two curiously distorted images of one another, and that present two different (but not unrelated) modern translation problems that open onto one another nonlinearly.

Snow’s (2002) trope of “the two cultures” is therefore lacking. The problem of being modern is not merely a *cultural* problem; it is as much a problem of conceptualising what nature is and does, as it is of conceptualising what culture is and does. It is also a question of perception as much as it is of reality (realism is modern and has never been modern). It is for this reason that I have included the phrase, *two natures, two cultures*, in the title of this article. Like Snow, I am in no way arguing that there are *really* two natures and two cultures, and two perceptions and realities (or that these categories are or should be distinct ontological entities), but that being modern produces two natures and two cultures, two perceptions and realities that produce modern paradoxes. It’s not the number or even the form of these categories that concern me; it’s that the modern paradox keeps on turning up again in STEM and HASS scholarship, and in technology and society. Sixty years on from Snow’s Rede Lecture, I think I can safely say that there is currently no shortage of pressing global concerns that entangle societal and scientific questions. These concerns demand less paradoxical, less modern, or novel modes of STEM-HASS interdisciplinarity. *Isn’t it time that we began?*

Seeing the gaze and embodying the body: On being doubly diasporic

Now that I’ve told you how I’ve reframed this problem of being modern, I want to tell you how it framed me.

My Dad does things with things. Dad’s way of expressing himself is in and through thinking and embodying things. He gives bodies to things. He gives things to bodies. He makes things do things. He’s a magician with things, although certain magics are not always appropriate, especially when these things have anything to do with me. He didn’t seem to think this, but Bill Brown (1998) was right when he said that things always seem to have a little bit of us left over in them. In Dad’s universe of things, things are strangely detached from human influence and desire, and yet, they are almost never fit for purpose and are suspiciously needy. Dad’s things tend to weirdly depend upon or get in the way of the people who would trip over or make use of them. Things speak to Dad. They are (I would later read), as Foucault once poetically put it, “the prose of the world” (1994, p. 47). But for Dad, unlike the Renaissance thinkers to whom Foucault refers, things are no longer storied. The bodies of things are histories. Things tell stories (the garage door would often squeal on me), but Dad’s things are not embodied in and through stories, like the history of things Foucault speaks about. My Dad’s

things are articulate to us, but not articulated by us. Dad reads things like Braille (these are facts, which reflect reality). The stories told by people, on the other hand, are far more suspicious and aren't to be taken seriously (those are fiction, which reflect perception).

For Dad, humans must serve and create and maintain things, and not the other way around. According to Dad, the world is a thing, a body, embodied, a machine, a materiality, an embodying of things, an endless regenerative line of questioning, a giant, palpable experiment that re-reads and re-writes itself in the shape of a question mark. There is an asymmetry here. Humans are not the point of this question. You're not even part of it. Humans, in Dad's universe of things, have been relegated to a strange hyper- and yet non-positionality of simply *not disturbing* things. The only acceptable purpose of people, according to Dad, is to keep this ever-reconfigurable contraption well-oiled. Rust is metal cancer, unless it is doing the work of a sacrificial anode. Dad never wonders whether or not *you* happen to want to have a conversation about the antibiotic properties of beehives or the lubrication of ball bearings or the shear forces on a screw thread, because choices such as these are a question of the needs of things, rather than of the desires of humans and should never be left up to humans, as far as Dad is concerned. Things can and do whatever they like, but humans cannot. Humans must work around things, without getting too close, without getting any of their confounding bias on things.

Dad expresses creativity in and through things. These creations and contraptions are all over the house. They are the house. Our house had irrigation systems, trapdoors, rope and pulley systems, and vegetables that grew in pipes. Dad put a sign on the bathroom sink that says "SOFT WASHERS" in block capitals. It's still there. Humans never learn. Dad is always afraid of people coming in between him and his things (the washers) inside the taps, which, to my mind, is a strange thing to be afraid of. A friend once confessed to washing her hands in the bath in our house. When I had stopped laughing at this admission, I had to attempt to explain that, in Dad's universe of things, all of the taps and their internal mechanisms in the bathroom, in the house and in the world were on equal footing. The sign was meant to, but tended to fail to convey, that these things were ranked just slightly higher than people. Dad's signs only served to confuse people, whereas he was trying to unconfuse them. Dad would rather offend the people who use taps than over-tighten the washers. The sign made very little sense to anyone except to its author, which struck me as being deeply ironic. This often happened. Dad's things often failed for problems of perception that turned up to him as problems of embodiment. (It was the other way around with Mum, her thoughts often failed for problems of embodiment that turned up to her as problems of perception, although I couldn't help but see both. But I'll tell you that story later. One of the problems with having two stories that don't add up or that subtract out is that I'm constantly interrupting myself.) Of all things, I tried to explain to Dad that washers are very cheap to replace. But Dad was unmoved. He couldn't appear to handle the idea that those thin, slithers of shiny metal would have to bend too much on account of people, irrespective of how much they cost (money was a human abstraction). But for me, things are not the *Other* of humans.

Dad builds things, not just for humans, but for all manner of other creatures who had also not asked for them. Dad's backyard contraptions speak to the possums that live in the garden shed, to the bees that moved into the boxes that he constructed for the possums. Dad also made Socks, our dog, a solar-powered paw mat that was meant to open the door to his kennel. But Socks did not care for kennel doors powered by renewable energy. He had other doors on his mind. He abandoned the kennel and spent most of his time standing in a pot plant with his wet black nose pressed up against the back window, steaming up the glass. Socks thought Dad was a strange human.

One day Dad brought home a green microscope, the same pastel green colour as the bath, from CSIRO, Australia's peak organisation for science and industrial research. We took this pastel green thing outside into the backyard. This was good timing for Dad, because Mum had just caught him fibre-glassing something inside the house again and she was mad at him. My siblings and I scoured the backyard for questions in the shape of bodies, bodies in the shape of questions, or just all manner of things to slice, squish or spread onto the microscope's thin glass slides. The tiniest slithers of life rushed up to meet us. People say that things get bigger under a microscope, but that's not really what happens; it's the gaze that is magnified.

Buoyed by the success of the microscope, Dad also branched out into making what can only be described as specimen rings. From our perspective, this venture was less successful. He made us "rings" out of metal and shellac. The metal, which was salvaged copper wire, was the ring part. The shellac, which was a bit yellow because it was old, captured the jewel, and by jewel, I mean dead Christmas beetles, European wasps or flies. I remember them vividly. They were portable, petrified specimens. You could examine the hairs on the entrapped creatures' legs, their segmented abdomens, their delicate wings, their petrified, bulging eyes that stared straight ahead. Sticking them to a glass microscope slide would have achieved much the same thing, but Dad seemed to think we would want to *wear* the rings. But I was in no way interested in repurposing salvaged hardware with dead insects stuck inside it for aesthetic reasons. These particular things were fascinations, not decorations. I tried to explain this to Dad, but he didn't seem to understand the difference. There was simply no room in Dad's universe of bug rings for the question of aesthetics. Dad's things reflect this. They're always painted orange or made out of marine ply.

But my childhood wasn't only a question of nature and things, bath-green microscopes and ugly bugs stuck on rings. There's another side to this story that doesn't quite add up or subtract out. The best way to describe just how incompatible are the two sides of my extended family, Dad's family and Mum's family, is to consider what they do, or don't do, with books, the literary kind – or to be generous here, even just the kind where you plan noticing that these things have words on the inside. Legend has it that one of our relatives on Dad's side of the family had once marched (I'm unsure if they *really* marched, but Mum had used the word) into a book shop and had ordered *a metre of books* to fill a shelf. Now, to my Mum's family, and probably anyone who works in a book shop, the measure of books is not "the metre". Books can explore the idea of space, but they are not just things that physically *take it up*.

Pa, Mum's dad, spent as many waking moments of his life as was physically possible with his nose in a book, in the house, in the car (he never drove, but gave flippant directions while flipping pages and without looking up) and, as the story goes, for most of the war. Mum's family tell stories. Nan was famed as a very funny but equally unreliable narrator. Pa was a pay clerk in Papua New Guinea in the Second World War. When the Americans left, Pa spoke gleefully of the piles of books that were suddenly abandoned. I don't think Pa saw much action in the war, but he read his way through entire tents full of novels, and taught himself to speak French. Mum can fill the kitchen with thoughts on society, ethnicity, relationships and their cultural, artistic and literary expressions for as long as Dad can talk about refrigeration or left- and right-handed screw threads. I should also mention that they both talk at once.

Almost all the books overflowing from the shelves at our house belong to Mum. Dad thinks fiction is irrelevant since it merely depicts events that never happened. His tales of travelling to Scotland and Ireland are *all* about the gearbox in the hire car. Dad's sole contribution to the family bookshelf is two stuffed freshwater crocodiles with glass eyes and one nonfiction book about knots that he lends to everyone who doesn't want to read it.

Christmas with Mum's family is like a book club with ham. You give a novel, you get one, you read it, and then you swap. Then you call the person who gave it to you and discuss the characters, language or the plot. If you describe my Mum's side of the family as a Venn diagram (and clearly, they would not represent themselves in such a way), you would find that there were two members of this festive yearly gathering who were not in largest section, the overlap, in the bloodline *or* the canon, Dad and Graham. Every year, Dad and Graham buy each other tools, and everyone else goes on talking about literature.

The science wars were often played out in our house, especially at homework time. On more than one occasion while I was an undergraduate, Mum asked me if I was learning Greek, when I was really learning quantum mechanics. In the late 1980s and early 1990s, households only had one computer. My sister would want the computer to write stories, but my brother had taken the thing apart into its constituent components. They had taken sides. Why couldn't I do that? I'd taken both. It was too late, I'd seen too much. Our computer took binary logic to an unusual extreme: it was either processing words, or it had exploded into a debris field of circuit boards, transistors, capacitors, and diodes that scattered across the floor. My little brother would be bent over the electrical innards of the thing that used to be our computer, soldering one of the pieces. A little trail of acrid smoke twirled in the air above his head. Without looking up, as Mum yelled at him, he would protest that he was improving the thing.

For my sister, the computer was a tool for writing. She had no quarrel with the computer's materiality. For my brother it was a thing for his tools. For me, it was both. War was declared. My brother and sister would win some and lose some. I would win and lose in every single interaction. In the aftermath each time, the body of the computer would be embodied a little differently. It would suddenly have a temperature gauge or water cooling. My brother wasn't computing with words, but with things. He pushed its processing power to its physical limits, and then re-embodied the thing. Dad saw my brother's tinkering as a marvellous creation. Mum

saw it as a marvellous obstruction. And like all culture wars about nature, or nature wars about culture, in the end, Mum got really mad, everyone declared victory, but no side really won. The same old argument just kept on coming up again and again.

“Where’s π then?”, Mum asks. Dad rolls his eyes as he picks up a bread plate and puts it down in front of her as he rattles off the formula for circumference and area of a circle. The plate does its dynamical, mathematical dance as it precesses smoothly on the bench like a spinning top.

“*But that’s just an abstraction!*”, Mum blurts out, incredulous. I wonder if she’s annoyed about determinism.

As the plate’s rotation slows, precession gives way to the wobbling sway, and the occasional rocking or nod of nutation. I reflect on my recurring surprise that the plate’s unstable, drunken dance is performing classical Newtonian dynamics. My parents have stopped hearing each other at this point. Mum is too busy wondering how the mathematical concept of π can be real, while Dad is wondering how the physical properties of the plate can be entirely abstract or entirely random (there is, quite literally, no such thing as this in mathematics). I want to tell them that they are both right and both wrong, but about different thoughts, different things, but neither of them can hear this.

Metafiction has never been modern, and telling stories as a mode of scholarly inquiry

As I began to entangle the disciplinary and historical threads of my autobiography and my scholarly critique in earlier drafts of this work, across STEM and HASS, and across the present and the past, I began to think of being modern as *telling stories*: telling stories that are not entirely *true* in any universal sense, but are also not entirely *untrue* in a particular sense. “I’m telling you stories. Trust me” (Winterson, 1987, p. 13). Each of the stories that I knew from STEM and HASS was clearly nonfiction (at least, according to them), and yet, what was told and telling about them didn’t quite add up to or subtract out of their crossings. I was interested in how these stories of being modern could be told and how they could be telling given the problem of “tone-deafness” that I was experiencing.

The intrinsic goal driving my research project was to *tell* my story of being doubly-diasporic in such a way that my friends in HASS (and perhaps STEM too) could *hear it* instead of being “tone-deaf” to part of it that never quite came apart like that (cue my double-diaspora). Achieving this goal was as much a challenge of creative writing as it was of the academic disciplines that I was opening onto one another across history and disciplinarity. In this way, I reframed the problem of being modern in terms of disciplinarity as well as history (with a view to reframing the way that it had framed me, as doubly-diasporic). I just wanted to go home to STEM and to HASS. Going away, I was always coming home.

As my stories from HASS and STEM opened onto one another across their two curious distorted images of space and of one another, and of time and history, they began to read like

– I mean, collectively *they were*, they *turned up as* – metafiction. Metafiction, because it consciously performs the modern paradoxes of reading and writing, and reality and perception is the closest creative writing style that I could find to nonfiction and to academic writing (although perhaps here I am saying that it found me). Of course, no fiction is entirely made up, and likewise, that’s not what Latour (1993) meant [5] when he said the facts are “fabricated”. We frame and are framed. We are modern and have never been modern. Metafiction sees the gaze of the spectator. It doesn’t just think analytically or in theory, but reads words and things like braille, by touching them (Jeanette Winterson’s novels often performs this). Metafiction turns the modern gaze back upon the apparatus, shifting the boundary between the apparatus (writing) and the subject or the object of writing. And it’s not just the narrator (me) or her perception that is unreliable. Metafiction reveals a problem of substance (of nature) as much as it does of style, a question of life as much as it does of language. The narrator isn’t so much unreliable as doubly-diasporic (wrong and right, but about two different thought and things, two natures and cultures). Metafiction consciously performs how writing is still modern across the binaries of language and life, reading and writing, reality and perception, and so on (translation), while at the same time it refuses to *entirely* believe that these categories ever came apart so neatly (purification).

Double-crossing my stories of STEM and HASS – the two “curious distorted” stories that they tell about one another, about space and disciplinarity, and the two tales that they each tell about time and history – enables me to ask how these stories resonate, contradict and, at times, unravel or erase one another (I’m not going to lie; this is messy). If you look across them, in translation, it’s not too difficult to see that these two stories “laugh in the wrong place” or, at certain times, in certain places, questions inexplicably drop out of the question. But, by opening these two modern stories one another, I am able to reiteratively study not just how to put these ruptured stories back together, but how they never quite came apart quite like that (this is to study modern purification and translation, as Latour insists). Each of the historical and disciplinary stories that I tell, and that tell me, and that tell me about being modern, still perform modern purification; but when I open these stories onto one another – so that they are, not just divided and nonfiction, but doubled as metafiction – then I can no longer *not see* the work of modern purification (modern foundationalism) and I realise that I never could have possibly believed in this to begin with. Neither of the foundational questions erased (no, *not quite erased*, but unseen) by STEM and HASS can be out of the question when I find myself in two places at once. Then I cease to be wholly modern, as Latour (1993) said, and I can finally find my way home in interdisciplinarity.

Notes

[1] Barad (2007) also makes this point that the problem of being modern is spatiotemporal (and I don’t doubt that Foucault, Frow and Latour thought that too). Unlike Foucault and Latour, Barad also responds to this problem in a spatiotemporal way. However, Barad (2007) doesn’t quite repose the problem of being modern as a chiasm, which produces two natures and two histories of science.

[2] By “strands” here Frow (1997) is referring to Latour’s use of the metaphor of the Gordian Knot (cutting through a knotty puzzle of entanglement by chopping it in half, right through the middle) and to his figure of a potentially infinite list of modern binaries that the operation of being modern cuts

across, which he calls “the great divide” (p. 16).

[3] Here I am interested in how being modern ruptures, reimagines and recombines disciplinary space, but one could use a similar methodology, the double-crossing”, to consider other ways of being and knowing space that might be Indigenous, cultural, social, ethnic or geopolitical (and so on). Similarly, history isn’t the only way to know and be in time (for example, the field of futures studies considers temporality across the present and the future). The only thing universal about these double-crossings is that none of them have ever been modern, perhaps in particular ways.

[4] Merleau-Ponty (1968) adopts the figure of the “ χ ” or the double-crossing (he calls this the “intertwining”) in his philosophy of spectatorship.

[5] It would be interesting to ask how the double-crossing of academic writing and metafiction in this article relates to the style of fictocriticism. This question is beyond the scope of this article.

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