

**What is, and what might be, learned from images
shared during Twitter conversations among
professionals?**

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Thesis submitted for the degree of Doctor of Philosophy

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August 2016

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Declaration

I declare that I have composed this thesis myself and that it embodies the results of my own research. Where appropriate, I have acknowledged the nature and extent of work carried out in collaboration with others included in the thesis.

Anna N. Wilson

Acknowledgements

I owe thanks to many people for their help, support and interest while I undertook this research.

I am grateful to all those who participated in the interviews, generously giving me data and making me smile a lot.

I would also like to express my appreciation for the staff and students who contributed to the intellectual environment in which I carried this research. I am particularly grateful to my two supervisors, Tara and Valerie. Their intellectual input and moral support has been invaluable. I'm also grateful to Valerie for having involved me in the oPEN project.

Thanks to all those in the B rooms/C16 – particularly Bethan, Adrienne and Aileen – for creative conversations and camaraderie, and to Aileen additionally for proof-reading.

Thanks to Kate Goossens, Jen Merritt, Kevin Le, Ruth Mills and Gerlese Åkerlind for tolerating my sporadic communications and providing essential support; to Martin Topping for the plagues; and to John Smith, for his friendship over many years and through various precipitous decisions.

Finally, thanks to my family for managing to act as if they didn't think becoming a full time student again was totally weird (or at least no weirder than normal).

Abstract

This thesis explores the pedagogical potential of images shared during intra-professional conversations held on the social media platform, Twitter.

Twitter chats are loosely synchronous exchanges of tweets sharing a unique, identifying keyword or hashtag. They are increasingly being used among professionals to create professional networks in which practice-knowledge and opinion might be shared and where communal connections may be created. As such, they may serve as sites in which professional learning unfolds, both in relation to workplace practices and in relation to the development of new forms of professional practice around social media use. Because the exchanges and broadcasts on Twitter are, for the most part, public, and the conversations are ongoing, they also provide open, freely-accessible, and constantly renewing resources for use in pre-service learning contexts.

The research focused on two example chats, one held among midwives and the other among teachers. Inspired by the increasing use of images in new forms of digital communication, the research used images tweeted during the chats as starting points from which to explore flows of knowledge and affect. Data were generated from observations of the two Twitter chats over extended periods, together with interviews with practising professionals, student professionals and their educators in which images were used as elicitation devices. The research combined an approach to reading and “being with” data inspired by ideas drawn from the work of Deleuze (1994; Williams 2013) and Deleuze and Guattari (1988; Massumi 1992), with

approaches to reading images drawn from visual social semiotics (Kress and van Leeuwen 1996).

The findings suggest that Twitter chats such as those studied here can provide rich opportunities for professional learning. Practice knowledge can flow from one participant to many others, and flows of affect can be used to remoralize individuals and communities. Both chats seemed to serve as sites in which professionals could experience a positivity and affirmation that was not always available in the workplace.

However, the forces and intensities at play in these spaces influence both what is said and what is not said, creating new norms of online interaction that generally seemed to avoid negative comments or open disagreement.

Educators saw potential to use images such as those shared in the chats in a variety of ways. For example, images could be used as prompts for examination and critique of practices. The educators I interviewed also suggested that the images could be used to help student professionals develop their sensitivity to the forces and intensities that produce particular practices. Group interviews with student professionals suggested that the former happened spontaneously when students encountered and discussed such images, but that the latter might need deliberate facilitation or prompting.

The thesis concludes with some recommendations for: (i) educators considering using such images in pre-service professional learning; (ii) professional developers considering using Twitter chats; and (iii) policy-makers involved in drafting guidelines for professionals' use of social media.

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Chapter 1 – Into the water

*O plunge your hands in water,
Plunge them in up to the wrist;
Stare, stare in the basin
And wonder what you've missed.*

from 'As I Walked Out One Evening,' by W. H Auden

I came to this PhD because, for some years, I had been trailing my fingers along the surface of research in education. It seemed I could do this reasonably successfully: I published in “good” journals; I obtained grants from the Australian Office for Learning and Teaching. But I felt increasingly uncomfortable. After all, my professional background and learning was in nuclear physics. It had taken me a PhD and 15 years of research and teaching to develop the physics understandings I had, and I knew they were still developing. Although I had taught undergraduate physics for a decade, my exposure to theories of learning had been limited to the form of constructivism that is hegemonic in professional development in (Australian) universities. In what way did that qualify me to undertake research in higher education?

The nature of my education research heightened my sense that there was much more below the surface. Initially, I explored undergraduate students' development as (professional) scientists, subsequently broadening out to explore developing professionalism in other disciplines. I watched novices grope towards expertise, devoting time, energy and effort to acquire relevant bodies of knowledge and skill. What I saw intrigued me, but I began to feel that without a more thorough grounding

in the sociology of education and theories of learning, I was merely brushing the surface of the water with my fingertips.

Eventually, I had to do something about it. I felt I owed it to the discipline of education, to my data, and to the people whose lives generated the data, to get properly educated. I wanted to plunge my hands right into the water.

The product of that plunge is this thesis. I resigned from my job as an educational development consultant at the University of Oxford when I applied for, and obtained, a Higher Education Academy doctoral fellowship to study with Professor Tara Fenwick and Dr Valerie Drew. This fellowship connected with my prior interest in professionalism, but steered me into research framed by Tara's own studies around limited and even repressive understandings of student professionals' social media use.

When I started this research, I imagined that I would build on my prior work exploring students' conceptions of professionalism and look specifically at their understandings of what it means to behave "professionally" on social media. However, my early readings on education for online professionalism (Cain 2008; Cain et al. 2009; Coffield and Joiner 2010; Dodsworth et al. 2013; Kjos and Ricci 2012; Klich-Heartt and Prion 2010; Ross 2012) started me on a different track. This was not the kind of research I wanted to do. It seemed to me that these studies generally approached social media as something to either shut down or colonize. Sites such as Twitter¹, Facebook² and

¹A popular micro-blogging site, <http://www.twitter.com>

² Perhaps the most widely-used social networking site (outside of China), <http://www.facebook.com>

Flickr³ were positioned either as places of significant risk, in which student professionals might do damage with or be damaged by their actions, or as places that could be co-opted for educational purposes by forcing students to tweet or create Facebook groups as part of their formal coursework. In either case, it appeared that educators and educational institutions were out to take control. For all the discourse about student-centred teaching and active, personalized learning (McLoughlin and Lee 2008; Rennie and Morrison 2013), social media use was either to be proscribed or prescribed. In so doing, these works were also advocating cutting off the vast majority of social media use that is not connected with/under the control of formal education.

At the same time, I was reading about both critical digital studies (Kroker and Kroker 2013; Lovink 2011; Manovich 2013) and sociomaterial approaches to educational research (Fenwick et al. 2015), both of which highlighted the importance of non-human actors. These readings suggested to me that any research into social media that ignored its uncontrolled, serendipitous, creative and emergent possibilities would inevitably fail to recognize its actual and potential impact.

As I spent time on various professional-related social media and social networking sites, I was increasingly struck by a frequent use of images, and particularly photographs. Sometimes images seemed to be part of the information being shared; sometimes they seemed to be decorative; sometimes they seemed to be there simply to get attention. Some images showed practising professionals in workplace or other professional contexts. Some showed clients or service users. Some were depictions of

³ A photo-sharing site, <http://www.flickr.com>

professional objects, equipment or practices. I began to wonder about the glimpses into professional life these images offered, and the impact they might have on student professionals, should they encounter them.

This led, finally, to the research question addressed in this thesis.

Research question

What might, and what do, student professionals learn from images shared during professional Twitter chats?

A focus on images seemed a good way of ensuring I kept to my intended sociomaterial stance. It also proved to be an effective way of focusing in on a subset of social media data. Subsequent choices of profession (midwifery and teaching) and specific social media arenas (Twitter “chats”) effectively meant that I was plunging my hands into a basin of water, not an entire ocean.

An important part of this immersion was the choice and development of a theoretical basis. As described in Chapter 2, despite an initial assumption that I would use Actor Network Theory (Fenwick and Edwards 2010), I found myself drawn towards ideas originating with Deleuze and Guattari (Deleuze and Guattari 1988; Deleuze 1994; Williams 2013). These seemed increasingly relevant as early findings during my research pointed to the importance of affect.

My readings of Deleuze’s work shaped the research in several ways, which in turn influenced the outcomes. In relation to how practising professionals use Twitter, a Deleuzian perspective suggested that desire was an important motivation for

participation. This perspective also led me to explore how different forces interact in the Twitter chats to produce emergent forms of professionalism related to participation; and how the meanings ascribed to particular Twitter actions remain contingent and unsettled. It also suggested that the ongoing chats can be viewed as (constantly renewing) resources for use in pre-service learning in higher education contexts. These findings are described in Chapters 5–8.

At the same time, adopting a Deleuzian approach resulted in the development of new research methods, particularly in relation to data visualization and the analysis of found images. These developments are described in Chapters 3 and 4. I have also extended some ways in which concepts drawn from Deleuze's work have previously been used in education research (de Freitas 2012; Zembylas 2007a), and use these to inform the analyses presented in Chapters 7 and 8 in particular.

The remainder of this chapter presents the context and rationale for the research. I describe first how I conceptualize professional learning, and then some motivations for engaging in research on the impact of social media on students' development of professionalism. I describe the research and regulatory contexts. I then go on to justify my focus on images, as opposed to text, shared on social media. I also provide an explanation for my decision to focus on Twitter chats, and describe prior educational research focusing on Twitter. Finally, I explain why I chose to focus on two professions, midwifery and teaching, and images shared by professionals participating in two Twitter chats.

1.1 Professional learning

This thesis is concerned with professional learning, both in formal, pre-service, higher-education-based contexts and informal, ongoing, social media contexts. However, the notion of professional learning is itself complex and multiply-defined. In this section, I explain my own conception of professional learning and thus what kinds of learning I set out to look for evidence of.

Professional learning, as distinct from purely academic learning, is characterized by an emphasis on the development of profession-specific practice knowledge; professional competence; and (shared) professional values. For a long time, professional education was dominated by the conception of professional learning put forward in the works of authors such as Schön (1983; 1987). This placed substantial emphasis on individual reflection on and in action. More recently, approaches to professional education have emphasised on the social dimension of learning, with conceptions such as Communities of Practice and Legitimate Peripheral Participation (Lave and Wenger 1991; Lave and Wenger 1999) resulting in an emphasis on near-peer learning and mentoring.

While acknowledging that material objects (particularly specialist tools and workplace environments) have an influence on professional learning and practice, these approaches foreground humans and tend to position tools and environments as secondary features that might perturb but not produce learning. However, other writers (e.g. Fenwick et al. 2012; Fenwick and Nerland 2014; Hager et al. 2012; Hopwood 2015; Knorr Cetina 1997; Knorr Cetina 2007; Mulcahy 2012) have begun to

develop theories of professional learning that are rooted in sociomaterial perspectives. It is this (multiple and still developing) body of work that informs the research described in this thesis.

One feature that the various sociomaterial approaches to professional learning have in common is a conceptualization of knowledge, practice and values as emergent, arising from and circulating within complex webs of interaction and relation: they 'understand human knowledge and learning to be embedded in *material action and inter-action*' (Fenwick et al. 2012, p. 6, original emphasis). In so doing, they de-centre not only the individual human, but also the individual's mind in their accounts of learning, acknowledging the importance of the material and embodied as well as the social.

Today's society places great emphasis on knowledge generation and the rapid growth and change in knowledge, particularly in the professions. Thus one key aspect of professional learning is the perceived need to continually learn in order to stay up-to-date. Within a sociomaterial perspective, rapid knowledge production leads to a 'wide range of knowledge resources ... a manifold of partly conflicting evidence which lives and circulates in complex networks' (Fenwick et al. 2012, p. 3). Social media present networked spaces in which such resources and evidence may indeed circulate, and one aim of this thesis was to explore these flows.

Finally, from a sociomaterial perspective, change, whether in knowledge, practices or systems, is understood as 'a series of complex negotiations at micro-levels setting in motion complex dynamics' (Fenwick et al. 2012, p. 7). In the context of social media,

change may relate to both the spread of new professional knowledge and practice, and the emergence of new norms of professional behaviour around social media use.

In adopting this kind of perspective on professional learning, I focus attention on the circulations and negotiations taking place when professionals use social media to interact with each other. I acknowledge and explore the effects of interactions between humans and digital platforms and objects, in an attempt to see where and how knowledge and affect circulate and learning unfolds. As I hope to show below, new norms of (online) professional behaviour can be usefully understood as emerging from complex individual negotiations around the affordances offered by particular social media platforms, and the balancing of proscriptions against particular actions and the desire to contribute to the circulation of knowledge and affect.

1.2 Social media and professionalism

It is important to understand why an improved understanding of the relationship between social media and professional learning is needed. Social media use has become an almost omnipresent part of modern society (Lovink 2011), including professional practice and learning. The Oxford English Dictionary (OED 2016) defines social media as:

Websites and applications that enable users to create and share content or to participate in social networking.

Such sites and applications are now infused into both the personal and the professional, the private and the public, through platforms such as Twitter, Facebook, Google+, and more. Although specific platforms and formats come and go as the latest

trend or next algorithmic or technological development provides a new attraction, the new channels for interaction, relation and communication that they provide seem to be here to stay. This has led some commentators to ascribe great importance to our ability to learn to use social media. For example, Rheingold suggests that the future of digital culture 'depends on how well we learn to use the media that have infiltrated, amplified, distracted, enriched and complicated our lives' (2012, p. 1).

Social media have been embraced by private individuals, celebrity figures, cultural and campaigning groups and commercial organizations (Kroker and Kroker 2013; Lovink 2011). Now, and increasingly, they are also being embraced by professionals and professional groups (Fenwick 2016). Google searches and searches within specific platforms point to individual professionals blogging about their practice and experience, or uploading videos and photos to content-sharing sites such as YouTube and Flickr. Similar searches also reveal informal professional networks and communities that come together on micro-blogging sites such as Twitter and social networking sites such as Facebook, LinkedIn and Google+. Some of these communities set up shared blogs, or "meet" live on Twitter. Formal professional networks, organizations and institutions also appear to be using social media for a range of reasons. These include the creation and display of a public face; reaching out to remote and time-poor members and clients; providing updates, public information and advice; crowd-sourcing; and providing forums for clients to interact with one another.

According to Fenwick (2016), however, there is 'only sketchy evidence of how practitioners in different professions are actually working with social media' (p. 667) in

the academic literature. Perhaps because of this lack of research attention to current established and experimental social media practices, the regulatory and academic discourse surrounding the use of social media by professionals is predominantly one of risk-avoidance (Fenwick 2016; Wylie 2014). The issue is usually positioned as one of professional ethics; emphasis is placed on safety, privacy, and identity management in the interest of maintaining public trust. Regulatory and accrediting bodies, particularly in public service professions in health, education and social care, have produced documents and guidelines that are both prescriptive and proscriptive, focusing on behaviours that will not be tolerated, often with the threat of deregistration. These guidelines are often heavily emphasised in programmes preparing students for professional practice, and indeed fears about students' inability to behave appropriately online (Greysen et al. 2010) have led some authors to suggest that "e-professionalism" is a new domain that must be taught independently in its own right (Cain et al. 2009; Greysen et al. 2010; John et al. 2012; Spector and Kappel 2012). There have even been suggestions that these skills are of paramount importance: for example, Megele (2015) claims that 'developing students' e-professionalism and blended communication abilities is foundational to their social competency and their personal and professional success' (p. 414).

This view seems to miss both an essential attribute of social media and an opportunity. Social media generate a rapidly changing environment, but regulatory bodies appear to be responding to and seeking to control existing practices, rather than shaping or creating new ones. Prescriptive guidelines, and academic studies emphasising the need to teach student professionals how to obey these, fail to recognize that

professionalism itself is evolving and developing alongside new social media practices. That is, they overlook the 'role digital media might play in emergent notions of professionalism' (Fenwick 2016, p. 665). Because the guidelines are based on the concerns of those that commission them (usually employers or institutions), there is no encouragement for practitioner or student professionals to determine how professionalism is changed by social media.

Prescriptive guidelines are also likely to be difficult to comply with. Today's pre-service professionals have never known a world without social media: relationships lived out partly or wholly online are normal to them. Requiring that they block selected channels of connectivity in their professional lives might suggest that their professional lives are less real, less full and less connected than their personal lives. Given that there is some evidence that student professionals in higher education are inadequately introduced to conceptions of professionalism generally (Wilson et al. 2013), a narrow focus on e-professionalism and e-skills, divorced from a broader critical consideration of what being a professional might mean and entail, seems misguided. Instead, we need 'a rethinking of professionalism that can embrace online practices' (Fenwick 2016, p. 667); that is, we need a reconceptualization that encourages practitioners, students and educators to work out what constitutes professionalism as regards to social media interactions and relationships, and that recognizes that such professionalism will be both evolving and multiple. The adoption of a sociomaterial perspective facilitates such a reconceptualization by implying that online practices and interactions are emergent, performed into existence through relational arrangements of humans and non-humans, including features of social media platforms and the images

that ultimately became a focus for this research. This conception of professionalism would not be limited to thinking about risk avoidance and the ethics of individual professionals:

We might even hope that our students learn how to engage with these sites critically – even creatively and experimentally – to open new practices of professionalism ... engaging them in far more broad critical thinking about social media than ‘risk avoidance.’ (Fenwick 2016, p. 665)

I hoped to contribute to the development of this more creative and critical professional engagement with social media through the research described in this thesis.

1.3 Research choices

As described above, my conceptualization of professional learning admits the importance of micro-level interactions and negotiations. Thus the research described in this thesis explored the nuances and details of particular instances of social media use. In the following, I explain how I selected these instances.

A focus on images

As outlined in the opening section of this chapter, this research used images shared on social media by professionals as a primary focus. In this section, I provide an explanation for this focus.

There is a dearth of research into the actual practices of professionals using social media (Fenwick 2016), and so the open nature of the questions that could be asked required some sort of boundaries to be set at the outset. Images provide an interesting focus because they are now ubiquitous in digital communications (van Dijck 2013).

Social media are accessed through screen-based devices such as mobile phones, tablets and computers. Because of this, they are highly visual media. Facebook and Twitter encourage users to upload and update profile pictures, and also to personalize their spaces or elaborate their messages with photos and other images. Images have become part of the way users define and even create themselves as parts of the online world (Kaplan and Haenlein 2010; Marwick and boyd 2011).

Not only are social media themselves accessed visually, but other technologies mean image creation is now open to everyone. A photo can easily be taken using a mobile phone. Other images (including other people's photos) are easily found using search tools such as Google Images. Software such as Microsoft Paint⁴, PowerPoint⁵, GIMP⁶, and Photoshop⁷ has long enabled users to create and edit images on computers. Now apps⁸ such as PixlrExpress⁹, Studio Design¹⁰ and Wordswag¹¹ extend visual content creation to mobile devices. The ease with which digital images can be created, modified and shared means that their proliferation on social media sites is not surprising.

When shared by professionals, photos and other practice-related images also open up a window onto the materialities of professional practice. For example, as will be shown in Chapters 3–5, images shared by teachers included pictures of teaching tools,

⁴ <http://windows.microsoft.com/en-gb/windows-vista/open-paint>

⁵ <https://products.office.com/en-gb/powerpoint>

⁶ <https://www.gimp.org/>

⁷ <http://www.adobe.com/uk/products/photoshop.html>

⁸ Programs or software suites downloaded to a (mobile) digital device.

⁹ <https://pixlr.com/express/>

¹⁰ <http://www.madewithstudio.com/>

¹¹ <http://wordswag.co/>

classrooms, paper, whiteboards, screens and displays. These images richly illustrate the role such material objects play in creating and forming the experience of teaching.

There is also plenty of evidence in the public domain to suggest to users that social media messages are more successful, or have higher impact, with pictures than without. The following examples, both occurring at the start of my PhD, were two of many that influenced my decision to focus on images.

First, early in 2014, the #nomakeupselfie campaign encouraged women to tweet selfies¹² without make-up and simultaneously donate to cancer charities (Deller and Tilton 2015; Herman 2014). This highly-successful mobilization of collective action raised £8M for Cancer Research UK in six days (Press Association 2014). A second, very different, example of the impact of image-sharing on social media came with the case of the young Russian soldier and prolific selfie-sharer, Alexander Sotkin. His posts to photo-sharing site Instagram contributed to global political tensions when geolocation information embedded in the images indicated that some had been taken in Ukrainian, rather than Russian, territory (Li 2014). This highlights how images posted to social media escape control.

These two episodes exemplify important aspects of how professional guidelines often position social media. The former illustrates how social media may be used to mobilize clients, service users or donors to engage in an activity that is beneficial to the organization. The latter illustrates the kind of risk discourse that is often mobilized to shut down professional use of social media. However, these examples also raise other,

¹² Photographs of the photographer taken using the camera of a mobile phone.

less obvious, issues which a more nuanced exploration of evolving professionalism might consider. For example, the #nomakeupselfie campaign raises questions about the positioning and representation of women in modern Western society (Ferreday 2014), and about the ethics of exploiting what might be seen as narcissism in the pursuit of charitable donations (Herman 2014). The episode with the Russian soldier highlights how in using such platforms and software, users are giving up privacy and giving away data they might not even know they have to give (Lapenta 2011; Manovich 2013).

Images thus provide both more detailed glimpses of practice than might be available through text-based social media exchanges alone, and foci for the development of more critical engagement with social media practices.

Choice of social media form

Another decision in narrowing down the research focus was the choice of social media form. For a comparative study, it was important that the platform and social media form was common. This ensured that the professional groups' experiences of interactions with the platform and the software underpinning it were shared. Research suggests that not only are younger people turning away from traditional forms of communication such as physical letters, they are also turning away from email and lengthy blogging in favour of micro-blogging, text messaging and other short-form, quick-fire broadcasts and exchanges (Kietzmann et al. 2011). Given that the pre-service professionals of today (and in the future) belong to this younger demographic, I felt it

was important to select a platform that facilitates such exchanges. I therefore decided to focus on Twitter, as the currently pre-eminent micro-blogging platform.

Twitter is increasingly being used as a platform through which to hold real-time conversations or *chats* among interest groups or communities (Megele 2014). Twitter chats are loosely synchronous exchanges coalescing around the use of an identifying keyword or *hashtag*. The hashtag is a string of characters preceded by the “#” symbol that functions to identify a tweet as part of a specific conversation. It is the glue that binds the tweeting and image-sharing of a large group of people together. It also works as a call to action, encouraging professionals who participate in such chats to broadcast their own tweets with the hashtag and so be part of the conversation.

The increase in the popularity of Twitter chats is particularly marked among professionals (Megele 2014). Chats are frequently used as intra-professional forums: that is, spaces in which practitioners from the same profession exchange ideas, practice and opinion. They thus form new spaces in which professional learning may unfold. Where these chats are informal and emergent, questions arise as to the ways in which conversational norms (and so new social media forms of professionalism) develop, and how these are understood or enacted by chat participants.

Although, as its popularity has increased and stabilised, Twitter has become the subject of a great deal of research attention, the sharing of images on Twitter remained under-researched until recently. Vis et al.'s (2013) work on the role of images in the transmission of both eyewitness reporting and rumour during the 2011 London Riots is a notable exception, and represents a recent interest in the use of images in public and

institutional responses to crisis events. However, images shared on Twitter within professional groups remain largely neglected by researchers.

The trend towards increasing image sharing seen across social media may be particularly strong on Twitter because of the platform's message length limit. The fact that users are allowed only 140 characters of text limits what can be said in a micro-blog; accompanying that text with an image significantly increases what the tweeter can "say" and what his/her followers can "read." Professional conversations are no exception to this, with images accompanying tweets with increasing frequency. As one of the participants in the research below said, *'pictures really do speak a thousand words'*; as another observed, images seem to be processed more immediately and somehow more intuitively than text: *'they're in your brain very quickly, and they stay in your brain a long time.'* They therefore offer a potentially rich and complementary alternative to analysis that focuses on the text of tweets, opening up new possibilities for investigating the learning that is likely to be unfolding in these exchanges.

Prior research on Twitter in educational contexts

Although the contribution Twitter may make to learning has been the object of some recent research attention, this research has largely neglected both tweeted images and Twitter conversations among professionals. To date, research on Twitter use in education has primarily focused on its use in formal class contexts (Forgie et al. 2013; Kassens-Noor 2012; Kurtz 2009; Seo 2012; Trueman and Miles 2011), with a great deal of interest in the use of Twitter to create and orchestrate learning communities or facilitate communication among large classes in higher education. As described in

section 1.2, other education-related research touching upon Twitter has focused on education for professionalism, including a perceived need to warn students of the dangers of unprofessional behaviour in online spaces (e.g. Cain et al. 2009; Greysen et al. 2010; Osborne and Connelly 2015).

Very recently, research attention has started to focus on the use of Twitter conversations in professional learning (Bingham and Conner 2015; Evans 2015; McCulloch et al. 2011; Sie et al. 2013). Bingham and Conner's (2015) work emerges from the field of organizational studies, and encourages organizations and professional development teams to exploit social media for professional learning. They present social media in an extremely positive light, asserting that 'we can be – we must be – learning from everything and everyone possible in order to see the world in new ways and face challenges never seen before' (p. xv) and suggesting that social media, and in particular Twitter, allow for this to happen. However, they position the "microsharing" that occurs through Twitter-based conversations as a useful supplement to structured learning, giving those being trained a way to share insights with and ask questions of other students without taking up an instructor's time. This vision of the potential role of Twitter conversations in professional learning thus continues to position social learning as subordinate to learning from a designated figure of authority.

McCulloch et al. (2011) report on teachers' use of social media for ongoing professional development. They include a short case study on the Twitter conversation #ukedchat, which they describe as 'fast and furious' (p. 16). The #ukedchat conversations are regular, topic-based and facilitated through the @ukedchat Twitter account. Although

these authors describe #ukedchat as ‘one of the finest examples of how educators have used social media for continued professional development’ (ibid.), they provide no evidence of impact on teachers’ practice or increased student attainment, simply asserting that ‘with such a diverse mix of people being involved, inevitably many useful resources, links and connections are made’ (ibid.). However, the conclusions they draw from their subsequent review of evidence for the positive impact of social media use on teaching practice suggest it needs to be relatively strongly structured and facilitated. For example, they recommend that ‘like-minded participants should be invited to take part and form a learning community ... the community should serve a clear, shared purpose ... leaders should be brought on board’ and participants should have ‘access to external, specialist support’ (ibid., pp. 25–26) – again suggesting a model of professional learning in which Twitter conversations are a supplement to more formal, directed training or collaborative projects.

In his study of two Twitter conversations held among professionals working in the education and learning sectors, Evans (2015) takes up a rather more nuanced approach. He adopts a sociomaterial perspective, viewing the conversations as assemblages of human and non-human components such as text, images, user-interfaces and software. He argues that roles such as facilitator cannot be identified with specific, designated individuals, and instead are better understood as effects of these assemblages. He suggests that ‘[t]he hashtag performs the facilitation functions of encouraging group communication, clarifying the content of discussion and organizing the structure of the group’ (Evans 2015, p. 34) and ‘@_user mentions ... encourage group communication and connecting the thoughts expressed between participants’ (ibid., p. 35). However,

Evans also highlights the key connecting role played by individuals. He describes some users as ‘key “networked” individuals’ (ibid.) who ‘facilitate the structural cohesion of the event community’ (ibid.). There is thus some tension in his findings between the techno-facilitation of fluid assemblages and the rather static conception of ‘individual’ users taking on key roles in ‘real’ networks.

The research in this thesis complements Evans’s work, adding a new focus on images. It explores the dynamic assemblages constituted by serial chats, and interviews with chat participants who form part of these assemblages, to identify forces that shape the flow of knowledge, practice, opinion and affect. The tracing of such forces calls for a sociomaterial approach, with a sensitivity to the role of non-human as well as human agents. In the current work, this is coupled with a sense of Twitter as offering a conversational space which is itself shaped and patterned by the various forces at play.

Choice of professions

The last choices made in terms of research focus were the professions to be studied, and the particular Twitter chats. The original proposal for this research (on the basis of which funding was obtained) was framed as a study of public service professions.

Two important additional initial considerations were simply existing activity and accessibility. There is little point studying a professional group whose members do not share images via social media, or one that only does so on highly-restricted sites that would make access and ethical issues over-complicated for both the proposed research and any future use of them as pedagogical resources. These considerations ruled out, for example, doctors and vets (whose activities tend to be confined to walled-garden

sites¹³ for registered practitioners) and the police and social workers (for apparent lack of a coherent informal community presence). The decision to focus on Twitter chats meant that the public nature of the exchanges was guaranteed.

An initial survey of Twitter chats suggested teachers, midwives and paramedics as possible groups. The final decision to focus on teachers and midwives alone was made on the following grounds:

- Both professions include highly active, informal, grass-roots groups that use regular Twitter chats to discuss professional experiences and exchange ideas about good practice.
- Both professions involve interactions with children and so might share some concerns about what photographic images can be publicly shared.
- Both professions have a strong service ethic.
- Both are female-dominated professions, so gender differences around social media use and online behaviour might be less likely to dominate over differences resulting from different professional cultures.
- Although similar in these respects and others, these two professions have profoundly different histories, status and culture.

In addition, both professions have well-developed guidelines about social media use of the type described in section 1.2. For midwives based in the UK, these are issued by the professional body, the Nursing and Midwifery Council (NMC 2015). For teachers based in the UK, the guidelines depend on location. For example, the advice of the UK

¹³ A walled-garden site is one that is not freely accessible or publicly visible, requiring registration and often proof of professional registration or qualifications.

government to schools in England is that they should develop their own guidelines, but that these should be based on those provided by the charity Kidscape (Kidscape 2014; nd). Teachers in Scotland are governed by the guidelines provided by the General Teaching Council for Scotland (GTCS 2011).

At present, these guidelines barely touch upon image-sharing, but where they do, they focus on warning professionals not to post images with inappropriate sexual content, or bar them from posting any professional-related images at all. For example, the NMC guidelines include the following:

Never post pictures of patients or service users, even if they ask you to do this. Our guidance on record keeping states clearly, "you should not take or keep photographs of any person, or their family, that are not clinically relevant" (NMC 2009b). If your mobile phone has a camera, you should not use it in the workplace. (NMC 2015, np)

They also explicitly instruct healthcare professionals not to distribute sexually explicit material.

The guidelines produced by Kidscape, where they relate to teachers' use of social media (Kidscape 2014), focus on identity protection, examples of behaviour that might bring schools into disrepute, and the kind of sanctions that should be brought to bear in such cases. The sharing of images on social media is only mentioned in the context of protecting children from exposure to pornography, sexual grooming, and bullying based on sexually-explicit images (Kidscape nd).

A slightly less prohibitive approach is evident in the GTCS (2011) guidelines, which advise teachers to:

- *Manage your privacy settings and keep them under review. These are particularly important in regard to photos, and remember that no privacy mechanism is 100% guaranteed;*
- *... ensure your settings prohibit others from tagging you in any photos or updates without your permission ...*
- *... be aware of and comply with your employer's rules and policy in regard to taking and sharing photos of children.*

However, these guidelines also remind teachers that their registration is at risk if they post sexually explicit pictures or possess, make or distribute indecent images of children.

The concerns underlying these guidelines have also led to substantial bodies of academic work around the teaching of online professionalism of the type described in section 1.2.

For example, one study of student health professionals concluded that:

It seems clear that progressing the professions through the use of social media means ensuring that everyone is aware of what to do and how to behave when using them ... We recommend that work by the respective professions at both an undergraduate and graduate level include a focus on the implications of social media use for policy and practice, to ensure that everyone is aware of when and how to engage in social media platforms, what to do and how to behave when creating and using social media. (Tuckett and Turner 2016, p. 203)

Similar concerns have been expressed in relation to teachers:

[S]ocial media use does not seem likely to abate any time soon and today's pre-service teachers will have to wrestle with the roles these technologies play in their future classrooms and schools. (Carpenter and Krutka 2015, p. 29)

New guidelines issued by the International Society for Technology in Education (ISTE 2007) specify that teachers have to 'model digital citizenship and responsibility' (Kumar and Vigil 2011, p. 144), leading to suggestions that student teachers should

create digital artefacts and learn how to behave on social networking sites so that they can model such behaviours in their future practice.

However, there are some within these professions who seek a re-appraisal of the type advocated by Fenwick (2016) and in this thesis. For example, Wylie (2014) argues that professional regulations for nursing and midwifery professionals have resulted in missed opportunities to revolutionize healthcare. She claims that, in the health professions, '[t]he usefulness of social media within one's professional life has been largely ignored' (p. 502), and describes the advice given by managers and academics as 'alarmist' (ibid.). Wylie's criticisms of the guidance given to midwives and student midwives is based on her perception that 'members of the profession who have a good knowledge of the concept of professionalism may have the least experience of social media' (ibid.). She describes how the NMC guidance 'not to befriend patients and service users online even after the patient is no longer in their care' (ibid., p. 503) is inconsistent with the traditional practices of midwifery, which include encouraging the development of close relationships with clients. She also praises Twitter chats among midwives such as the one studied in this work as opportunities to discuss current events.

Choice of Twitter chats

The final decision made about research focus was which particular chats to follow.

There are many to choose from, with teachers in particular seeming to embrace this social media form. In this thesis, I explore chats identified by the hashtags

#wemidwives and #pedagoofriday (henceforth referred to as WeMidwives and

PedagooFriday chats). The choice of these hashtags was based on existing levels of activity, participation rates and the fact they are deliberately positioned as forums for the sharing of knowledge, experiences and examples of good practice.

Both conversations have “grass roots” origins, having been started by practitioners with the explicit aim of sharing practice and experiences, and with implicit aims of creating supportive professional networks. Neither is associated with any commercial activity. Both rely on volunteers from within the practitioner/chat participant community to provide both promotion and facilitation. Both were initially UK-based, but have subsequently attracted participants based in other countries. While it is not possible to find out through observation how many Twitter users view Tweets from the conversations, some idea of their level of potential influence may be given by the number of followers that accounts representing the conversation facilitators have: 9,000 for the midwives’ facilitator account; 25,000 for the teachers’ facilitator account. Both are thus large enough to be potentially influential, but small enough to retain a communal feel, given the small fraction of Twitter users who actively and regularly tweet.¹⁴

The two conversations also have some significant differences. The midwives’ conversation is more tightly topic-based. Each chat session has a theme and might address, for example, professional dispositions such as compassion, professional issues such as morale, or professional practices such as birthing practices or the use of social

¹⁴According to C. Smith (2015), in 2013, 87% of accounts had either never tweeted or not sent a tweet in the last year and only 10% tweet monthly or more often, even though 46% of users indicated they look at Twitter at least once a day.

media among midwives. They approximate the Twitter conversation or “Tweetstorm” structure described by Evans (2015) and Sie et al. (2013), with one or more visible facilitators or topic leaders introducing the chat and asking initial questions or acting as sources of expertise for other chat participants. With the exception of the chat-reminders tweeted by facilitators, participants only rarely tweet with the relevant hashtag outside the designated chat time; the facilitators produce and tweet a word cloud¹⁵ of the chat as a wrap-up/summary activity; and transcripts of chats are available after the event on a dedicated website. A typical conversation might include around 50 tweeters, plus additional visibly active participants who favourite or retweet the posts of others but do not tweet directly within the conversation.

In contrast, the teachers’ conversation, although nominally time-limited, often extends beyond its official time slot with teachers tweeting with the conversation’s defining hashtag both before and after. Formal facilitation is minimal, effectively restricted to tweets reminding Twitter users to participate, frequent retweeting and occasional (positive) comments. These chats are themed, but the theme is the same each week. These chats do not follow the structures described by Evans (2015) and Sie et al. (2013); there is nothing resembling an introduction or context-setting act, and there is no summary or wrap-up at the end.

The two chats, therefore, have apparently similar functions but somewhat different degrees of structure and organization. This gave the opportunity to examine whether and how structure (or lack of it) impacted on the sharing of images.

¹⁵ A word cloud is an image composed of words used in a particular text or conversation, in which the size of each word indicates relative frequencies of use.

1.4 Summary and overview of thesis

The preceding sections provide background and context for my research, and give some justification for the decisions made in determining the research focus.

The rest of this thesis is organized as follows.

Chapter 2 describes the theoretical ideas underpinning both the research design and analyses.

Chapter 3 describes the research design and illustrates some of the methodological innovations developed in this work. It focuses on interactions between Twitter users and images during the two Twitter chats, and how these were used to identify participants for follow-up research. It also provides a description of what doing the interviews using software such as Skype was like, and an initial description of how I analysed these interviews.

Chapter 4 focuses on the images themselves. It puts forward a framework for analysing the impact of images on those viewing them.

Chapter 5 examines the responses in interviews of practicing professionals to a selection of images shared during the chats.

Chapters 6 and 7 attempt to draw out the ways in which online practices are informed by and themselves influence notions of online professionalism. They also explore how professional learning unfolds in the spaces constituted by the chats.

Chapter 8 explores the possibility of using images shared during the Twitter chats as pedagogical resources in higher education contexts.

Finally, Chapter 9 summarizes the findings and makes recommendations for educators of student professionals and those involved in writing professional guidelines around social media use. It also makes some suggestions for future research. It also, of course, serves as the formal closure of this thesis.

Chapter 2 – Difference and desire

As indicated in the previous chapter, my aim in this thesis was to understand the role played by images shared online in forming and reforming (student) professionals' notions of their profession. This required the development of an understanding of the ways in which the Twitter chats were co-constructed among images and Twitter users. I needed to develop sensitivities to patterns of posting and responding to images in the Twitter chats, and to patterns of repeated and varied image content. I also needed to develop an understanding of the images in themselves, as digital objects that depict arrangements of humans and non-humans in specific environments and that evoke/ elicit certain behaviours/ responses in those viewing them.

I wanted to 'challeng[e] humanist preoccupations with a single individual "using" the tool(s) of social media for certain pre-determined objectives' (Fenwick 2016, p. 670). To do this, I needed to explore 'the heterogeneous configurings and reconfigurings of human engagement with the affordances of social media software and the continually generated content' (ibid.). The study of complex relationships involving images, objects and humans may best be served by a sociomaterial sensibility, and an approach focused on images, and interactions involving images and humans, rather than on individual Twitter users or professionals. This chapter describes how I drew on my readings of and about the work of Deleuze (Deleuze and Guattari 1988; Deleuze 1994; Deleuze 2000; Massumi 1992; Munday 2014; Williams 2013) in order to both think about my research processes (the ways in which I generated and interacted with data) and to analyse those data.

I start by describing some of the ways in which Twitter and Twitter chats have previously been theorized, and explain why I rejected most of them. I found Bruns and Moe's (2013) description of Twitter as layered, interconnected communication spaces useful. However, it does not provide a language for describing professional learning that might unfold in the chats, or in interactions with images taken from the chats. To develop such a language, I turned to Deleuze. Because my reading of Deleuze is perhaps somewhat idiosyncratic, I give some explanation of what drew me into Deleuze's philosophy. I then describe the key concepts that I have used in developing my research methods and analysing the data they generated.

2.1 Theorizing Twitter

The nature of Twitter and the affordances for communication it provides affect its potential function as a site for professional learning, and so it is important to understand what Twitter is and how it functions as a communicative space. Twitter is an evolving technology. Over time, it has shifted from a personal social network space (Java et al. 2007) to a space in which users connect to and broadcast news and opinion (Jansen et al. 2009; Java et al. 2009; Kwak et al. 2010). Rogers (2013) has rather neatly characterized this shift as from following friends to following events or interests.

In its current form, Twitter allows users to undertake the actions listed in Table 2.1.

Action	Description
Tweet	Send messages of 140 characters or less, accompanied by images and web links if desired. Tweets may include '@mentions,' the user-names of Twitter account holders preceded by the '@' symbol which indicate that a tweet is directed at, about or of interest to that account holder.
Retweet	Analogous to forwarding an email, a retweet is when a user sends a tweet originally posted by another user.
Favourite	Essentially, to press a button that records approval of a tweet, with that approval visible in the favouriting user's (public) profile.
Reply	Send a tweet as a direct response to someone else's tweet.
Follow	Subscribe to a user account and thus automatically receive tweets broadcast from that account in your Twitter feed ¹⁶ if using the Twitter app.
Direct Message (DM)	Send private messages to individuals. The recipients must be members of the sender's follower network
Search	Search for accounts and tweets based on criteria such as keywords, names, dates and @mentions.

Table 2.1: Actions available as part of Twitter

With the exception of the last two (Direct Messaging and searching), the actions listed in Table 2.1 are visible to anyone who looks at a user's profile or uses Twitter's search function, regardless of whether the observer has a Twitter account.

Since its inception, Twitter has been a popular site for and subject of research in both sociology and media/communication studies. Much of the research from these

¹⁶ The stream of tweets delivered to a Twitter user's digital device via a Twitter app.

domains that theorizes Twitter as a social system has focused on identity. For example, Marwick and boyd's (2011) influential work focuses on self-presentation and Twitter users' attempts to strike a balance between authenticity and interestingness. These authors use empirical data obtained from Twitter users to explore ideas such as imagined audience and context collapse (Marwick and boyd 2011, p. 122). Murthy's (2012) explicit attempt to theorize Twitter focuses on similar themes, but describes them in terms of surveillance and a blurring of boundaries between private and public. Megele's (2014) work, which describes Twitter chats using ideas about learning such as Communities of Practice (Lave and Wenger 1991) and the Zone of Proximal Development (Vygotsky 1986), is likewise concerned with collapsing boundaries and notions of audience and performativity.

These examples are typical of much of the work in this area in that they draw heavily on Goffman's (1959) writing on identity and performance. Such approaches seemed to me to be inconsistent with the perspective I wanted to take, in which images shared online were the starting points for research, and not the Twitter users who were posting them. My aim was not to investigate the practices of individual Twitter users, but rather to explore the ways in which images and users connect to enable knowledge and affect to flow. I also hoped to distance myself from the kinds of discourse about identity management that often run through research on social media use (Kietzmann et al. 2011; Schmidt 2007).

In work that has not been so troubled by the idea of context collapse and performance, some authors have noted that it is the layering and connecting of communication

spaces that make Twitter unique as a social media platform. Drawing on Schmidt's (2014) notion of personal publics, Bruns and Moe (2013) suggest that Twitter offers three interconnected layers of communication, at the meso, micro and macro levels. The meso level, which they see as the predominant and foundational level of communication on Twitter, consists of tweets read within personal-public follower networks. That is, the meso level consists of messages posted with the assumption that they will be read by the group of Twitter account holders who have actively chosen to follow the originator of those messages. They suggest that this layer of communication can be likened to a public statement to a group of friends and acquaintances, such as 'a speech at a family gathering, or a lecture to a class of students' (Bruns and Moe 2013, p. 17).

Bruns and Moe's micro level is comprised of replies to tweets. They compare this level to conversations with a single individual in a personal-public space, such as trying to have a conversation at a party, where friends and acquaintances might or might not listen and interrupt. Direct Messaging, which is not covered by Bruns and Moe, might be characterized as a nano level, with communication visible to only one pair of users.

Finally, the macro level is communication centred on the use of hashtags. These are keywords that users choose for themselves and that are preceded by the # symbol. They can be searched for using Twitter's search function, or various hashtag-following apps, and so allow messages to be spread beyond the boundaries of existing follower networks. Bruns and Moe suggest that this type of communication 'resembles a speech

at a public gathering ... of participants who do not necessarily know each other, but have been brought together by a shared theme, interest or concern' (2013, p. 18).

The Twitter conversations that are the focus of this thesis knit together all three of Bruns and Moe's levels. Organized around hashtags, they clearly work at the macro, broadcast level. However, their conversational nature means that communication at the micro and nano levels, involving both public replies and private direct messaging, are key components. The conversations are loosely synchronous, taking place within defined and regular periods of time. Any tweet including the relevant hashtag is part of the conversation, allowing parallel threads and an element of non-linearity to develop. Participants include anyone interested in sharing professional practice with other midwives or teachers; but because participants' tweets are broadcast to all their followers, and tweets are retweeted with different hashtags, the boundaries of these networks are highly porous.

This conceptualization of Twitter as a multi-layered space appeared to offer a helpful way of understanding Twitter chats and how they differ from general tweeting.

However, I still needed a broader theorization that would allow me to explore image-user and image-viewer interactions both within and outwith the Twitter chats.

2.2 Turning to Deleuze

The need to choose a theoretical framework posed one of the biggest challenges I faced during the early stages of this research. My main difficulty was that I could not

imagine choosing a theory or model before I had an idea of the data I might try to understand with its help.

During the first few months of study, when carrying out background reading on social media, critical digital studies and professionalism, I had imagined that I would be using Actor-Network Theory (Fenwick and Edwards 2010), or some variant of it. But as I began to narrow my focus to images and then to the Twitter chats, and to develop visualizations of these that emphasised the network-like relations between human and non-human actors, I felt I needed something else. While conducting an initial pilot observation, I was struck most by repetitions among the images I was seeing, and the apparent importance of emotion and affect. I wanted a way of theorizing online interactions and professional learning that would allow me to foreground both of these. During a conversation about repetition and difference among visual images with Dr Ian Munday, he suggested I might need Deleuze.

Initially, trying to find out what Deleuze might offer, I read *A Thousand Plateaus* (Deleuze and Guattari 1988), which I supplemented with work using Deleuze's ideas in educational research. I read authors using the idea of the rhizome, and smooth and striated spaces, in diverse educational contexts such as art education, science education, teacher education and educational philosophy (e.g. Allan 2004; Gough 2006; St Pierre 2004; Wilson 2003). Despite these efforts, I continued to feel that I was missing something crucial. Eventually, through Munday's (2014) discussion of Deleuze's ideas about the real and the virtual, I came to *Difference and Repetition* (Deleuze 1994).

It is in *Difference and Repetition*, described by Williams (2013) and DeLanda (1998) as Deleuze's masterwork, that Deleuze offers up the metaphysical vision that underpins his philosophical opus. And it was in this work that I began to find my own way of understanding Deleuze. The key to progress was my realization that Deleuze was a *philosopher*, not a social theorist. Before I could understand any exhortations to live more intensely, to plug in, to think rhizomatically, to live differently – before that, I had to try to understand how Deleuze thought the world worked.

Immanence, difference and repetition: a theoretical substrate

- Substrate:*
1. *The surface or material on or from which an organism lives, grows, or obtains its nourishment*
 2. *The substance on which an enzyme acts.*
 3. *A material which provides the surface on which something is deposited or inscribed*
- (OED 2016)

The nature of my engagement with Deleuze's (and Deleuze and Guattari's) work leaves me reluctant to describe what follows as a theoretical framework. Rather, these ideas provide a kind of substrate that provided nourishment but was simultaneously acted on and inscribed upon by my research as I extended or developed the use of some key ideas.

As I began to read *Difference and Repetition*, along with Williams's (2013) enlightening commentary, I felt a genuine sense of relief. Deleuze's philosophy is one of immanence. In it, reality includes a plane of virtual possibilities, all the things that might happen, that are open to us to connect to, and that are just as real as actual events and configurations of objects. The solidifying of one of these virtual

possibilities into an actual situation is described by Deleuze alternatively as an actualization or a contraction, highlighting the reduction or contraction of many possibilities into one.

The parallels between Deleuze's philosophy of immanence and quantum field theory (the view of the world encapsulated in the Standard Model of Particle Physics, and one of my favourite subjects to teach) struck a chord with me. In particular, the fact that in Deleuze's vision of reality, the virtual is as real as the actual (Deleuze 1994; Williams 2013) echoed something that I used to find myself repeatedly saying to my former students: the virtual is real, and nothing would happen without it. It is a well-accepted "fact" in physics that more than 95% of the mass of a nucleon, and so more than 95% of any physical object or being, is made up of stuff that is (in the vocabulary of physics) virtual: stuff that is not actualized, but is still really real. That is, the mass of actual objects, at the sub-microscopic level, is due to a constantly fluctuating sea of virtual (not realized) particles and anti-particles, representing all the possible pairs that could, possibly, be made real if enough extra energy were provided. The virtual world, for me, is all the infinite possibilities that are constantly fluctuating in and out of existence in the prolifically verdant but apparently empty space between sparse, stark instances of the actual, where all the other possibilities that made up the virtual sea have been obliterated in favour of one single, actualized outcome. The virtual is everything that could happen, and so does, if only virtually.

The question then arises, how does an actualization or contraction happen? In

Deleuze's view, things actually happen – actualized things only ever happen – if there is a difference in pure intensities to provide a motive force. According to Massumi,

Intensity is incipience, incipient action and expression. Intensity is not only incipience, but the incipience of mutually exclusive pathways of action and expression that are then reduced, inhibited, prevented from actualizing themselves completely – all but one. (1992, p. 91)

Again, this resonated with my understanding of interactions at the sub-atomic level: a difference in energy is needed for an interaction to occur.

For Deleuze, difference is positive, rather than negative: it operates *within*, a connection rather than a division or separation: '[d]ifference inhabits repetition' (Deleuze 1994, p. 76). Difference is not merely generative, it is the 'primary' generator (Hultman and Lenz Taguchi 2010, p. 528). Life itself is differential: there is always difference, so there is always change and flux. What drew me in to this way of thinking most of all was that Deleuze seemed to blur the boundaries between the way reality works at a foundational level (the level at which physics aspires to describe things) and the way it works at any other level: the imaginative, the emotional, the social (the things that physics refuses to countenance).

Deleuze's reconceptualization of difference requires a parallel reconceptualization of repetition (Deleuze 1994). Just as difference is not defined in terms of something missing that would otherwise have made two objects identical, repetition can no longer be taken to be sameness or identity:

Variation is not added to repetition in order to hide it, but is rather its condition or constitutive element, the interiority of repetition par excellence. (Deleuze 1994, p. xvi)

Repetitions within a series are, by definition, different. They are not the same member of the series and so cannot be identical. Instead, repetition is an act of differentiation.

As I first started to explore the Twitter chats that ultimately became the foci for my research, I noticed just how much repetition and differentiation there was in the series of shared images. Different images repeated certain messages and produced certain responses in me; and these seemed to be repetitions that were more like '[r]eflections, echoes, doubles and souls' which 'do not belong to the domain of ... equivalence' (Deleuze 1994, p. 1). I imagined using Deleuze's ideas to help me identify the ways in which difference was generated. And if difference is the primary generator, then it would be an essential presence if something was going to happen in interactions with images, including if that something was a form of learning.

Indeed, Williams (2013) suggests learning is a significant concern for Deleuze in

Difference and Repetition:

He wants to show how real learning and teaching involve a search for signs and a creative experimentation with them that triggers learning as radical change in another or in oneself, as opposed to the concepts of learning by rote or acquiring knowledge of facts and procedures associated with correct moves on those facts ... He criticises learning through repetition of the same, in order to clear the way for learning as the triggering of intensities. The only way we move towards a complete learning is by expressing the intensities locked up in a situation in a new way. (Williams 2013, p. 21)

Deleuze links his ideas of difference and repetition to learning through his descriptions of three different types of synthesis in his development of a theory of time (Deleuze 1994; Williams 2013). The first two syntheses position repetition primarily in terms of similarity, and relate to the present and the past; the third positions repetition primarily in terms of differentiation, and relates to the future. First, he describes the

passive synthesis exemplified by habit. This is the synthesis of a series of repeated actions or experiences, which might be related to learning in a continuous present. The second type of synthesis is that of pure memory, which creates relationships between temporally separated events:

... it implies between successive presents non-localisable connections, actions at a distance, systems of replay, resonance and echoes, objective chances, signs, signals, and roles which transcend spatial locations and temporal successions. (Deleuze 1994, p. 83)

This kind of synthesis creates a new repetition of the series being remembered, as the memory itself is a member of that series. Both of these passive forms of synthesis, while seeming to rely on sameness, in fact rely more on the background of differentiation and variation that allows similarity.

The third type of synthesis that Deleuze describes is that of the caesura¹⁷ or cut. In this type of synthesis, it is pure difference that is most important. It is a synthesis that produces a break, that erases the past and creates the possibility for a radically different future: it is 'a genuine cut' (Deleuze 1994, p. 172) which 'brings together the before and after in a becoming' (Deleuze 1989, p. 155). Thus learning as becoming is inextricably linked with repetition and differentiation.

This view of learning resonates with a sociomaterial perspective on professional learning as described in section 1.1. Learning and becoming emerge through micro-level interactions and relations, in this case relations of difference and differentiation.

¹⁷ A caesura is a rhythmic pause in the middle of a line of poetry or a phrase of music, but also is the term used by French typographers to describe the breaking of a word across two lines.

Agencements machiniques, desire and subjects

An agencement refers to a state of things. So that each one may find the state of things that suits him. (Gilles Deleuze from A to Z 2011, D as in Desire)¹⁸

As I embraced Deleuze's philosophy of immanence and difference, I began to better understand many of the other Deleuzian ideas that I had been reading about. I started to see the relevance of some of these ideas to both my developing research methods and to my analysis of the data I generated. One of the most important for this thesis is the notion of the *agencement machinique* (Deleuze and Guattari 1988; Massumi 1992). Although this phrase is commonly translated as assemblage or machinic assemblage, I prefer to retain the French term, which translates more accurately as (machinic) arrangement or layout¹⁹. This suggests to me not merely an assembling or coming together of different components (or machines), but a specific arrangement of them as they plug into each other in particular ways and in particular orders or relationships. Deleuze himself did not use the French word *assemblage*, consistently using *agencement* or occasionally *ensemble*, both words that have connotations of design and coherence that to my mind are lacking from the notion of an assemblage.

According to Livesey,

[Agencements machiniques] ... are complex constellations of objects, bodies, expressions, qualities and territories that come together for varying periods of time to ideally create new ways of functioning. (2010, p. 18)

They may represent the kinds of sociomaterial web or network in which knowledge and learning may emerge and circulate.

¹⁸ Wherever quotes from Boutang's film are included, the translation is my own.

¹⁹ One of the most common contexts in which the word *agencement* is used is in describing the layout of an apartment or shop.

The idea of *agencements machiniques* seemed a useful way to conceptualize the Twitter chats, which are themselves complex constellations of Twitter users, digital images, text, and the qualities and territories offered through Twitter's reach and affordances. As the study progressed, I realized that the same idea could be used to think about the interactions I created during the interviews I conducted. In both contexts, the notion of an *agencement* encouraged me to look for circulating intensities of knowledge and affect, and indications that these machines sometimes generated new ways of functioning or becoming.

To understand how *agencements machiniques* might produce new ways of functioning, it is necessary to introduce another important concept in Deleuze's thinking: desire. For Deleuze and Guattari, *agencements machiniques* are created and sustained through the circulation of desire (Gilles Deleuze from A to Z 2011, D as in Desire; Deleuze and Guattari 1988; Hayles 2001). Just as Deleuze sought to rescue difference from negativity and a deviation from an ideal identity, he also rejected a negative conceptualization of desire as signifying lack. In an interview recorded towards the end of his life (Gilles Deleuze from A to Z 2011), Deleuze described his and Guattari's understanding of desire as follows:

We wanted to say, until now, you talk abstractly of desire because you extract an object that you suppose to be the object of your desire ... And we were saying something very, truly simple, simple, simple – You never desire someone or something. You always desire en ensemble. It's not complicated ... This I say, I never desire something all by itself. I don't desire an ensemble either. I desire IN an ensemble. We can return to something we discussed earlier, alcohol, drinking. Drinking never means just "I desire to drink," et puis voila. It means "I desire to drink by myself while working." Or "to drink by myself while relaxing." Or "go and find some mates to have a drink, go into that [pointing] little café." In other words, there is no desire that does not flow – and I mean this precisely – flow

within an agencement. ... To desire is to construct an agencement ... Desire is really a constructivism. (Gilles Deleuze from A to Z 2011, D as in Desire)

Thus desire, like difference, is a positive relation. It is an intensity that flows within an *agencement*; in fact, it is what makes an *agencement* a functioning machine, rather than a collection of parts. It is not a yearning for something outside of the *agencement* one is already in, because desire signifies the construction of an inclusive *agencement*.

Desire is also linked to difference, in that difference is needed for desire to flow:

All of that is from the phenomena of physics. For an event to occur, a potential difference is needed, and for there to be a potential difference, there must be two levels. For an event to occur – a flash of lightning, or a little stream. And that's in the domain of desire. (Gilles Deleuze from A to Z 2011, D as in Desire)

When an *agencement machinique* forms and desire flows, turning it into a desiring machine, that machine becomes a subject that might experience a synthesis of the third type described in the previous section, that of the caesura or cut. Thus it seems that desire is crucial to learning and change.

The transformation of machine into subject brings in another aspect of Deleuze's thinking relevant to my research. Deleuze rejects the notion of continuous, well-bounded subjects or selves. Instead, when Deleuze talks of a subject, he is referring to a contraction of fluxes and flows of intensity that creates 'a location where thoughts may take place' (Williams 2013, p. 6), and that is itself a synthesis of all past members of the series of locations for thought which precede this one:

In the event the subject can no longer be understood as a fixed being, but rather a 'way of being' – a verb rather than a noun. The subject is an effect of multiple encounters that entails the history of previous encounters, the present and the potentialities of the future encounters that might take place. (Hultman and Lenz Taguchi 2010, pp. 531–532).

This conceptualization of the subject seemed well-suited to describe the thinking and meaning-making that might go on in the *agencements machiniques* formed by the Twitter chats or, later, in interviews. It also resonates with the sociomaterial de-centring of the mind of the individual, bounded human as the primary location for learning.

Lines of articulation and flight

Difference, repetition and synthesis seemed useful concepts in attempting to understand learning from the images shared in the Twitter chats, and the idea of an *agencement machinique* provided a way of thinking and talking about the comings together of humans and images in both online and offline contexts. However, I also needed ways in which to think about the dynamics of the Twitter conversations: that is, the forces and intensities that influence the speed and direction of the conversational flows. In exploring these in Chapters 5–7, I draw on the concepts of lines of articulation and flight (Deleuze and Guattari 1988, p. 88).

In conceiving of the Twitter conversations as *agencements machiniques*, I am also conceiving of them as spaces in which forces act to influence flows of intensity. Lines of articulation and flight, and the related concepts of striation and smoothness, provide a means of thinking through how the conversational flows are shaped and patterned. Lines of articulation may be thought of as channels that constrain and direct; they produce striated regions of space. Lines of flight, in contrast, are bursts of energy or differentiation that point to escape, arcing out across smoother, less-striated space in perhaps uncontrolled or undirected ways (Deleuze and Guattari 1988; Dewsbury 2011; Martin and Kamberelis 2013).

As a fairly proficient speaker of French, however, I knew that *lignes de fuite* are lines of perspective, lines that give depth and a path to the origin, the horizon, the farthest possible distance: the vanishing point. The translation into 'lines of flight' does not have the same connotation of a vanishing point, of an unrepresentable and unreachable infinity, but rather emphasises connotations of routes from one point to another, and of escape. In fact, *lignes de fuite* were important components of some of the images that I studied, raising the question: How do such lines of flight draw the viewer into the image, into its depths, to some unreachable vanishing point of practice? This is a question to which I shall return in Chapters 7 and 8, when I consider how the images posted in the Twitter chats contribute to the construction and circulation of representations of "good" practitioners.

Twists, braids and knots

As I undertook the analysis presented in Chapters 5-7, it seemed to me that the lines of articulation and flight I identified were frequently entangled and even co-constituting. In her work diagramming classroom interactions, de Freitas (2012) draws on Deleuze to describe lines of articulation and flight twisting, braiding and knotting. These ideas were taken up in relation to surgeons' experiences of professional learning by Cristancho and Fenwick (2015). In my research, I drew on these ideas but developed them in somewhat different ways.

I distinguish between the three types of interaction as follows. I identify interactions that seem relatively tenuous and unstable, or that generate paths between existing lines rather than drive motion along them, as twists. I identify interactions between lines of

articulation or lines of flight and articulation that seem to produce new, perhaps more stable lines of articulation, as braids. Sometimes, the various lines of articulation and flight appeared to become so entangled as to form configurations that seemingly cannot be undone. I identify such configurations as knots.

Up until this point, this chapter has presented the key concepts drawn from the work of Deleuze (and Deleuze and Guattari) that I use throughout this thesis. However, because Deleuze was a philosopher and not an educational or even social theorist, it is necessary to make the links to learning (and so the relevance to a thesis concerned with the potential pedagogical use of images shared on Twitter) more explicit. The following section attempts to address this need.

2.3 Deleuzian pedagogies

The various forms of education or 'normalization' imposed upon an individual consist in making him or her change points of subjectification, always moving towards a higher, nobler one in closer conformity with the supposed ideal. Then from the point of subjectification issues a subject of enunciation, as a function of a mental reality determined by that point. Then from the subject of enunciation issues a subject of the statement, in other words, a subject bound to statements in conformity with a dominant reality. (Deleuze and Guattari 1988, p. 587)

In Chapter 7, I consider some implications of my observations for professional learning in the chats. In Chapter 8, I explore pedagogical potentials of images found in the two Twitter chats in pre-service professional learning. These analyses and the suggestions and recommendations made in the final chapter are made from a perspective which aims to employ pedagogies informed by Deleuze's thinking.

Deleuze and Guattari's work has become rather influential in pedagogical research over recent years. One of the most frequently used ideas is that of the rhizome (e.g. Cormier 2008; Duncum 2001; Gough 2006; Le Grange 2011; St Pierre 2004). As with lines of flight, there is some tendency among authors using the concept of the rhizome to present it as uniformly positive, and an alternative to dominating tree-like structures that should be embraced, although Munday (2012) notes that the apparent liberation offered by rhizomatic approaches may also risk chaos.

In this work, I take a slightly different slant on the idea of a Deleuzian pedagogy.

Drawing on Bogue's (2004) ideas concerning a pedagogy of images and Zembylas's (2007a; 2007b) description of a pedagogy of desire, I focus on pedagogy that embraces Deleuze's ontology of immanence (Deleuze and Guattari 1988; Deleuze 1994).

I suggest that a pedagogy, and particularly a pedagogy for professional education, that is rooted in Deleuze's thinking is likely to have some of the following features.

First, it may work to expand the space of the virtual, giving rise to potential relations and actions that might otherwise have lain outside the reach of the students it engages.

Massumi (1992) suggested that '[a] thing has as many meanings as there are forces capable of seizing it' (p. 10); and so I suggest that a Deleuze-inspired pedagogy might increase the number and range of meanings that can be made by triggering new forces and intensities among its students.

Second, a Deleuze-inspired pedagogy may connect to repeated series, searching for the difference that truly differentiates. Deleuze describes the power of 'profound

structures of a hidden repetition in which a “differential” is disguised and displaced’ (Deleuze 1994, p. xx); it is through the creation of difference that the potential for something to happen is also created. The richest, most productive understanding occurs because of the difference-engine that is created by the uneven distribution of intensities both within the repeated series of selves (the Becoming-other) and across the space of the virtual and actual present. Each new synthesis follows prior syntheses, prior repetitions and differentiations that contribute to its meaning. Each entity will have a different style of becoming: as Colebrook says (comparing viruses and words), ‘they *become* different in their own different styles depending on the qualities by which they actively differentiate themselves’ (2002, p. 84, original emphasis). This will be as true for professionals as it is for viruses and words. As a midwife or teacher encounters an image from the online chats, a synthesis of the image with prior experience may occur. Perhaps there are styles of becoming that are adopted more frequently by midwives than teachers; perhaps there are qualities (or intensities) by which teachers differentiate themselves that are not so generative for midwives.

These styles of becoming may then be drawn out along different lines of flight, created by the interplay of environment and style itself. Bogue (2004) reads Deleuze as presenting learning as disorientation or shock, produced through an encounter with signs. He writes that learning and knowing in Deleuze’s thinking is what takes place as one organism immerses itself within another element and opens up to an encounter with signs ‘forcing thought to deal with experiences that disrupt the common, coordinated functioning of the senses and faculties’ (Bogue 2004, p. 337).

A third characteristic of a Deleuze-inspired pedagogy may be that it seeks to go beyond conventional academic forms of critique, and instead engage in something more like what Massumi (writing about academic writing) terms productivism:

If you want to adopt a productivist approach, the techniques of critical thinking prized by the humanities are of limited value. To think productivism, you have to allow that even your own logical efforts feedback and add to reality, in some small, probably microscopic way ... Once you have allowed that, you have accepted that activities dedicated to thought and writing are inventive ... [Productivism] requires that techniques of negative critique be used sparingly. The balance has to shift to affirmative methods: techniques which embrace their own inventiveness and are not afraid to own up to the fact that they add (if so meagrely) to reality ... by adding that ounce of positive experience to the world you are affirming it, celebrating its potential, tending its growth, in however small a way. (2002, pp. 12–13)

Zembylas's pedagogy of desire (2007a; 2007b), described in the following section, develops these ideas further using the notion of productive desire.

Pedagogy of desire

Central to Zembylas's argument is that desire is 'pedagogically useful as that which produces and seduces imaginations' (2007a, p. 332, original emphasis):

The Deleuzo-Guattarian use of desire as an 'immanent principle' of creativity and movement enables a new view on affect that does not assume simple feelings but immanent becomings ... affect in education may be redefined as a landscape of becoming in which forces, surfaces and flows ... are caught up in a desiring ontology. (ibid.)

One result of the flow of desire in *agencements machiniques* may be concomitant flows of affect, and so 'affect in education may be redefined as a *landscape of becoming*' (ibid., p. 332). Quoting Leander et al. (2010), Al-Mahmood observes that 'places of (e)-learning are "affectively charged"' (2011, p. 71); if the Twitter chats studied in this work are conceived of as spaces of informal professional learning, then one might expect a

similar affective tension. Thus a pedagogy of desire is one in which affect plays an important role.

However, a pedagogy that embraces desire goes beyond the creation of flows of knowledge and affect. As Zembylas (2007a) indicates, because desire for Deleuze and Guattari is political, a pedagogy of desire is 'a politically engaged pedagogy' (p. 344):

When desires challenge or are challenged by events, the boundaries of what is sayable or visible are pushed because the fragility of these boundaries is exposed. (ibid., 333)

In Zembylas's view,

Pedagogy of desire works to develop in students and teachers a criticality about knowledge, affect and the events and meanings of everyday learning and teaching practices. The purpose of this criticality is not to produce 'global knowledge' about teaching and learning, but an integrated understanding of knowledge and desire and their connections to the social and political aspects of pedagogical encounters. (ibid., pp. 339–340).

This is consistent with Deleuze and Guattari's own position:

What interests us in operations of striation and smoothing are precisely the passages or combinations: how the forces at work within space continually striate it, and how in the course of its striation it develops other forces and emits new smooth spaces. (Deleuze and Guattari 1988, p. 500)

Zembylas's vision of a pedagogy of desire is thus one that seeks to interest students in the operations of striation and smoothing, or the forces and intensities creating lines of flight and articulation, in the spaces they themselves inhabit.

There may be some tension between Massumi's productivism and Zembylas's pedagogy of desire, relating to the notion of critique. Torrance describes how, in Massumi's view:

... critique underplays the routine incrementalism of everyday life and overplays revolutionary rupture. As such critique can be very conservative, ignoring the possibilities for change that are constantly available in routine activity. (2016, p. 5)

However, the desiring criticality that Zembylas seeks to promote is one that differs from the radicalist criticality that seeks ‘revolutionary rupture.’ Indeed, Massumi himself explains:

It is not that critique is wrong. As usual, it is not a question of right and wrong – nothing important ever is. Rather, it is a question of dosage. It is simply that when you are busy critiquing you are less busy augmenting. You are that much less fostering. There are times when debunking is necessary. But, if applied in a blanket manner, adopted as a general operating principle, it is counterproductive. Foster or debunk. It’s a strategic question. Like all strategic questions, it is basically a question of timing and proportion. Nothing to do with morals or moralizing. Just pragmatic. (2002, p. 13)

Thus the tension between these two attitudes – productivism and desiring criticality – may be defused if a pedagogy of desire seeks to promote criticality on a smaller, more productive, scale – one which is put to work to produce change even in routine contexts, rather than to debunk and discredit.

2.4 Summary

This chapter has laid out the key concepts derived from the writings of Deleuze, including his work with Guattari, that I use in subsequent chapters. These concepts are rooted in Deleuze’s philosophy of immanence, particularly as set out in *Difference and Repetition* (Deleuze 1994). My reading of Deleuze regarding difference and repetition, *agencements machiniques* and desire, and lines of articulation and flight informed both the development of the methods described in the next chapter, and the analyses carried out in chapters 4–8. My readings also led me to look for particular characteristics in pedagogies that might make use of the images shared in the Twitter conversations,

described in the preceding section, which influenced both my analysis and the recommendations made in the final chapter.

Chapter 3 – Research design

An approach based on part-objects is [that] of a demented experimenter who flays, slices and anatomizes everything in sight, and then proceeds to sew things randomly back together again. You can make any list of part-objects you want: hand, breast, mouth, eyes ... It's still Frankenstein. (Deleuze and Guattari 1988, p. 171)

The previous chapter set out the theoretical ideas I thought with in attempting to develop and address my research questions. This chapter starts the process of putting these ideas into action, while trying to avoid ending up as Frankenstein.

First, I return to my research question and elaborate on it. I then describe the methods of generating data²⁰ I adopted and reflect on how the thinking described in the previous chapter influenced the ways in which I thought about both method and data. I describe how I developed a means of visualizing and so studying interactions and relations between images and tweeting professionals in the two Twitter chats. I show differences in chat participants' habits or patterns of engagement with images, and describe how I used these patterns to help identify professionals to approach for interview. Finally, I provide an account of the interviews themselves and how I began to analyse them. Throughout, I consider some of the ethical questions that arose both before and during this study. I end this chapter with some reflections on validity and value.

²⁰ It is worth noting that the notion of data as stable, neutral, objective and/or independent does not fit in a study adopting the Deleuzian perspective on reality described in Chapter 2. I am very much aware that the images and words I used to develop my thesis are just those that happen to have been actualized in my research processes. However, I use terms such as “data” and “data generation” in this thesis for reasons of expediency.

3.1 Opening up my research question

The first step in trying to avoid an approach that might atomize my research and produce a series of isolated parts was, paradoxically, to break down my research question. The original question seemed simple enough:

What might, and what do, student professionals learn from images shared during intra-professional Twitter chats?

This question shows that, from the start, I wanted to engage with what Torrance (2016) describes as an experimental orientation to qualitative enquiry. That is, I wanted my research to do more than '[look] backward to investigate what *has happened*' (2016, p. 3, original emphasis) and instead look 'forward to explore what *might happen*' (ibid.). However, in order to work out how to do this, I realized I needed to both pull my question apart and expand it: that is, to open it up. As a starting point, I elaborated the question as follows:

What might student professionals learn from images shared during intra-professional Twitter chats, if they saw them?

What do student professionals learn from images shared during intra-professional Twitter chats, when they are shown them and given the chance to talk about them?

To address these, I needed to answer the question,

What is there in the images shared in the two sample Twitter chats that might be used for pedagogical purposes?

In conceiving of the Twitter chats as *agencements machiniques* (Deleuze and Guattari 1988) in which images and professionals plug into each other, it seemed natural to anticipate that they were spaces or machines through which intensities of knowledge and affect would flow. I hoped that these flows might provide resources for learning. To uncover these resources, I needed to answer the following questions:

What images are shared during the two sample chats?

What do the images do – how do they trigger flows of meaning?

I could address the first of these by observing the Twitter chats for a while, recording details of shared images. Deleuze's thinking provides a way to conceptualize the instantaneous, fleeting online presences that are referred to as individual tweeters or users (those who post images, comment on them, or respond to them in other ways). The notion of the individual as a perspective on reality – a location where thought may take place (Deleuze 1994; Williams 2013) – suggests methodological approaches that focus on the instantaneous interactions between users and images, rather than follow particular people in, for example, an ethnographic approach.

It was not, however, going to be possible to answer the second question by studying the chats alone. Although I could record how the images shared during the chats were visibly interacted with in the form of retweets, favourites and comments, there was no way for me to identify and study all the *invisible* interactions that occurred when chat participants simply viewed images without responding on Twitter, or when they responded using Direct Messaging. Even when responses were visible in the form of replies, Twitter's 140-character restriction meant that they did not usually reveal much more than a general reaction such as appreciation or interest. I also realized that I could not assume that my own responses to and interpretations of images would correspond to those of professionals more familiar with the practices and contexts being depicted.

As Williams (2013) explains, two principles dominate *Difference and Repetition* (Deleuze 1994):

1. It is best for our actions to connect with all the things that have brought them about and that they bring about.
2. It is best to select out thoughts so that everything is left behind.

These seemingly contradictory principles offer a way to think about the ways in which individuals connect with images shared in online environments. The simultaneous connecting and forgetting encapsulates interactions with things online, particularly images. As illustrated by the network graphs produced in section 3.2 below, images serve as connection points, as ways to plug into a multiplicity of knowing, feeling and desiring machines. I decided I needed to talk to professionals who participated in the chats as a means of finding out how they experienced interactions with images: what they connected with, and what they forgot. As I shall describe below, I conducted interviews with six professionals from each profession, using a selection of shared images as elicitation devices. These interviews also allowed me to address a further research question:

How do the images shared during the Twitter chats contribute to professionals' learning and development?

Returning to my original research question, however, observation and interviews with professionals alone would not suffice to answer the question:

What might student professionals learn from images shared in the two Twitter conversations under study?

In order to address this, I decided to interview two educators involved in the provision of pre-service professional learning in higher education, and to conduct group interviews with six student professionals, in each profession.

The ways of thinking described in the previous chapter have substantial implications for method, and I tried to bear this in mind throughout this research. I needed to avoid the 'theoreticist orientation to knowledge' and the technicist approach to method that 'further instantiates a rift between theory and method' (Law et al. 2011, p. 3): that is, I needed to ensure that I thought theory, method and data together. I hoped that the various approaches to generating data – observation, interaction mapping, and interviews with practising, educating and student professionals – would enable me to adopt a coherent, holistic view of image-viewer interactions. By analysing the data iteratively, allowing understandings developed from one phase to inform those developed from others, I hoped to avoid ending up with a Frankenstein's monster set of findings that needed to be stitched together and artificially animated.

3.2 First phase of data generation: images shared during the chats

The first stage of my research addressed the question:

What images are shared during the Twitter chats?

It involved a mapping of relations between users and images, and my own immersion in the images themselves.

Tracing user-image interactions

Images exist; things themselves are images ... Images constantly act on and react to one another, produce and consume ... We are thus held in a chain of images, each in its place, each in itself an image, and also in a web of ideas which function as words of command. (Deleuze 1978, np)

The images tweeted during the Twitter chats formed both chains and webs: chains of images tweeted with the relevant hashtags; chains of images tweeted by individual users; webs of images and users that connect with them in one way or another. My first step was to try to understand these chains and webs, by observing what images were shared and how they were interacted with.

This initial observational stage of the research was carried out in lurking mode: that is, I observed what was going on in the chats without announcing my presence or role as a researcher. The fact that it is possible to do this in online environments raises significant ethical issues. In this phase of my research, I relied upon the guidelines for conducting ethical internet-based research provided by the Association of Internet Researchers (Markham and Buchanan 2012). The key principles informing these guidelines include the recognition that:

[R]ather than one-size-fits-all pronouncements, ethical decision-making is best approached through the application of practical judgment attentive to the specific context ... researchers must balance the rights of subjects (as authors, as research participants, as people) with the social benefits of research and researchers' rights to conduct research. (Markham and Buchanan 2012, p. 4)

This context-dependence is particularly relevant to the gathering of data that might be publicly available (as is the case for Twitter) but that may still be the object of users' concerns regarding the 'appropriate flow of information' (ibid., p. 9). Ordinarily, a researcher might expect to obtain permission from all those whose actions were going

to be used as data. However, the nature of Twitter chats in general, and the two chats under study in particular, meant there were several reasons not to attempt to do this.

First, those participating in the chats knew that they were doing so in a way that could be viewed by anyone, and so recording the usernames and actions of those that interacted with images during the chats was little different from recording data broadcast in other media such as newspapers or television.

Second, unlike internet-based research using, for example, messages on bulletin boards or walled-garden sites such as closed Facebook groups, there is no owner or overall facilitator who is in a position to grant permission on users' behalf.

Third, there is no effective way to announce a researcher's presence in a Twitter chat. If I tweeted something about observing the chats with the relevant hashtag, only those users who actually searched for the hashtag, rather than relied on their follower-follower networks, would see the message. This difficulty in making contact is further exacerbated by the fact that Twitter's feed and basic search functions are non-neutral. The tweets a user is fed by the Twitter app, or the results of a search made using Twitter's search function, are ordered by an undisclosed, Twitter-defined measure of popularity, combined with data on what the user has favoured in the past (Patkar 2016). Tweets from a non-popular user such as myself are unlikely to appear in anyone's Twitter feed or at the top of anyone else's search results.

Fourth, because the chats ran regularly and over extended periods of time, I would have needed to tweet about my presence repeatedly. According to my interviewees,

typically, participants in both chats come and go, perhaps paying attention for 10 minutes when they have some spare time and then checking the rest of the chat later (or not at all). Repeated tweets from me would have constituted the kind of off-topic clutter that many of my interviewees later complained about.

Finally, I was concerned that announcing my presence might modify chat participants' behaviour in ways that meant they were no longer reaping the same benefits from the chats. Thus, on balance, I felt that I could do more potential harm by attempting to announce my presence than by keeping silent.

In order to generate data, immediately after each chat session, I used Twitter's advanced search function to identify all tweets made using the relevant hashtags. I then recorded details of each of the tweets including images, and visible interactions with them in the form of retweets, favourites and replies. Initially, I had intended to collect data from both chats over the same observation period. However, the different frequency with which images were posted during the chats (and of chat-related tweets in general) led to different collection periods. I collected data from the WeMidwives chats for a period of four months. The much higher frequency of image-tweets with the hashtag #pedagoofriday meant that I ceased data collection after six weeks, as it seemed that I already had more images than I could do justice to.

During these periods, I recorded data regarding 87/428 images posted in WeMidwives/PedagooFriday chats, with a total of 1242/5593 visible interactions with those images.

Because I was conceiving of the chats as *agencements machiniques* (Deleuze and Guattari 1988) in which intensities of affect and knowledge might circulate, I thought it would be instructive to find ways of visualizing them. As I did so, I sought to avoid the “optics” that begins with the human subject viewing the world from a privileged and foundational “point of view” (Hultman and Lenz Taguchi 2010, p. 527), and so developed visualizations that focused on interactions between images and chat participants.

Visualizing user-image interactions

Drawing on the techniques of Social Network Analysis (Scott 2012), the interactions with images within the conversations can be envisaged as bimodal networks with users connected to images by multiple types of tie. This approach has the effect of centring images, rather than humans, and emphasises that both images and humans participate in the chats.

All images are connected to at least one user (the original tweeter) but may be connected to many more through their favouriting, retweeting and replying activities. A user may be connected to an image in more than one way; for example, it is fairly common for a user who retweets an image to also favourite it. I used the software NodeXL (Hansen et al. 2010) to visualize such relationships, and thus to “see” representations of the *agencements machiniques* that the chats constituted.

Figure 3.1 shows a visualization of a single WeMidwives chat, conducted over a period of two hours. I use this example as it is typical of the WeMidwives exchanges, and also sufficiently simple to allow the reader to understand the most important features. The

black squares represent images. The coloured discs represent users. The size of a square is proportional to the number of visible interactions observed to have occurred with that image. The size of a disc is proportional to the number of visible interactions that user engaged in. In this particular visualization, the largest square represents an image eliciting 43 visible responses, while the smallest square represents an image that elicited only two responses.

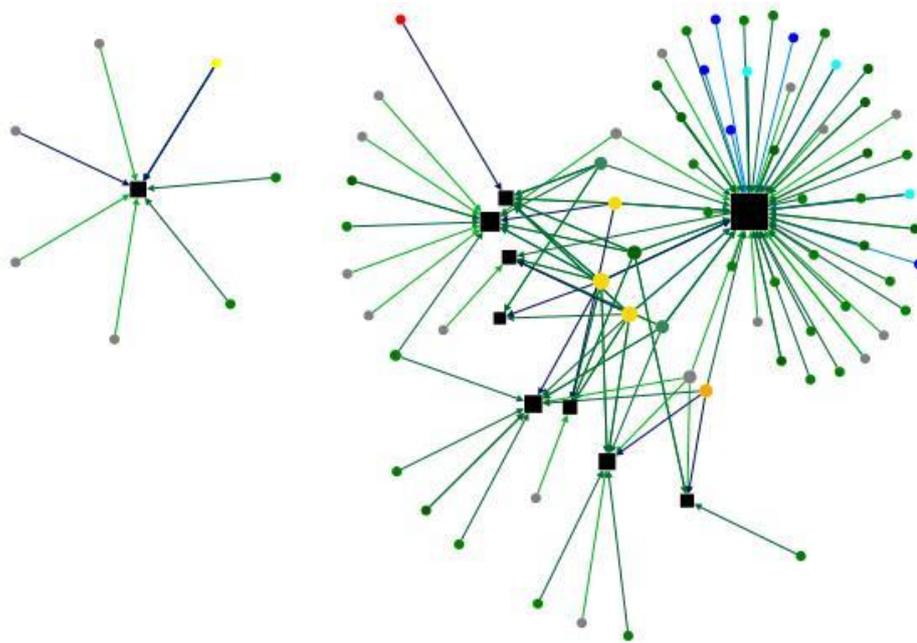


Figure 3.1 Visualization of image-user interactions during a single WeMidwives chat

The colours of the discs indicate the nature of the interactions users engaged in. For example, grey discs represent users who only favourite, and never tweet, retweet or reply to images. Red discs, in contrast, indicate users who only tweet images themselves, and never interact with images posted by others. Other colours represent other interaction combinations: for example, gold discs represent users who engage in all types of image-connected activity.

Visualizations such as this show chat participants plugging into tweeted images in ways that might facilitate different kinds of flow with the *agencement machinique*.

Connections formed by favouriting may facilitate affective flows, as the original source of the tweet may feel validated or applauded by these responses. Connections formed by retweeting may facilitate flows of information, knowledge or opinion, as tweets are circulated into an expanded *agencement* (not represented in these images).

Figure 3.1 also shows how in fact the chats might consist of multiple, unconnected *agencements*. One can see that one particular image attracts the most attention, and that there are many users who interact with only one image during the chat. In contrast, there are a small number of users who interact with almost all of the images posted. There is also what appears to be a separate or parallel conversation, involving a completely different group of users linked by a single image. This raised questions about the factors that attract and repel interaction, and that thus accelerate or impede the flows of information, ideas and affect carried by the images; I shall return to these questions later in this thesis.

Because both the WeMidwives and Pedagoofriday chats have regular participation by particular Twitter users, the *agencements machiniques* they form extend beyond single sessions. To better understand the different ways users tended to interact with images in the chats, I generated visualizations of all interactions in the observation periods.

These are shown in Figure 3.2 (for the WeMidwives chats) and Figure 3.3 (for the Pedagoofriday chats).²¹

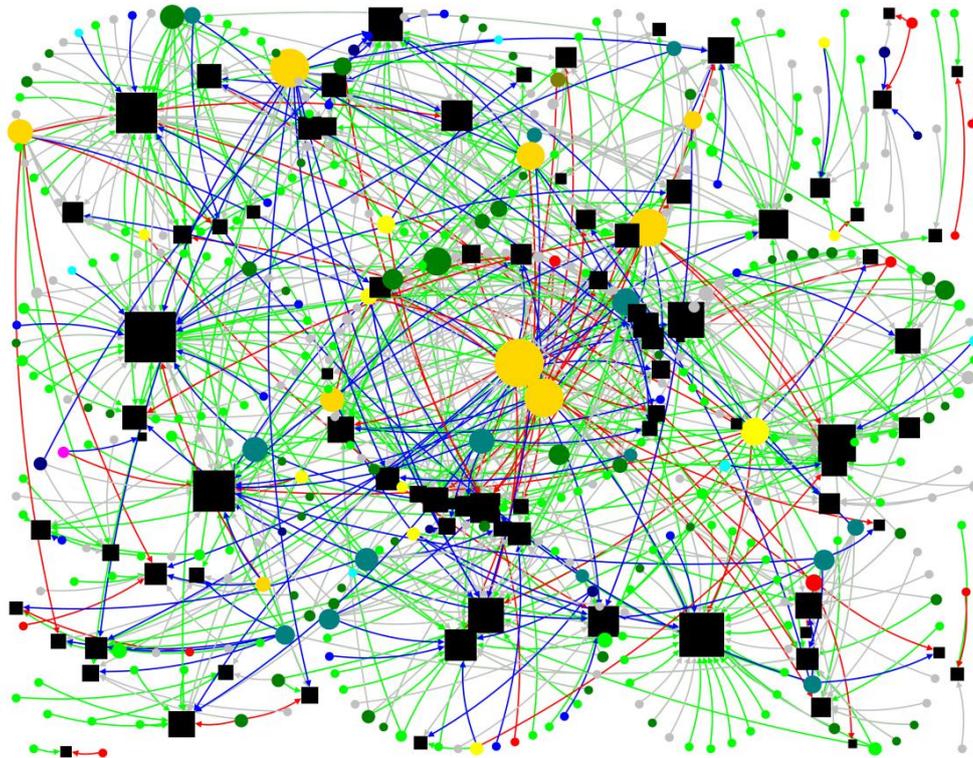


Figure 3.2 Visualization of all user-image interactions during the WeMidwives chats

Although fewer tweets with the hashtag #wemidwives include images than those with the hashtag #pedagoofriday, there are some important similarities between the image-user interaction patterns in the two chats. In each case, some images elicit visible responses from many users, while others attract little or no visible attention. In terms of user behaviour, each chat has a relatively small number of participants who interact with images in all the ways that Twitter allows (indicated by gold discs), and relatively

²¹ It should be noted that these visualizations are the result of many decisions made by both myself and the software I used, and do not represent a singular, correct representation of the data. More detail on both the method and the variability of the resulting visualizations is available in two publications arising from this work (Wilson 2016a; Wilson 2016b).

large numbers of users who only interact with images by retweeting them (indicated by green discs). Those who do make use of all of Twitter's affordances also tend to be the most active participants, as indicated by the relatively large radii of the gold discs.

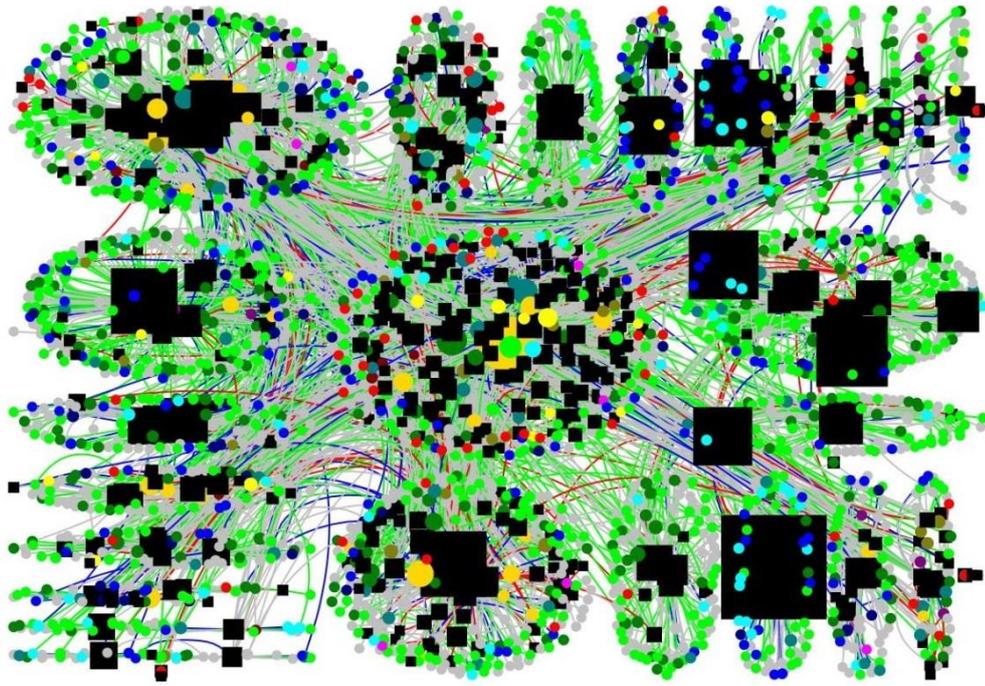


Figure 3.3 Visualization of all user-image interactions during the PedagogooFriday chats

These analyses provided a way of entering into, and perhaps becoming-with the data (Hultman and Lenz Taguchi 2010). My understanding of the nature of these chats evolved as I recorded more data and experimented with visualizations. It became clear that although I could *represent* them as networks, they were better understood neither as networks nor communications among communities, but rather as constellations of images and users that were not fixed or even necessarily connected. These analyses also served two important purposes with regards to the next stages of the research. They helped me to identify images to use as elicitation devices in subsequent interviews; and to identify actors within the chats to approach for interview.

What do the images depict?

As well as seeking to envisage the structures and relations in the *agencements machiniques* formed among chat participants and images, I also wanted to understand the content of the images themselves. In their challenge to anthropocentrism in analysing visual data, Hultman and Lenz Taguchi advocate 'becoming-with the data' (2010, p. 534):

What Deleuze calls the virtual is the reality of the potentialities in all bodies in their inter-connectedness ... This allows for [you as researcher] to reinvent yourself by way of your engagement and enchantment with what emerges in each event. This is about a positive instead of a negative understanding of difference ... What we do as researchers intervenes with the world and creates new possibilities but also evokes responsibilities. (Hultman and Lenz Taguchi 2010, p. 540)

The idea of difference as a positive relation, and of the world as constructed of differential relationships among members of series (Deleuze 1994), led to a sensitivity to such series in the images shared in the Twitter chats. Similarly, a conception of events (including those constituted in images) as resulting from the interplay of forces and intensities suggested a need to view what was depicted in the images shared on Twitter as 'overlapping forces' (Hultman and Lenz Taguchi 2010, p. 527). Viewing the images in this way meant, again, making a conscious effort to de-centre depicted humans and pay attention to other components and details of the images. Ultimately, this led me to analyse the responses produced in interactions with images using an approach based on the traditions of iconography/iconology; this approach is described in detail in Chapter 4. However, in order to show how I chose images to use as elicitation devices in the interviews, I provide a brief overview here.

Images posted in both chat series showed repeated subjects and contexts in many variations. Thirteen of the images tweeted during the WeMidwives chats were photographs of midwives; twelve were images including photographs of pregnant women, mothers and babies. Sixteen referred to specific professional practices. Twenty-eight were images that might be interpreted as motivational or affirmative messages, such as Walt Whitman²² and Julia Child²³ quotes, or messages about compassion and care. These often had rich textual qualities, appearing hand-made, or made to look like embroidery, or set against backgrounds of sunrises, grainy wood or ocean waves.

Of the images tweeted with the hashtag #pedagoofriday, 49 included photographs of children in classrooms (often in role-play activities) or outdoors. Seventy-one featured examples of students' written work, often on post-it notes or pages of exercise books. One hundred and thirty-seven were photographs of non-text-based students' work, including paintings, models made with clay, plasticine or paper, and cakes. One hundred and two images showed teacher-produced resources or activities, some in a form that could be downloaded and put to use by other chat participants, while others were photos or screenshots. Sixty-two images included wall-mounted displays, sometimes of students' work and sometimes of artefacts or resources generated by teachers.

²² 19th century American poet and humanist.

²³ 20th century American celebrity chef and author, famous for her positive and down-to-earth attitude.

Together with these observations about the content of images, the user-image interactions suggested a strategy for choosing images to use as elicitation devices in subsequent interviews. I thought it would be interesting to see how practitioner professionals responded to images that had elicited high rates of visible interaction, but also to those that had elicited little or no interaction at all.

High and low interaction images in WeMidwives chats

The images tweeted with the hashtag #wemidwives that elicited the largest number of visible responses during the Twitter conversations fell into three broad categories.

These included somewhat self-referential images relating to the #wemidwives chats, in the form of word cloud representations of the chats themselves, plus a mention of #wemidwives in a magazine. The word cloud images employed fat, rounded fonts; used strong but earthy colours such as ochres, desert-reds and leaf-greens; and were laid out in asymmetric, soft-edged patterns. The image of the magazine showed a page curved over, the photograph taken at a slant, with soft light and shadow.

They also included representations of midwives, including a photograph of a smiling, mature midwife and a Christmas card featuring a drawing of midwives on their way to attend Jesus's birth.

The third type of image among the most responded to were messages of support: a poster on a wall, in a "handwritten" font, proclaiming that 'kindness matters,' and an image of the phrase 'Better Together,' in a cursive white font against a warm, striking red background.

Perhaps equally interesting are those images that were least visibly responded to during the conversations, particularly since most images posted during the WeMidwives chats elicited at least some response. In fact, only three images elicited no visible interactions at all: these were a 'flu jab reminder, a woman in front of a projector screen at a conference and a rather ugly picture of a baby with spray tan around its mouth, which was subsequently deleted by the Twitter user who tweeted it.

High and low interaction images in PedagoFriday chats

Amongst the images posted with the hashtag #pedagoofriday, those attracting the most attention were predominantly instantly useable resources; tips and tricks (such as lists of the 'Seven best ways to have a maker classroom' or 'Eight characteristics of great teachers'); and a small number of copyable but not instantly useable resources. No images of students' work, shots of students or classroom scenes figured among the twenty-five most responded to images.

A much larger fraction of the images posted by teachers received no visible responses at all. These were dominated by the categories of image missing from the most actively responded-to group: that is, they were mostly images of students and students' work.

Taken together, these details on image content and visible interaction rate influenced which images I selected to use in each subsequent interview.

Patterns of visible interaction with images

Visualizations such as those in Figures 3.1 to 3.3 also suggested that participants I might approach to interview.

These showed interactions with images by chat participants to be highly variable, as indicated by the range of radii and colours of the discs in these figures. This variation can be made clearer by looking at the interactions associated with individual Twitter accounts. Figure 3.4 compares the different types of visible interactions with images for a single participant in the PedagooFriday chats, PP1.

This particular participant tweeted one image himself, posted replies to nine tweets that included images, retweeted 30 images, and favourited 135.

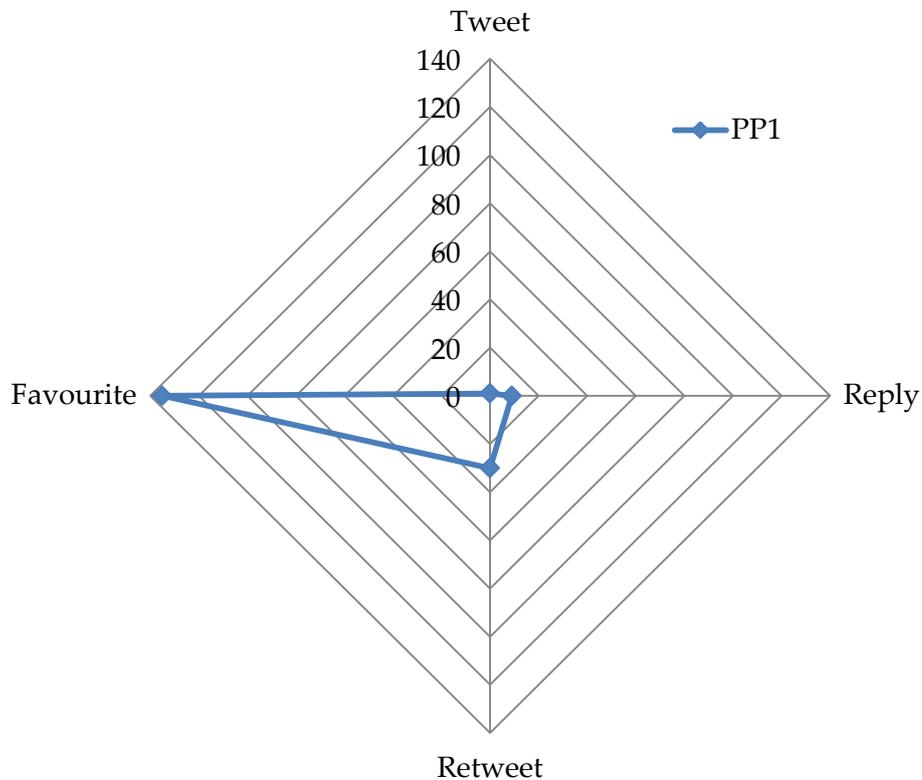


Figure 3.4 Visible interactions with images for a single participant in the PedagooFriday chats

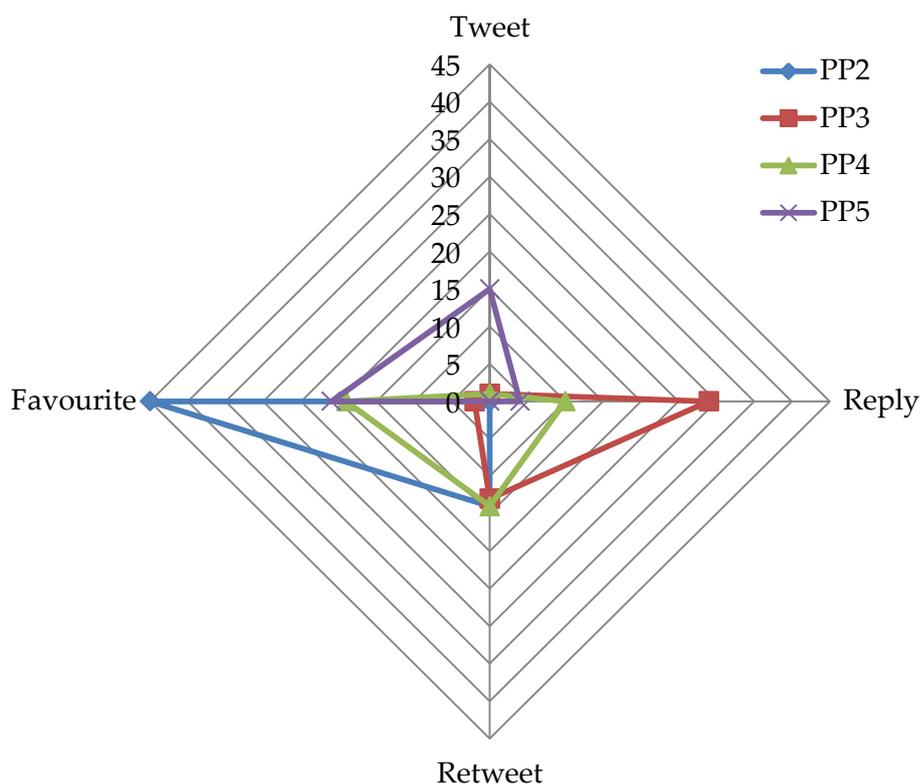


Figure 3.5 Visible interactions with images for four participants in the PedagooFriday chats

Figure 3.5 uses the same visualization technique to compare the visible image interactions of four other participants in the PedagooFriday chats. This figure illustrates how different participants interacted with images in different ways. PP2's pattern was rather similar to PP1's in Figure 3.4, with relatively low numbers of original tweets and replies, somewhat higher numbers of retweets and a large number of favourites. PP3 interacted with images via tweeting them and retweeting them a similar number of times to PP2, but almost never favoured them and frequently posted replies. PP4 favoured, retweeted and replied, but only once shared an image of his/her own. PP5, in contrast, was a frequent tweeter of images but only rarely interacted visibly with images tweeted by other chat participants.

I used these visualizations and others like them to identify Twitter users who participated in the chats in a range of ways, whom I might contact to request an interview.

3.3 Second phase of data gathering: interviews using images as elicitation devices

Following my observations of the Twitter chats, I conducted a total of 15 individual interviews with practising midwife and teacher professionals and those involved in their education in higher education contexts of both midwifery and education. I also facilitated three group interviews with a total of 12 undergraduate student professionals, six from each of midwifery and teacher education programmes in two Scottish universities.

Before continuing to describe the interviews, I shall clarify some terms that I use throughout this thesis. There is potential for confusion over terms such as “participant,” “conversation,” “professional,” “educator,” “teacher,” and “student” in this work. To avoid this, I adopt the following language. “Conversation” is used to refer to the Twitter chats, and not to conversations in the interviews. Similarly, “participant” is used to refer to those participating in the chats, and not to participants in the interviews. Practising professionals who are not involved in the formal, higher education-based teaching of student professionals are referred to as practitioner professionals. Those involved in the university-based education of student professionals (who are also either practising or formerly practising professionals

themselves) are referred to as educator professionals. University-based pre-service professionals are referred to as student professionals.

I decided to conduct interviews, and use images as elicitation devices, because my own immersion in the Twitter chats was increasingly leaving me wondering why particular images had been shared, and what expert (and novice) professionals might see in them.

The form of elicitation I used was close to that described by Harper (2002), but used various types of digital image (not just photographs) and was based on images selected by me, sometimes created by the interviewee but more often created by third parties.

As indicated in the preceding section, I selected images that had already been shared online to use as elicitation devices in each interview. My selections were partly based on the content of the images: in each interview, I tried to use a sample that was representative of the recurring image types described in section 3.2. They were also influenced by the number of visible interactions the images had elicited; I used images that had both high and low visible interaction rates. Finally, my choice of images for each interview was also influenced by the person I was interviewing: in interviews with chat participants, I selected at least two images that I had observed them to interact with themselves, including, in some cases, images they had tweeted themselves.

As with the initial phase of data gathering, there were some thorny issues around ethics in this phase. Again, I tried to follow the guidelines issued by the Association of

Internet Researchers (AoIR) (Markham and Buchanan 2012); however, because these are not focused on using images as elicitation devices in interviews, I supplemented them with work that has addressed the issues that arise in such work (Clark et al. 2010). As with the AoIR guidelines, these authors emphasise the context-dependence of ethical decisions about image use, and recommend a situated, negotiated approach.

First, while the images I was using had all been shared on Twitter in a publicly accessible chat, I did not have the permission of those who had tweeted them to use them in my research. Second, some images included photographs of people: occasionally, clearly identifiable people. Not only did I not have the permission of those featured in such images to use them in my research, I could not be sure that the Twitter user who had tweeted them had gained their permission to tweet their photo. It was therefore an important part of the interview to discuss issues such as confidentiality with respect to images produced by third parties.

Another issue around the use of images appeared when I discovered that one image that I had recorded details of in a WeMidwives chat had subsequently disappeared. It seemed that the tweet it was broadcast in had been deleted by either the person who tweeted it, or possibly by Twitter. (The image was of a naked woman giving birth in a birthing pool, and so might have attracted some complaints by users who saw it.) This prompted me to think about both the stability of the images as data and the rights of those who were sharing images to delete them.

For these reasons, I did not store copies of images from the chats other than those that I had selected to use as elicitation devices, so that if the original tweeter subsequently

decided to delete them, I would not be preventing that by keeping an undeleted copy. I also sought permission to use images for research purposes from the Twitter users who had tweeted them. All Twitter users who responded to these requests consented to my use of the images for both interview and publication purposes. In many cases they indicated that they wanted to be acknowledged for producing and sharing the images, either by their Twitter handle or their full name. However, in a small number of cases I received no response. Because this was not an outright refusal, I had to make professional judgements about whether to go ahead and use images in these circumstances, and if so, whether to edit or adapt them to make them non-identifiable. In the end, I used a small number of these images without adaptation, but if they contained images of people (children, parents, midwives) I blurred or pixelated their faces so as to render them unrecognizable. The only exception to this was a photograph tweeted during the WeMidwives chats of a smiling midwife who turned out to be a star of a reality TV show. Because the picture was tweeted by her employers and she was a public personality, I felt it was acceptable to use this image without pixelation or other attempts at de-identification.

These decisions relate primarily to my use of images as elicitation devices, and within this thesis. I apply somewhat more cautious rules when presenting at conferences or publishing in journals or other media with a larger audience.

Interview structure

In her Deleuze-inspired discussion of interviews, Mazzei (2013) suggests that,

Thinking the practice of interviewing with a Deleuzian ontology requires that I produce practices that are entangled in order to allow the collision of forces to join other enactments and assemblages. (2013, p. 738)

I attempted to design and carry out interviews that would create data from the collision of forces in the human and non-human (image and medium through which it was presented) participants, and where these collisions might produce new *agencements machiniques*. To this end, the individual and group interviews had very simple structures.

In all interviews (individual and group) I first ensured my interviewees had read the information about the research and research ethics I had provided, and answered any questions that arose. We then discussed the additional ethical issues outlined above, particular in relation to my use of images shared online by third parties and the need for interviewees to respect the anonymity of those whose tweets we would be discussing. In the group interviews with students, I also emphasised that they would need to respect each other's confidentiality. Once I had obtained their informed consent to continue with the interview, I recorded some limited demographic data, such as number of years qualified and practising (or studying) in the profession.

We then proceeded to the main part of the interview. During this, I showed the interviewees one image at a time. I asked them first to simply describe what they saw. Depending on what was said, I followed up on this question in a variety of ways. For example, if an interviewee described some aspects of the image in more detail than others, I would ask them why that part of the image seemed important to them. Alternatively, if an interviewee commented on the style or genre (e.g. comic strip or

photograph) of an image, I would ask them more relating to that, such as what purpose they thought the style served.

In the interviews with practitioner and educator professionals, if the image was one they had tweeted themselves, I asked why they had chosen to tweet it and whom they imagined would see it. If it was an image posted by another chat participant that they had retweeted, replied to or favourited, I asked them why they had interacted with it in the way they did. If an image was one the interviewee had not seen before, I would ask whether it was the kind of thing they would retweet or favourite, often leading to more general discussions about the qualities a tweeted image needed to have for the interviewee to decide to retweet it to their own follower network, or favourite it.

Interviewees did not always recall interacting with images and would sometimes be surprised that they had; this also led to discussion of why they retweeted or favourited images more generally.

We then discussed how they responded to the image or what it made them think. This frequently happened spontaneously, as a natural continuation of the discussion of the content of the image. However, if it did not, I would ask a question such as, 'Is this something you might use in your own practice?' If the image was one they had tweeted themselves, this often led to recollections of the activity depicted in the image, or further detail on their reasons for tweeting it. If it was tweeted by someone else, this sometimes led to broader discussions about what is or is not a valuable or appropriate image to tweet. In the group interviews with student professionals, this often led to

speculations about the context in which the images had been created or the reasons the chat participants might have had for tweeting them.

Depending on how much interviewees had to say about each image, we discussed between four and six images in each interview. Towards the end of each interview, I asked interviewees to think about all the images we had looked at and to comment on their effect in aggregate. If the question had not come up naturally during the interview, I also asked practitioner professionals whether they would use images such as the ones we were discussing in their interactions with newly-qualified professionals, or when supervising pre-service professionals on placements. During interviews with educator professionals, I explicitly asked about pedagogical potential of images as we discussed them.

Interviewees with practitioner and educator professionals

I conducted 15 interviews with practitioner and educator professionals. All of these were based in the United Kingdom or Ireland, with the exception of one teacher who had trained and worked in England, but who had left to teach in the United Arab Emirates four years previously and was currently based in Saudi Arabia. Some details of the participants are given in Table 3.1 (further detail has been withheld to avoid compromising interviewees' anonymity).

Identifier (gender)	Description
Midwife professionals	
M1 ²⁴ (F)	Midwife for 10 years (qualified as nurse 12 years ago). Regular WeMidwives participant: ~2100 followers.
M2 (F)	Midwife for 9 years. Regular WeMidwives participant: ~3500 followers.
M3/ME2 (F)	Midwife for 25 years, midwife educator for 21 years. Still practising as independent midwife. Occasional WeMidwives participant. Twitter for professional purposes: ~200 followers.
M4 (F)	Midwife for 44 years. Occasional WeMidwives participant: four Twitter accounts with between 400 and 1000 followers.
M5 (F)	Midwife for 14 years. Regular WeMidwives participant: ~1200 followers.
M6 (F)	Midwife for 10 years. Regular WeMidwives participant: ~1800 followers.
ME1 (F)	Qualified as midwife 21 years ago, midwife educator for 15 years. Did not participate in WeMidwives chats. Twitter for personal use only: <50 followers.
Teacher professionals	
T1 (M)	Religious, Moral and Philosophical Studies teacher ²⁵ for 15 years. Pedagoofriday facilitator: ~1800 followers.
T2 (M)	Science teacher for 12 years. Regular Pedagoofriday participant: 16.3K followers.
T3 (M)	Primary/history teacher for 7 years. Regular Pedagoofriday participant: ~900 followers.

²⁴ The identifiers indicate the profession (M for midwifery, T for teaching, ME for midwifery education, TE for teacher education) and assign each interviewee a unique number. M3 has the slightly different identifier M3/ME2 since she was both a practising midwife and university-based educator.

²⁵ Teachers are secondary-level teachers unless explicitly identified as working in the primary sector.

T4 (F)	History teacher for 12 years. Regular PedagooFriday participant: 15.1K followers.
T5 (F)	Art teacher for 11 years. Regular PedagooFriday participant: ~1800 followers.
T6 (M)	Primary teacher for 12 years. Regular PedagooFriday participant: ~2.7K followers
TE1 (M)	Taught English for five years; teacher educator for 7 years. No Twitter account.
TE2 (F)	Taught nursery/primary for six years; teacher educator for 12 years. Has Twitter account but does not use it.

Table 3.1: Practitioner and educator professional interviewees

For the interviews with practitioner professionals, I initially contacted chat participants I had identified through the analysis described in section 3.2 via Twitter. I approached participants who frequently interacted with images during the chats (i.e. those who were represented by circles with relatively large radii in Figures 3.2 and 3.3), but who did so in a range of different ways (as illustrated in Figure 3.5). For example, I had identified T1 as someone who tweeted his own images and replied to, retweeted and favoured images shared by others, while T3 was more likely to favourite than anything else. I invited them to take part in an interview via Skype²⁶, telephone or face-to-face. I had set up a blog describing my research and included a link in my initial approach so that potential interviewees could obtain background information about my research before deciding whether to reply to me.

²⁶A software application that allows voice- and video-over-internet communication.

Some of the chat participants I approached did not respond to me; some did, but were too busy to spend an hour being interviewed; others agreed but were unable to find time or did not respond to my emails attempting to arrange times.

Participant pursuit

Time, school and huge life things got in the way. (Potential interviewee #2)

In Figure 3.2, blue rectangles represent communications sent by me to a participant in the Pedagogofriday chats whom I hoped to interview. Red rectangles indicate communications sent by him to me.

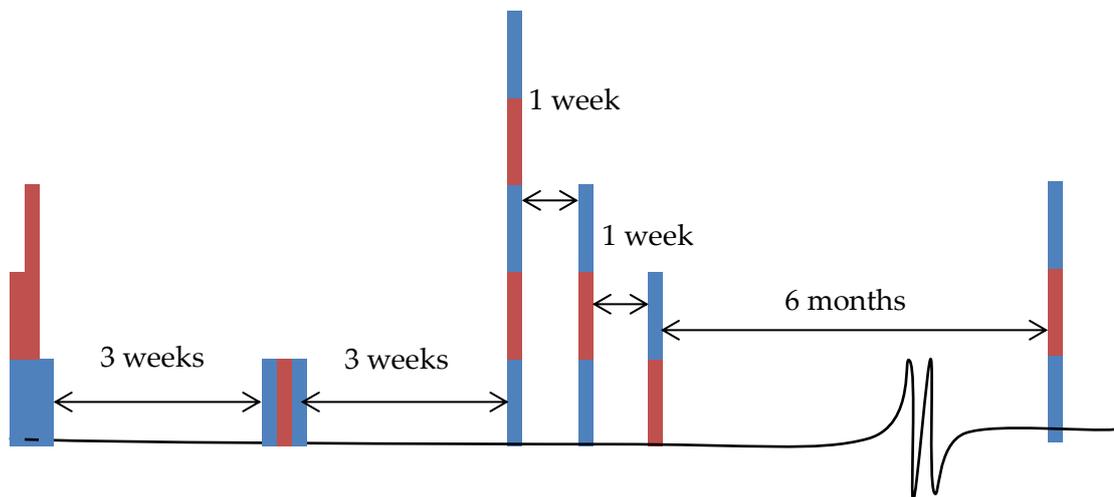


Figure 3.6 Participant pursuit

It might also be a chart of my emotional response, as every time it seemed as if we might set up an interview I grew happy and excited. In the periods in between I might well have been flat-lining, and there was definitely a real wobble around about two months before our final exchange, when I was beginning to wonder whether I would be able to recruit enough interviewees to make the project viable.

Details of the communications represented in Figure 3.6 are provided in Table 3.2.

Communication sent	Communication content
02/02/2015 12:54	Initial approach via Twitter
02/02/2015 22:47	Positive response via Twitter
03/02/2015 06:56	ANW tweets response with email
03/02/2015 21:27	ANW receives email
03/02/2015 21:27	ANW receives DM indicating email sent
04/02/2015 05:33	ANW sends email with detailed information and suggested interview times
23/02/2015 11:55	ANW sends follow-up email
24/02/2015 20:54	ANW receives email indicating continued interest and willingness to participate
25/02/2015 07:36	ANW replies with suggested dates
16/03/2015 15:03	ANW sends follow-up email
16/03/2015 15:49	<i>'Of course I'm available. How does next Monday at 12:30pm sound?'</i>
16/03/2015 18:03	<i>'That would be perfect, thanks! ...'</i>
16/03/2015 18:11	<i>'No problem. Skype is fine.'</i>
16/03/2015 18:16	<i>'Great, see you Monday then.'</i>
23/03/2015 12:41	<i>'Are you still OK to Skype around now? We can re-schedule if something's come up/you're too busy.'</i>
23/03/2015 12:51	<i>'Sorry, can we reschedule. I've got to do a lunch time duty. We're short today. Life as a Primary School Teacher! 12:15pm next Monday would be good. Is that ok?'</i>
23/03/2015 12:53	<i>'No problem, and yes 12.15 next Monday is fine for me. Have a good week.'</i>

30/03/2015 10:47	'Really sorry about this, but we're having network problems today at school. Apparently county has blocked Skype in Primary Schools - great move there from them. I've applied to get it unblocked, but we won't be able to conduct the interview. If you would like to send the questions via email I'd be happy to answer them.'
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Table 3.2: Exchanges leading up to abandoned interview

This is just one example of the difficulties that can occur when trying to recruit and arrange interviews with busy professionals, even when no travel is required. Indeed in many ways the challenge of recruitment felt like the biggest obstacle to achieving anything in this research. In the end, I was fairly successful in recruiting teachers into my research via Twitter alone, with more than half of those I approached agreeing and ultimately finding time to be interviewed. However, it proved harder to get responses from midwife chat participants. Fortunately for me, my first midwife interviewee enjoyed the experience enough that she encouraged some of her Twitter contacts to respond to my approaches.

Interviews with educator professionals

In contrast to the practitioner professional interviewees, I selected educator professionals to approach on the basis of personal contacts. I knew one of the midwife educators through shared academic experiences. She was aware of my research and actively sought involvement. She suggested I approach the other midwife educator (who worked in the same University as she did). This second midwife educator turned out to be an occasional participant in the WeMidwives chats. The two teacher educators worked at my home institution; I approached them as they were not

involved in my research or part of the research cluster with which I was affiliated.

They also represented both primary and secondary teaching.

All my interviews with educator professionals were conducted face-to-face, in teaching rooms or offices in their home institutions. While my professional/academic knowledge of three of these four educator professionals might have affected our interviews in some ways, I believe this did not compromise the research. Two of these four interviewees already knew I had been an academic in the past, and I explained my background to the two that did not. This minimized the impact of any perceived power asymmetry between them as experienced academics and me as a doctoral student. As with the practitioner professionals, I gained their informed consent before proceeding, and took care to discuss the extra ethical issues that arose with my use of images tweeted by (and sometimes of) third parties. Again, as with the practitioner professionals, I did not directly ask any interviewees, including the educator professionals, to tell me about their personal experiences, so there was no pressure to disclose that might have been inappropriate amongst professional/academic colleagues.

Interviewing by Skype

Mazzei (2013) suggests that 'more attention needs to be given to the *where* of the interview, and the *when* of the interview, and the *if* of the interview' (p. 739, original emphasis). In the following, I consider how the where and when of Skype impacted on the interviews I conducted.

Before starting to interview, having undertaken several Skype and phone *job* interviews in the past (both as applicant and selection panel member), I was worried by, for example, Skype's tendency to drop calls at the worst possible moments, its often poor sound quality, participants' levels of familiarity with the software and the difficulty in properly reading facial expressions and body language from a discretized, pixelated, jerky on-screen image. Once I started interviewing, it became clear that my fears would be realized. Yet, as the interviews progressed, I began to feel that they were qualitatively different from face-to-face interviews I had conducted during past research projects.

Table 3.3 outlines the circumstances in which each interview was conducted, and any technical difficulties that arose.

Interview	Mode/ medium	Interviewer device	Interviewee device	Interviewer location	Interviewee location	Technical issues
T1	Skype	Laptop (internal speaker)	Mobile phone	Kitchen	Front room, in the evening after dinner	Minor sound drop-outs, occasional slow file transfers
T2	Skype	Laptop (internal speaker)	Tablet	Home office	Home office, in the evening after dinner	Very low bandwidth, interviewer error when trying to send files, very slow file transfer
T3	Skype; landline and email	Desktop	Tablet, desktop, mobile phone	University office	Family room at home, late night for interviewee	Failure to successfully configure Skype on interviewee's tablet Skype on desktop with very poor call quality (freezing dropping out every 2-3 minutes) phone cable not long enough to allow

						interviewer to sit at her own computer
T4	Google hangouts	Laptop (external speakers)	Mobile phone	Kitchen	Front room, evening after putting kids to bed	Problems installing Google hangouts on laptop
T5	Face-to-face	Laptop	N/A	Teaching room	Teaching room, late afternoon	No technical problems
T6	Skype	Laptop (external speakers)	Tablet	Kitchen	Front room, evening after picking kids up from sports activities	Minor sound drop-outs, slow file transfers
M1	Skype	Laptop	Mobile phone	Kitchen	Kitchen, Sunday afternoon while baking banana bread	Low data rates leading to slow file transfer, interviewee unfamiliarity with Skype file transfer
M2	Skype	Desktop PC	iPad	University office	Front room, just	Interviewee unfamiliar

					returned from taking Japanese visitor to airport	with Skype file transfer Interviewee unable to return to Skype after clicking on an image
M3/ME2	Face-to-face	Laptop	Researcher's laptop plus interviewee's iPhone	Teaching room	Teaching room, during late lunch break	No power cable leading to screen blanking after a few seconds inactivity throughout interview (powersave mode) Unable to connect to wireless Interviewee unable to access own tweets
M4	Skype	Desktop PC	Desktop PC	University office	Office in workplace, at end of long day	Very poor sound quality (feedback and distortion)
M5	Skype	Desktop PC	Mobile phone	University office	Kitchen	Low data rates leading to very slow file transfers,

						interviewee unfamiliar with Skype file transfer
M6	Skype	Desktop PC	iPad	University office	Front room, after power hoops and yoga class	Interviewee unfamiliar with Skype file transfer, unable to return to face-to-face screen after clicking on an image to view it

Table 3.3: Arrangements and conditions of Skype interviews with practitioner professionals

My first Skype interview proceeded without any serious hitches. It was in the early evening and I was at home, using my laptop, set up on the kitchen table. My interviewee was in his front room, using his iPhone. I recorded using my newly-acquired Livescribe™ pen. Except for a few Skype sound drop-outs, all of single syllable length or shorter, it went well. I was right in thinking that Skype would inhibit attempts to read facial expressions and other body language. The image transmitted from his iPhone gave my interviewee's face the flat, strangely lit quality of a selfie combined with the block-fuzziness of limited bandwidth. But this was not the primary barrier to recording notes on non-verbal forms of communication: instead, it was the images themselves. After the preamble stage of the interview, we barely glanced at each other again until the final closing stages. We were both rapt in the images, and when I was not looking at the same image that my interviewee was (although on a different screen), I was usually taking notes.

This behaviour replicated itself in subsequent face-to-face as well as digitally-mediated interviews. During the former, the interviewees and I would sit close to each other, facing the same screen. Even when the discussion veered away from the images themselves, the screen itself commanded our attention. In addition, although I had imagined that interviewees might point at particular parts of images, or gesticulate while speaking, most of the time they seemed to sit quite still. The screens on phones and tablets are perhaps too small to warrant physical gestures towards particular regions of an image. There is also something about the larger screen of a laptop or desktop computer that induces a certain stillness: the stillness of the office worker,

chained to the computer, or perhaps the stillness of an audience, putting all of its energies into the attentive act. My observations of my interviewees were, therefore, almost entirely auditory (a somewhat strange departure from my ocularcentric analysis to date and the image focus of the interview itself).

I had to conduct my second interview (again using Skype) from my mother's house. Her old wireless router belonged to an era of slower, lower-bandwidth broadband. This resulted in very low fidelity sound; a substantial fraction of the frequencies that make up the richness of the human voice were not transmitted, lending my interviewee's voice a robotic, inorganic timbre. It also resulted in slow upload rates, meaning that sometimes long pauses occurred as we each waited, holding our breath, for an image to transmit. At such times we continued to gaze at our screens, with me watching a small circle rotate and my interviewee seeing first the same thing, then the image slowly unfolding, line by horizontal line.

At first, when these kinds of things happened during the interviews I felt a little embarrassed. I was very aware of how generous the interviewees were being in giving me their time; I was uncomfortable at wasting it, but found that it was often difficult to ask serious questions while we waited for files to upload, or for me to click through the directory-tree structure to find the file to send, or for them to locate the sent file.

However, slowly I began to realize that these lacunae might actually be a good thing. They were providing spaces where the various forces we were bringing into the interviews might interact and produce something new. Perhaps we had found a way to avoid the problems Deleuze observed about the pressure to constantly speak:

The problem is no longer getting people to express themselves, but providing little gaps of solitude and silence in which they might eventually find something to say. Repressive forces don't stop people from expressing themselves, but rather, force them to express themselves. What a relief to have nothing to say, the right to say nothing, because only then is there a chance of framing the rare, or ever rarer, the thing that might be worth saying. (Deleuze 1992, pp. 288–289)

Far from being awkward silences, they were moments when shared anticipation was a machine that we each plugged into, connecting us up in a completed circuit. Here is one example:

[21:00] I: I'm going to send you another image now and it's actually one that you tweeted – quite a while ago but that's my – I'm only using images from a – a – a from a particular period last year so

[pause of several seconds]

M5: It's not come through yet [21:22]

I: It should be going through now – it was still doing the sending symbol but now it looks

M5: the little circle thing is

I: yeah, it'll get there eventually [giggles]

M5: it's going round in a circle oh it's coming through now. [delighted] Oh yeah [21:40]

On occasion, one might sing to the other during a waiting period:

T1: Got it! [extemporising a melody] Do-do-do-do-do-do-doo, scan down to open. Everything goes slower on an iPhone ...

And sometimes, the casual chat during the forced wait while attaching and transmitting a file allowed for unexpected conversational lines of flight. The following example shows how my technical ineptitude led first to me making music to fill in the gap in the conversation, then to a conversational line-of-flight resulting in a strong expression of the interviewee's pride in being the subject of the interview:

I: OK I'll just start with the first one – and it's the usual by Skype thing – also I should say whilst I'm faffing around doing the Send Files thing thank you very

much for agreeing to this, and particularly for the – oh I hate Skype sometimes – I don't know if you've ever sent files via Skype but it defaults to the most bizarre place, and then you have to do you know through the directory, directory-tree, massively

T2: I've never done it, but I don't use Skype a lot

I: Yeah – ah, there we go, just have to wait for it at your end – [clicks tongue against roof of mouth to produce staccato, rhythmic pattering] – So you're on half term now?

T2: Yeah, just been with the family, went to West er West Yorkshire, somewhere just to see some friends, so we just got back today. So this is the bit in between me doing lots of jobs around the house and getting back from holiday. So you're filling up the bit in between.

I: Well thank you for spending your bit in between talking to me.

T2: Ah you're very welcome. Because when you approached me I thought it would be quite interesting to talk about it. Because it's been very interesting over the past kind of two years, it's kind of built up to the point where now I'm being invited to all sorts of things and being published in books and all sorts of stuff and it's all because of what we're doing online. And I guess you're the next thing you know. So people say [adopts dismissive tone of voice] "What's this Twitter thing about?" and I can say "Oh I was interviewed by this research student doing things on us for her PhD." So it's amazing where it's taken us.

Technological ineptitude and unfamiliarity also seemed to create a rather smooth space, in which the polarity of interviewer and interviewee was de-oriented, and we become collaborators in a shared endeavour, or the interviewee even became the one responsible for bringing calm and comfort:

I: Ok, so I don't want to take up too much of your time so I'll get started on the images. Now because I'm not used to using Google hangouts, is there a way for me to attach an image to send to you?

T4: Yes, go to screen share and you should be able to do it that way?

I: [puzzled] Screen share – can you tell me what the icon looks like for that?

T4: Not on a – no sorry –

I: Yep found it, good, found it. So, screen share, screen share [reading, puzzled] select a window to show in the video wall. Woo hoo. Right, so that means I need to

actually get the image up myself. So yeah the first one that I want you to um [laughing] arrggghh too many things, too many windows! [5:02]

T4: [laughing] Now you have to close all the windows, for me!

I: [laughing] Arrghh! Right, let me just get back to it. This is so – this is pathetic, I should be able to –

T4: [comforting] No, you're fine, you're fine – much worse things happen at sea.

I: Yeah, I know. I seem to be incapable of getting the screen share window to – there it is, OK. That's what I want. Start screen share.

T4: OK so now you're sharing with me.

These minor technical hitches seemed to be having an effect of reducing the distance between us. Our screens, which might have been barriers, instead became means of genuine, if digital, co-location. I thus came to feel that the digitally-mediated and image-focused interviews I conducted provided me with an advantage, rather than a disadvantage, in terms of developing rapport.

Group interviews with student professionals

Because I wanted to understand the potential impact on student professionals of encounters with images such as those I observed during the Twitter chats, I also held group interviews with undergraduates. Gaining access to these proved harder than I had expected, and in the end I conducted them face-to-face in whatever physical location we could manage. The interviews followed the structure described at the start of this section, starting with a discussion of confidentiality and anonymity, proceeding with the recording of some basic demographic data, and then going on to discussions based on a selection of images from the relevant chats.

Student midwives

I conducted a single group interview with six first-year midwifery students, towards the end of their first semester of study. I had gained access to the students at a single Scottish university after satisfying their Ethics Committee gatekeeper procedures. The programme leader invited me to talk to their undergraduate students and circulate information letters/invitations as they came together at two locations for an annual whole-cohort gathering. While many students (and indeed staff!) at these gatherings expressed interest, I only received one follow-up email, from a student who ultimately decided not to be interviewed. After two weeks, I asked the programme leader if she would circulate a reminder by email: this resulted in contact from one student, who persuaded five of her friends to join her.

Throughout this thesis, these students are referred to as SM1–6. All were female. Four (SM2 and SM4–6) had come to university directly from school, and were 18 years of age. SM1 (aged 22) had gone into secretarial work after school, but had decided to return to study and become a midwife after four years. SM3 (aged 25) had worked and become a mother, but had always intended to become a midwife. The timing in their studies meant that none of the student midwives who participated in the group interview had undertaken placements. However, SM1, SM2 and SM3 were the daughters of midwives; SM3 and SM5 had been their sisters' birthing partner, and SM3 had had two children herself, one by caesarean section. These students therefore had some experience of the realities and practicalities of birth that midwives have to deal with.

SM1 was aware of, and occasionally followed, the WeMidwives chats. However, she had never tweeted or otherwise interacted during the chats. None of the other midwifery students were previously aware of the chats.

Student teachers

Despite being located in a School of Education, student teachers proved particularly difficult to recruit. Multiple circulations of invitations to participate in research to first and second year education students via the institution's learning management system produced no volunteers. Following the advice of my supervisors, I approached the Director of Studies and asked if he could help; eventually, this led to four students agreeing to take part in a group interview. I also asked colleagues who were then engaged in first year tutorials to distribute flyers to their students. We were careful to ensure this happened at the end of their teaching, when students were least likely to perceive any advantage or disadvantage to their potential grades by their decision to volunteer for interview or not. This led to two more interviewees. All six were female.

I was unable to arrange a time that suited all six student teachers and so conducted two separate group interviews. The first was with two first-year students, henceforth referred to as ST1 and ST2. While they had seen each other in lectures the previous semester, they did not know each other well. This interview was conducted at the beginning of the students' second semester of study, before they had undertaken placements in schools. Both had come to university straight from school and were 18 years old. ST1 intended to teach English, ST2 intended to teach history. We carried out the interview in my office.

The second group interview was with four fourth-year students, henceforth referred to as ST3–ST6. All four were intending to be teachers of Religious, Moral and Philosophical Studies (RPMS). They had been studying together for some time and described themselves as knowing each other fairly well. As they were coming towards the end of their studies, these student teachers had experienced several placements. ST3 was a self-described mature student with two children of her own. ST4, ST5 and ST6 had commenced their degrees on leaving school and so were 21–22 years old. This interview was also conducted in my office.

The participants in these group interviews did not represent a broad cross-section of society. All were white British females. In the case of the student midwives, all six were attending their local university (that is, they had not moved in order to pursue their studies). In the case of the student teachers, only a narrow range of disciplines was represented, with a focus on humanities. While it might have been better to have sampled a broader range of disciplines, difficulties in recruitment meant that this was not possible. Thus the responses of students from other backgrounds, or specialising in other disciplines, are absent from the data generated in this thesis. However, as the aim of this thesis is to explore the pedagogical potential of the images shared in the Twitter chats, rather than map the range of possible student responses to those images, I do not consider this a serious limitation.

Analysing interviews

[A]ll writing responsive to Deleuze's principles, must then work against the fixing of a world in set concepts or a fixed, illusory world. (Williams 2013, p. 32)

The theoretical substrate described in the previous chapter had an important influence on my approach to analysing the interviews. It called for an alternative to thinking about the practice and experience of individual subjects. I wanted to avoid ‘the overly empiricist, optimistic, and even romantic notions of privileging and celebrating “voice,” as if interview data and disenfranchised voices can unequivocally and unambiguously “speak for themselves”’ (Torrance 2016, p. 4). I felt it would be inconsistent to try to construct or represent separate “voices” that assign categories of experience to particular professionals or student professionals. Instead, it seemed to make sense to focus on instantaneous configurations of intensities and flows, and to maintain in my treatment of the individual and group interviews the simultaneity and multiplicity that is evident in the online spaces.

It was also important that I avoid the ‘decontextualization and fragmentation of interview discourse into “codable” elements’ (Nespor and Barylske, 1991, p. 810).

Mazzei (2013) suggests,

[T]he voices of participants cannot be thought as emanating from an essentialist subject nor can they be separated from the enactment in which they are produced, an enactment among researcher-data-participants-theory-analysis. (2013, p. 732)

In my analysis, I did not attempt to construct individual voices that related holistic experiences, but rather used particular images as starting points, exploring the varied (and often varying) responses from across the interviews. I combined this with a sensitivity to difference and repetition that made me alert to images or interactions which might offer opportunities for the kind of synthesis that creates radical change (Deleuze 1994). I listened to the audio recordings of each interview multiple times. I

transcribed each interview and read them in parallel, selecting responses to the same (or similar) images. Like the chats and the interviews themselves, my subsequent engagement with the interviews could perhaps be conceived of as *agencements machiniques* in their own right, constellations of interacting components in which intensities flowed and dynamics emerged.

As such dynamics developed, I re-read transcripts looking for more detail, or for places where they were absent. I also wrote to think and analyse, using 'writing as a dynamic creative process' (Richardson and St Pierre 2005, p. 960), and viewing analysis as something 'emergent and experimental' (St Pierre and Jackson 2014, p. 717). Reading, and seeing, were also important parts of this creative analytical process. For example, when I came across the sentence, 'The act of seeing became an act of flight' in Alasdair Gray's *Lanark*, it reverberated with the acts of seeing that were happening in the chats and in the interviews. When I visited an exhibition of the work of Andy Warhol and William Morris, *Marilyn, Mao*, the *Electric Chair* series and Morris's repeating patterns made me think of repetition and difference in visual art²⁷, and its potential political functions, in new ways. And when I looked at the surface of the River Forth downstream from the bridge I cross every day, I saw a space that was both smooth and striated, and, in the complex interactions between downstream flow, upstream tide, varying depths and obstacles, a metaphor for the interviews themselves.

²⁷ In fact, Deleuze refers to Andy Warhol in the preface to *Difference and Repetition*.



Figure 3.7 The River Forth (downstream) viewed from the Old Bridge at Stirling

In this way, as Richardson and St Pierre describe it, 'I made accidental and fortuitous connections I could not foresee or control ... *Thought happened in the writing*' (2005, p. 970, original emphasis) and, for me, in the reading. Thought also happened in interactions and discussions with peers and colleagues.

Ultimately, my conceptualization of both the chats and the interactions with images as *agencements machiniques* meant that I was looking for evidence of circulating intensities, and forces that shaped the spaces and the flows. Simultaneously, I was sensitive to differences and repetitions in responses to particular images in the interviews, looking for how those might produce learning if someone was exposed to all of a series of responses. The results of these analyses are presented in Chapters 5–8.

3.4 Validity and value

Before moving on to discuss the outcomes of the different types of analysis I engaged in, it is worth touching upon questions of validity and value. The question of validity in qualitative research is one that is, again, giving rise to some degree of debate in the literature (e.g. Ceglowski et al. 2011; Goldacre 2013; Maxwell 2004; Torrance 2016; Walters et al. 2009).

To some extent, the current debates are re-visiting debates that occurred about 10–15 years ago, which led some to defend qualitative research by asserting that:

If the issues of reliability, validity, trustworthiness, quality and rigor are meant [sic] differentiating a 'good' from 'bad' research then testing and increasing the reliability, validity, trustworthiness, quality and rigor will be important to the research in any paradigm. (Golafshani 2003, p. 602)

This kind of attitude led to conceptions of validity in qualitative research that depend strongly on notions such as credibility (often presented as being achieved through triangulation), generalizability and researcher reflexivity.

However, I find this understanding of reliability and validity somewhat unsatisfactory. Things may be believable (and, indeed, believed) and yet be inaccurate or worse. It is not obvious to me that observations must be (immediately or easily) generalizable to be valuable. Indeed, our ability to recognize valid generalizability may itself be questionable: as Torrance suggests, qualitative researchers need to question 'the assumptions that micro-level investigations of social processes will inevitably throw light on macro-level social products and afford insights into processes of social change' (2016, p. 4). And while of course there is no questioning that, as a researcher, I am an

inextricable part of the creation of the “data” that I analyse into “findings,” one has to be careful of the kind of reflexivity that fails to acknowledge that ‘one’s subjectivity is shifting and contradictory – not stable, fixed and rigid’ (Richardson and St Pierre 2005).

Instead, I understand validity as comprising an internal coherence, in which methods and theoretical concepts mesh, and in which there are logical and demonstrable links between data (Twitter interactions, images, words) and my comments on them.

Although there are very different types of “data” in this study (including records of interactions with images online; the images themselves; words spoken during interviews; my own notes made during the interviews), similar issues arise in relation to the validity of both data and analysis in relation to all of them.

Twitter interactions: users and images

It may be worth noting that my study makes quantitative data subservient to qualitative analysis, in a reversal of what has become the usual positioning (Hesse-Biber 2010). The social network analysis described in section 3.2 might seem to be “easier” to validate than the qualitative data (images and words) on which the majority of my analysis is predicated. It is conceivable that my analysis could be replicated, were other researchers to gather and analyse data from the same two Twitter chats. However even these data, and the visualizations I created from them, are actually fluid and multiple, as are the “findings” that emerged from my interactions with them. By conceiving of the chats (and chat sessions) as *agencements machiniques*, I draw attention to this multiplicity and contingency. The participation of individuals in particular chat

sessions on particular days, and the sharing of particular images, are all highly contingent. If the same chat was run on a different day, different people would likely participate, as personal and professional demands on time vary. Whether a participant chooses to share an image may depend on the images they have already encountered, as well as on what images they have to hand (which will in turn depend on what device they are using to connect to the chat, where they happen to be at the time, whether they are connecting via broadband or phone network, and so on). Similar considerations would affect whether other participants choose to visibly interact with an image by retweeting it, favouriting it or commenting on it. Thus the same chats, repeated, would be unlikely to follow the same patterns of participation, image sharing or interaction with images.

Similarly, as noted in section 3.2, the visualizations I created are just a subset of the many that could be made. A decision not to use bimodal networks; a decision to use a different lay-out or clustering algorithm; a decision to use different software altogether – all would result in quite different images.

However, my analyses, and the approaches to data visualization I developed in the process, are not without value. One of the chief values of the visualizations is to emphasise the indirectness of what otherwise might be seen as connections between chat participants. While some chat participants might follow others, and may thus be part of “networks” of “connected” Twitter users, the data and analysis presented in section 3.2 show that the connections are in fact mediated by tweets (in this case, tweeted images). Users interact with digital objects (tweets) and not with each other.

This observation holds regardless of whether one studies a specific chat with specific participants.

To some extent, the second phase of data generation provided an internal validation of the processes developed in the first phase. It turned out that several of the candidate interviewees I had identified through the analysis described in section 3.2 were facilitators of these chats; facilitators of other chats; bloggers; contributors to professional magazines; or even authors of books on the use of social media in their respective professions. These were activities that I was not aware of until they were mentioned during interviews. Thus it seemed that the method I had developed for identifying potentially influential or important chat participants had some merit.

Similarly, the interviews with chat-participating professionals offered an opportunity to validate my selection of images from the chats. As noted above, I had attempted to select images that were somehow representative, both in terms of content and visual style, of the images typically shared in each chat. Most of the interviewees commented on how well they thought I had managed to do this; none suggested that I had missed any “important” types, or that I was misrepresenting the chats by choosing to present them through the images I selected.

Interview interactions: interviewees, images, interviewer

As with the Twitter chats, bringing the concept of *agencements machiniques* to bear on the interviews I conducted serves to emphasise the contingency of the words spoken during them. Each interview – and indeed each encounter with an image during an interview – was the actualization of just one of many possible virtual realities.

Similarly, my analysis and interpretation of the interviews is itself an actualization of just one of many possibilities. It is valid, in that it is logically self-consistent (at least I believe it is); but it is not the necessary or sole way in which the interviews could have been re-presented. Noting that my approach to Deleuze-informed pedagogies described in the previous chapter includes productivism (Massumi 2002), the same ideas form the substrate on which my analysis is conducted. Interpretation is, in this paradigm, a creative act, which generates its own realities.

As will be explored in Chapters 5–7, for the practitioner professionals, the weight of possibilities in the virtual space that constrains what might be actualized is shaped by certain forces or dynamics. These were spontaneously mentioned in almost every interview. For example, I never once asked about acknowledgement, but it was raised by all interviewees who participated in the chats. Thus there is only a small interpretive step from what was said during the interviews to my claim that acknowledgement is an important feature of chat participation, and perhaps a new norm of professionalism in the context of social media interactions.

While I have not engaged in wholesale member-checking, I have had some post-analysis validation of findings by a subset of interviewees and by other educator professionals. Some of the interviews covered what appeared to me to be rather sensitive topics (such as early personal experiences of work), or topics that might easily lead to the identification of interviewees. I checked with those interviewees both that I had produced recognizable, relatively faithful representations of their thoughts in my writing/conference presentations, and that they were comfortable that what I had

written/quoted would not risk their identification. As I checked back with them on these issues, M1, ME1, M3/ME2, T1 and TE1 expressed satisfaction that I had captured what they wanted to say.

In addition, the validity and value of the findings may be supported by the way in which they appear to resonate with educator professionals who were *not* involved in the research. Over the past year, I have presented aspects of the findings at several conferences and workshops. Educator professionals from teaching, midwifery and other health sciences at these presentations have commented on the relevance to their own contexts. As a result, the school of education at one English university has invited me to run workshops on using Twitter and participating in twitter chats for their students, and on using Twitter chats as pedagogical resources for their teaching staff. In addition, a midwife educator who is responsible for writing her university's social media use guidance for midwifery and nursing students attended a seminar I gave for the UK's Society for Research in Higher Education. Following this, she expressed interest in follow-up conversations to help her think about how those guidelines might be modified in future. These kinds of response indicate that the findings are simultaneously of interest and congruent with prior understandings already held by educator professionals.

3.5 Summary

This chapter has described the various approaches I adopted towards generating data to use in answering my research questions.

In it, I described how each method of data generation connects with the others.

The data visualizations presented in section 3.2 reinforce the notion that the chats may be usefully conceptualised as *agencements machiniques*.

The effect of the 'what' and 'where' of interviews (Mazzei 2013), and how they serendipitously benefited from being digitally mediated, was illustrated in section 3.3. I also discussed how a Deleuzian perspective shaped my approaches to analysing the interviews.

Finally, I reflected on the validity and value of my approaches and the findings they resulted in.

In the next chapter, I pick up on the need I felt to develop a better way to understand viewers' responses to images, starting with my own responses.

Chapter 4 – Seeing the images

*Learning is essentially concerned with signs. Signs are the object of a temporal apprenticeship, not of an abstract knowledge. To learn is to first of all consider an object, a substance, a being, as if it emitted signs to be deciphered, interpreted. There is no apprentice who is not “the Egyptologist” of **something**. One becomes a carpenter only by becoming sensitive to the signs of wood, a physician by becoming sensitive to the signs of disease ... Everything that teaches us something emits signs; every act of learning is an interpretation of signs or hieroglyphs. (Deleuze 2000, p. 3)*

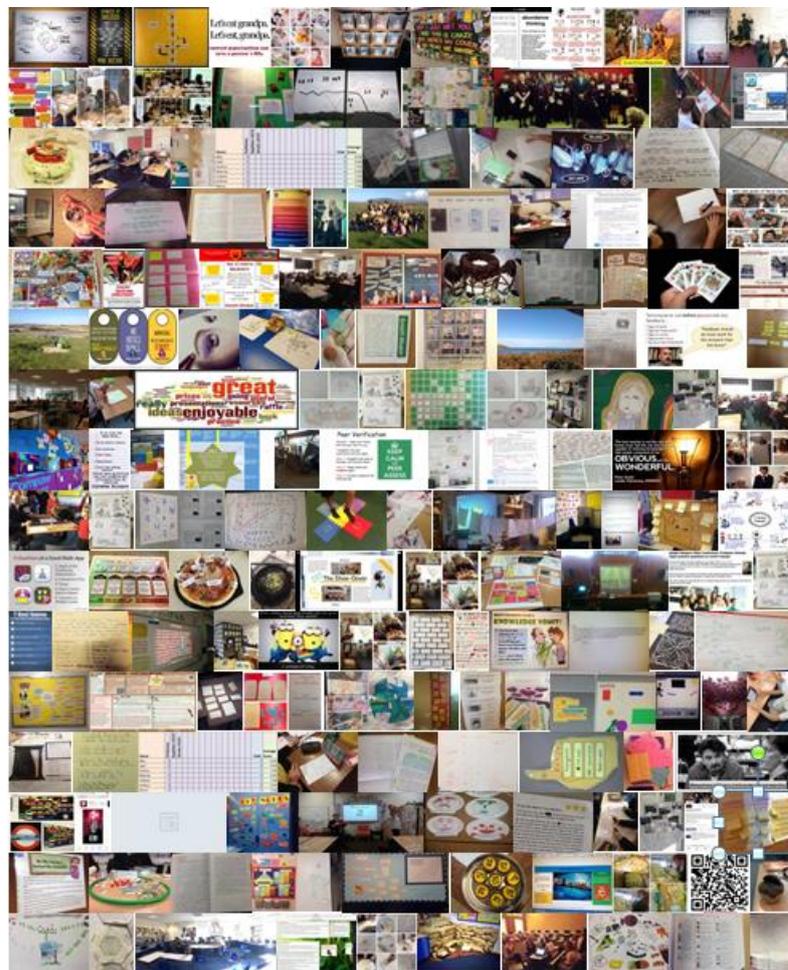


Figure 4.1: Images posted during the first three #pedagoofriday chats occurring in the observation period

In section 3.2, I described how I studied interactions and relations between images and tweeting professionals in the two Twitter chats. I showed differences in individuals’

habits or patterns of engagement with images, and described how I used these differences and patterns to identify professionals to approach for interview. Chapters 5–7 focus on data from these interviews. In this chapter, however, I focus on the images themselves; in a sense, this is where I begin to *see* the images.

This chapter continues to address the question,

What images are shared during the two sample chats?

It also begins to address the question,

What do the images do – how do they trigger flows of meaning?

I start by considering repetition and difference, describing my initial development of motifs among the images posted during the two series of Twitter conversations. I suggest that the potential for professional and pre-service learning offered by these images is likely to be highly contingent on such recurring motifs. Noting that some images seemed to have a stronger impact on me, and that these were not always the images that attracted high numbers of visible interactions in the chats, I then describe how I came to settle on a visual semiotics grounded in the traditions of iconography and iconology as a means of trying to understand the ways in which images and viewers co-create meanings. Finally, I consider the impact of the medium through which an image is presented on that interpretative process. I suggest that gaining an understanding of these processes is important to both understanding the potential for professional learning within the Twitter chats and for designing learning activities using such images in higher education contexts.

4.1 Repetition and difference

*The role of the imagination, or the mind which contemplates in its multiple and fragmented states, is to draw something new from repetition, to draw difference from it. For that matter, repetition is itself imaginary, since the imagination alone here forms the “moment” of the *vis repetitiva* from the point of view of constitution: it makes that which it contracts appear as elements or cases of repetition ... repetition is the differentiator of difference. (Deleuze 1994, pp. 100–101)*

In his critical analysis of *Difference and Repetition*, Williams (2013, p. 12) gives the example of an animal patrolling the perimeter of its territory as an illustration of Deleuze’s first type of repetition, that of passive habit (Deleuze 1994). The circuit is repeated over and over but is never the same; the animal learns its territory, the environment, the seasons by the differences and variations it experiences. Like that animal, I was prowling around the Twitter conversations, patrolling my research territory. As I built up the databases used to generate the visualizations developed in the preceding chapter, I was gradually, incrementally developing my sensitivity to the tweeted images themselves.

Initially, this sensitivity was predominantly to repetition within the images: repetition of content, repetition of colours, repetition of geometries, repetition of the practices and emotions being portrayed. My repeated looking, however, was something like the attentive patrolling of an animal, or the attention I paid to the river Forth as I crossed it each day. The gross features that initially dominated my consciousness (the river; the trees along the riverbank), once learned, became objects of automatic recognition, allowing a new awareness of difference (the exposed or submerged bank, smooth or troubled surface, reflections of clouds; the beech, the larch, the ash already turning

golden in August, the shock of flowers on brambles in December). While undertaking the observation and visualization part of the data collection, I began to see subtle differences such as variations around particular repeated visual motifs, as well as what seemed to be more substantial differences between the images associated with the two different hashtags.

In fact, every image posted during the Twitter chats was unique; and every time an image was viewed, by me or by my various research participants, on monitors, laptops, tablets or phones, was unique. From out of the virtual space of possible responses, a single one was actualized or contracted. Even when the same image was posted (and so viewed by me) multiple times, its sequencing within the flow of images, its accompanying text, its tweeter, the tweeters' followers and so the potential audience – its context – meant that a unique actualization or contraction from the virtual (Deleuze 1994) occurred. In the following, I refer to such unique generations of responses as “image-medium-viewer-response” actualizations.

Even when I, as researcher, returned to the same image, each of these actualizations was unique, as I moved from “Yes, this is familiar, it is like *that* one,” to “Yes, this is familiar, I remember *this* one,” and as each new viewing was within an expanded context of other images, other data, other thoughts. But this is not to say that nothing was carried through the series of tweeted images. Returning to the prowling animal, the salience of difference itself changes with repetition. My initial analysis was therefore driven by a developing sensitivity to rather broad differences. The early notes I made about images are a testament to this:

<i>Teacher-produced artefact</i>	<i>Mother and baby</i>
<i>Kid's work</i>	<i>Midwife</i>
<i>Kid's artwork</i>	<i>Homily</i>
<i>Classroom scene</i>	<i>A man!</i>
<i>Kids outside</i>	<i>Baby</i>
<i>Post-it notes</i>	

As the number of image-medium-Anna-response actualizations increased, both through repeated returns to images already viewed and through encounters with newly-posted images, my notes evolved:

<i>Reading suggestions corridor display, coloured sugar paper</i>	<i>Madonna and child – dark, illuminated – icon. Beautiful!</i>
<i>Kid's hand-written work, lined paper, text readable</i>	<i>Smiling midwife, hospital</i>
<i>Photo-montage of pencil drawings and text, mounted/displayed</i>	<i>Homily – italic text, embroidered flowers, pastel and cream</i>
<i>Empty classroom, illuminated screen – dark!</i>	<i>A man!</i>
<i>Primary-age children outdoors – blue sky, green landscape</i>	<i>Baby²⁸</i>
<i>Post-it notes (yellow), text illegible, rectilinear/ordered</i>	

²⁸ I admit my notes around the “man” and “baby” pictures remained rather undifferentiated, although for very different reasons. The former was the only picture of a man posted during the entire observation period, so needed no elaborate description to call to mind. The latter – well, I find babies rather undifferentiable.

Visual motifs and emerging dynamics

The key elements of the images I found myself noting were typically content, colour/contrast, visual texture and geometry.

As described in chapter 3, in terms of content, images posted with the hashtag #wemidwives were dominated by images of mothers and babies; uplifting images and quotations; images advocating particular midwifery practices; and images of midwives.

Images posted with the hashtag #pedagoofriday were dominated by teacher-produced artefacts such as corridor displays and usable resources; work produced by students (sometimes with the teacher's ticks and comments visible); students engaged in activities in classrooms and outdoors; and empty classroom scenes. In marked contrast with the frequent images of practitioners posted during the WeMidwives chats, only two of the PedagooFriday images included teachers.

I also felt there were differences between the two groups in terms of the visual styles of the images. Images posted during the midwives' chats were sometimes almost iconic, with a religious tone that I referred to in my notes as "Madonna-and-child" and "angelic midwife." They also tended to show natural, soft colours such as pastels and earth tones. Their geometries were characterized by curves and arcs, with a deliberate softening of text through the use of materials such as handmade paper or embroidered cloth. Blank spaces were allowed within their images.

All these features contrasted with the images posted during the teachers' conversation. Here, printed text or children's sometimes spidery handwriting predominated, displayed in the rectangles and squares of exercise book pages and post-it notes. The colours tended to acid or bright – post-it notes and sugar paper – or the buff of display backgrounds and notebook pages. Most images showed flat surfaces, such as paper-based displays mounted on corridor walls, posters on doors or sheets of paper on tables. Of course there were exceptions to this, such as images of children and the surprisingly high number of images of cakes. Very few images included blank space. Instead, the rectangular borders of the images were packed full and sometimes overflowing.

Despite the uniqueness of each actualization, my imagination saw various lines of repetition (Deleuze 1994, p. 100): motifs that seemed to characterize the images posted in the two series of chats. I began to speculate as to the dynamics that these motifs might illuminate and the work that they might do: values, shared practice, relations/relationships, celebration, self-congratulation. In particular, I noted the frequency of expressions of solidarity, comfort, pride in shared values among the midwives. This led me to wonder what might be responsible for the recurrence of such images: could they be symptoms of high pressure and low morale, resulting in a need to re-moralize?

I began to speculate as to whether and how these different recurring motifs, and different uses of colour, font, and layout might impact on the potential for professional learning within the chats, and for pedagogical uses of images in higher education

contexts. The content of the images might constrain as well as open up pedagogical possibilities: repeated presence might reinforce particular understandings, perhaps creating lines of articulation; absence might be thought of as a reduction of the virtual space of potential meaning; and difference might potentially trigger lines of flight.

Asking why

However, at the same time, I became increasingly aware of differences in the *impact* of images on both the professionals viewing them during the Twitter chats and myself as I conducted my research. As noted in the preceding chapter, some images seemed to provoke stronger (visible) responses from chat participants. Some images were favoured and retweeted far more often than others, and a few seemed to elicit extended conversational threads (although most did not). While I viewed all images posted with the relevant hashtags, and did so with deliberate attention, I found myself beginning to glance only briefly at some images while concentrating more on, and repeatedly going back to, others. With many images, I lingered long enough only to make a note describing it as simply “classroom scene”, “teacher-produced artefact” or “student’s work”, for example, or “smiling midwife”, “baby”, “mother.” Some, however, struck me as more powerful: sometimes more beautiful, sometimes more shocking, sometimes more eloquent. My responses seemed to illustrate what Massumi refers to as ‘*the primacy of the affective in image reception*’ (1995, p. 84, original emphasis).

I also, however, rather rapidly found myself becoming quite judgemental, initially with respect to the images posted with the hashtag #pedagoofriday. Why so many post-it

notes? Why so rectilinear? Why so did so many resources feature “growth mindset” ideas²⁹ (Dweck 2012)? As time went on I realized I was becoming equally judgemental about images posted with the hashtag #wemidwives. Why so many affirmative words and phrases (the very fact I noted these as “homilies” belies a certain impatience with them)? Why did some images evoke such responses in me? And equally, what was it about other images that made me stop and smile for the beauty of them?

As well as reflecting on my own responses, I returned to the question of why some images seemed to evoke stronger or more widespread responses than others among the Twitter conversation participants. Certain concepts seemed to trend at various times. For example, Dweck’s “growth mindset” (2012) flourished on PedagogooFridays during my observation, and “skin-to-skin”³⁰ (Moore et al. 2007) was popular in the WeMidwives chats. However, this variation in visible responses did not seem to be entirely on the basis of content. For example, one Bloom’s taxonomy³¹ image elicited hundreds of interactions, while another gained only two; one image of a compassion-related homily sparked an extended series of responses, while another remained unanswered and un-retweeted.

Added to this was my own response to the conversation participants’ responses, which was also becoming more judgemental as I paid more attention to the images. As I did, I saw both more and more, and less and less, in them. For example, the immense

²⁹ Dweck’s “growth” and “fixed” mindsets refer to mental positions in which intelligence and talent are seen as open to development or fixed, respectively (Dweck 2012).

³⁰ Skin-to-skin refers to the practice of aiming for direct contact between mother and naked baby immediately after birth.

³¹ Bloom’s taxonomy describes increasingly sophisticated levels of thinking and can be used to characterise learning activities and learning outcomes.

popularity of that particular Bloom's taxonomy image irritated me: in my various formal and informal academic development roles, I had seen how such taxonomies could become recipes or formulae that trivialized the complexity of learning and teaching, and I resented its wildfire-like spread. In contrast, some images that struck me as extremely powerful seemed to remain unnoticed, or at any rate unreacted to. If these images had the power to produce such surprisingly personal responses in me, when I was approaching them both as an outsider to the professions and as a nominally scholarly observer, what kind of responses might they produce in professionals and chat participants?

It seemed to me that the relative power of different images to attract attention or elicit a strong response would also be important in determining their potential for contributing to learning. If they were, indeed, machines that could be plugged into to form *agencements machiniques* (Deleuze and Guattari 1988), then perhaps their relative power to produce flows of affect would influence the likelihood with which viewers might critically engage with, and potentially learn from, them.

In order to explore this properly, I realized I needed a way to analyse the impact of images: that is, I needed a language with which to describe the actualization of image-medium-viewer-response. I needed to learn how to see, and talk about, the images in a more rigorous and theoretically-informed way.

4.2 Reading images

It may happen that a sensuous [impression or] quality gives us a strange joy at the same time as it emits a kind of imperative. Thus experienced, the quality no longer

appears as a property of the object that now possesses it, but as the sign of an altogether different object that we must try to decipher, at the cost of an effort that always risks failure. It is as if the quality enveloped, imprisoned the soul of an object other than the one it now designates. We "develop" this quality, this sensuous impression, like a tiny Japanese paper that opens under water and releases the captive form. (Deleuze 2000, p. 11)

As I explore image-medium-viewer-response actualizations in more detail in this section, I focus on four images, two from each of the two series of chats. Each image evoked a strong response in me; they also form what I saw as two compositionally similar pairs.

The first of these pairs, which I thought of as "corridor images," is shown in Figure 4.2. Several of the images observed in this study feature corridors, but these two stood out in their positioning of the viewer as looking straight down the corridor, as at the opening of a tunnel. The image on the left was posted with the hashtag #wemidwives. It depicts the head and shoulders of a uniformed midwife, standing in the foreground of a strip-lit hospital corridor. It attracted only one retweet and three favourites, a low response rate. This seemed odd to me, as I found it a particularly striking image. The young midwife had such a warm smile.



Figure 4.2: Two corridor images

The image on the right of Figure 4.2 was posted with the hashtag #pedagoofriday. It depicts stylized paper poppy heads, flat with two symmetric petals, suspended in a net or some transparent material below fluorescent lights along the ceiling of a corridor. Close attention reveals that the poppies are covered with inscriptions, but the distance and resolution means that they are illegible. It attracted four comments, 18 retweets and 24 favourites; approximately double the average for #pedagoofriday images, but far fewer than the Bloom's taxonomy wheel mentioned above, which attracted 766 separate interactions. Again, I found this to be a very powerful image, one that evoked in me feelings approaching pathos and hope, but one that also intimated something ominous. It also struck me as unusual among the #pedagoofriday images in what I felt was a compositional, aesthetic beauty.

The second pair of images I shall use as examples in this chapter is shown in Figure 4.3. While the images shown in Figure 4.2 might both appear to be “candid” photographic shots, both of these are overtly edited and produced. The image on the left was tweeted with the hashtag #wemidwives. It depicts a small statue of a woman cradling a baby in her right arm, with her knees drawn up in front of her. The statue is placed on a surface to the right of a stack of old, worn-looking books. The image has been edited so that text floats about the books.³² It attracted one comment, six retweets and seven favourites, a fairly typical number of interactions for an image posted during a WeMidwives chat. The one comment simply thanked the tweeter for posting it.

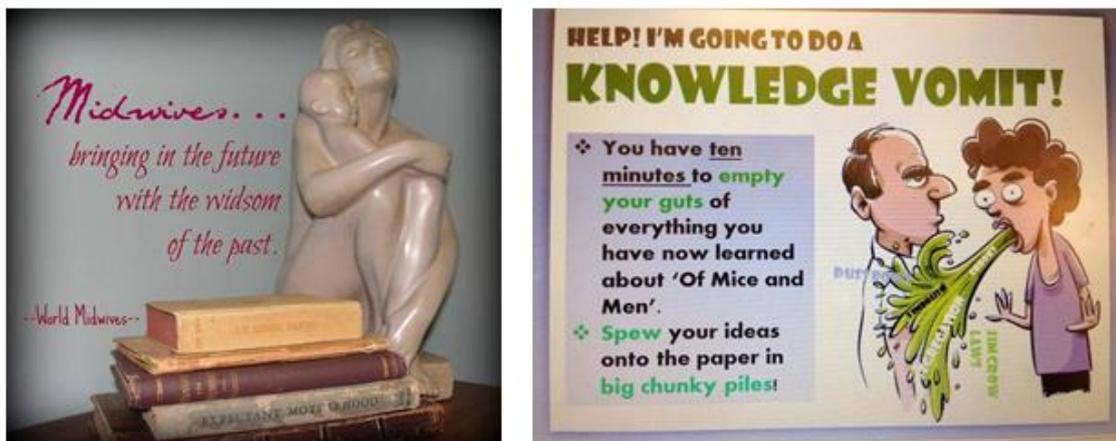


Figure 4.3: Two images combining text and graphics

The image on the right of Figure 4.3 was tweeted with the hashtag #pedagoofriday. It is an apparently unedited photograph of a teacher-produced teaching artefact: instructions to students at the start of an in-class exercise, a poster either displayed on a

³² It is perhaps worth noting that of these four images, this one did not initially evoke a strong response from me – indeed I was almost dismissive of it, putting it in the subconscious category of “homily” and adding nothing to similar images I had seen before. It is hard to be absolutely certain, but both my memory and my notes suggest I did not even see the statue on the right until I used the image in an interview and heard it mentioned in the midwife’s offered description.

wall or lying on a flat surface such as a desk. Like the image on the left, it consists of a combination of text and graphical imagery. The text consists of a heading, stretching across the width of the image, below which lies instructions to students regarding a short learning activity, which occupy the left-hand side of the image. On the right, a cartoon image depicts an adult male (teacher? doctor? parent?) standing in the path of (or possibly behind) a stream of vomit exiting the mouth of a young person of indeterminate sex. The vomit includes words and phrases. It attracted 51 retweets, 65 favourites and 6 comments, putting it in the top 4% of images in terms of the number of visible interactions attracted. It left me rather cross and a little upset, offended on behalf of both *Of Mice and Men* and the students who read it.

Why did these images elicit these responses from me – pleasure alloyed with doubt, sadness tinged with hope and fear, irritation, and anger? And why were the visible responses to the images made online so different to mine?

Four approaches to analysing images

In the following, I describe my efforts to seek a way of understanding the personal, affective responses produced in each of these actualizations between me and the images, between Twitter conversation participants and images, and ultimately between interviewees and images.

Reactions such as those I experienced and describe above made descriptions based on content, colour, geometry and light alone seem inadequate. Such descriptions did not seem to provide accounts of what I was actually *seeing* in each viewing. Drawing on

the concept of the 'good eye' (Rogoff 1998, p. 17), Rose describes a kind of 'visual connoisseurship' (2007, p. 48) that allows one to appreciate the impact of images. She suggests breaking down compositionality into a range of components: content, colour, spatial organization, light and 'expressive content' (ibid., p. 49). This last component includes both descriptions of the apparent behaviour or feelings of human/animal subjects depicted in the image, but also descriptions of the mood produced in the viewer by the image. Reflecting on the preliminary analysis described above, it seemed that I had naturally arrived at this kind of compositional breakdown, identifying the various compositional elements and becoming sensitive to expressive content or emotional response. However, I lacked a means to *account* for this last effect. This led me to investigate already-established methodologies for analysing images.

As I did, I found a great deal more complexity and insight directly relevant to my study than I had anticipated. I began to see that I would draw substantially upon these insights as I analysed the responses of practitioner and student professionals to images encountered in my interviews. For this reason, I have chosen to devote an extended discussion to these theories and how I worked with them as a starting point to "see" the images. In the following, I draw on overviews presented by Kress and van Leeuwen (1996), Margolis and Pauwels (2011) and Rose (2007), to describe four different approaches to the analysis of visual images in the social sciences: content analysis, structuralist visual semiotics, iconography/iconology and visual social semiotics. I highlight features of these approaches that make them appropriate and inappropriate to the task of drawing out the complexity of image-medium-viewer-

response actualizations. Whilst ultimately settling on visual social semiotics, my explorations of the other approaches were important in defining what it was I sought to understand.

Content analysis

Content analysis is a quantitative approach that compares the relative frequency of visual representations of particular classes of people, actions, things, situations, etc. (Bell 2001). It is often applied to large numbers of images; it is quantitative in nature, relies on predetermined categories and focuses on the image alone, rather than image-viewer-response actualizations. In relation to the images shown in Figures 4.2 and 4.3, one might choose categories such as the fraction of images depicting young women facing the viewer; the fraction of images depicting poppies; the numbers of apparently candid and explicitly edited images; the number of images featuring three dimensional objects; the numbers of high and low contrast images; and so on. Clearly, the choice of category depends strongly on what a researcher already believes to be important features of images.

Because of this, content analysis does not provide a good tool for my analysis. It does not, in itself, seek to provide an explanation for the apparent power (or lack of it) of an image on a particular viewer, at a particular moment. While I am, indeed, interested in the relative frequency of the depiction of certain objects such as post-it notes, corridor displays, midwives, mothers and men, this interest is precisely because I want to understand the relationships between producer, viewer and depicted participants, and how meaning (and hence the potential for learning) is generated in these relationships.

Structural visual semiotics

Unlike content analysis, structural visual semiotics takes as its starting point the assumption that visual images form a semiotic (meaning-bearing or meaning-making) system. This type of visual semiotics was primarily developed by Barthes (1967; 1977; 1981; 2006) in relation to photographic images, but the central concepts can be applied to other types of image.

There are two binaries at the heart of structural visual semiotics: denotative and connotative meaning, and Barthes's concepts of *studium* and *punctum*.

The distinction between denotative and connotative meaning (Barthes 2006) allows structural visual semiotics to explore the values, ideas and concepts that the things represented in an image "stand for" in a way that is not open to content analysis. For example, for a Western viewer with knowledge of the symbolism of the poppy, with Remembrance Day 2014 approaching, the image on the right-hand side of Figure 4.2 "stands for" remembrance, bravery, loss of life, the horrors of trench warfare, and so on.

Such association-loaded images may do more than provoke explicit emotional responses. Indeed, much of Barthes's empirical work highlights how photographic images can serve particularly strong ideological functions. They may, for example, legitimate the status quo or convey a political opinion or agenda as fact because they naturalize their connotative meaning. That is, they mask connotative meaning behind or within the denotative, allowing the viewer to think they are simply reading the meaning rather than having it forced upon them. As will be seen in Chapters 7 and 8,

comments made during the interviews I conducted give grounds to believe that some of the images encountered in the Twitter chats serve ideological functions; for example, asserting particular characteristics of midwives (compassion and kindness) or midwifery (as an evidence-based profession). The image of the midwife shown in Figure 4.2, which presents a midwife in a particular light, may be one example.

However, Barthes's treatment of connotation is not unproblematic. To a great extent, he assumed an 'unwritten dictionary known to everyone who is at all exposed to the mass media' and 'a cultural lexicon of technical effects' (van Leeuwen 2001, p. 98): codes that allow the viewer to straightforwardly interpret compositional components such as pose/gaze and lighting/framing. What is more, structural semiotics views these codes in a relatively rigid way. As Jewitt and Oyama (2001) put it, '[o]nce two or more people have mastered the same code ... they would be able to connect the same meanings to the same sounds or graphic patterns and hence be able to understand each other' (p. 134). But this is precisely the level of interpretation and response that I was hoping to elucidate.

The second binary of studium and punctum is an attempt to account for the power of certain (photographic) images, and thus may be seen as a means to address this additional level of interpretation. A photograph's studium is the effect it has on a viewer due to the subject's *presumed* interest for that viewer. Barthes (1981) describes it as 'an *average* effect, almost from a certain training' (p. 25, original emphasis).

Punctum, on the other hand, describes whatever it is about a photograph that makes it

arresting. In Barthes's words, punctum is what 'rises from the scene, shoots out of it like an arrow, and pierces me' (p. 26).

Although the notion of punctum might initially seem ideal to explain the capacity of images such as those shown in Figures 4.2 and 4.3 to evoke strong responses in me or in others, there are some reasons to feel it is not entirely appropriate for use here.

First, Barthes suggests that punctum relies on accidental (or at least incidental) features of images. While Barthes's work focused on photographic images that had been deliberately constructed such as those in advertisements and film, he describes punctum as 'a cast of dice ... that accident which pricks me' (Barthes 1981, p. 49), giving the example of nuns appearing in Koen Wessing's photograph of soldiers on a Nicaraguan street (ibid., pp. 42–44); an appearance he assumes to be an unintended component of the image.

This may make it difficult to apply to highly-edited photographic images such as that shown on the left-hand side of Figure 4.3, or non-photographic, deliberately constructed images of equally deliberately constructed teaching tools such as that shown on the right-hand side. Indeed, what aroused in me a strong response in the "knowledge vomit" image shown in Figure 4.3 were precisely those features that the creator intended to include: the juxtaposition of literary learning and understanding with the vomit graphic and the highlighted words '*guts*,' '*spew*' and '*chunky piles*.'

Equally, what strikes me about the image of the midwife in Figure 4.2 is the smiling midwife, not the incidental features of the image such as the distant figure in the

background or the notices and posters fixed to the corridor walls. Even more, I find the image of the poppies suspended in the corridor both aesthetically and poetically stunning, so much so that I continue to return to it again and again. There is, for me, no dissonance such as that between soldiers and nuns in either of these images, and yet I find they do, indeed, pierce me.

There are other aspects of structural visual semiotics that made me reluctant to use it. For example, the binary separation of the signifier and the signified – the denotative and connotative meanings – is open to question. It may be that there is nothing in an image that can be seen and understood without some sort of code, rendering the denotative meaning partially determined by the connotative, and the connotative meaning shaped by the denotative: ‘the signifier conveys the signification of the sign’ (Oyama 1999, p. 58). This is particularly pertinent given that I am seeking to understand how culturally-uninitiated students, as well as initiated professionals, respond to particular images.

Finally, the structuralist origins of Barthesian semiotics are at odds with the post-structuralist theoretical perspective framing this work. The reliance on binaries in particular is inconsistent with an approach drawing heavily on a Deleuzian ontology of immanence and difference, in which all things are connected through difference and the virtual. For these reasons, although the concept of punctum helped me articulate something about the impact of particular images, I felt I needed to find an alternative to this approach.

Iconography/iconology

As I noted in section 4.1 above, I had already been struck by the icon-like composition of some of the images posted with the #wemidwives hashtag. Both of the images posted with this hashtag in Figures 4.2 and 4.3 are examples of this. In Figure 4.2, the midwife is smiling, attractive, almost glowing; her appearance has echoes of the angelic or Virginal in the tradition of 18th century Dutch religious art or, perhaps even closer, in the work of American artist Abbott Handerson Thayer³³. Similarly, the statue on the right-hand side of the first image in Figure 4.3 has echoes of church statuary depicting Madonna and child, and the smooth, ivory-coloured stone seemed to me to indicate serenity or purity. Other images tweeted with this hashtag showed midwives with light shining out from behind them. The repetition of images of certain objects, such as Pinard stethoscopes for midwives and post-it notes for teachers, seemed to confer almost totem-like status. It therefore seemed that a visual analysis approach drawing from the art historical traditions of iconography might prove useful.

Iconography is the study of images with the aim of recognizing and characterizing visual motifs. Like structural visual semiotics, iconography focuses on a “visual lexis,” that is, the people, places, things and situations depicted in images. However, unlike traditional semiotics, iconography also ‘pays attention to the context in which the image is produced and circulated, and to how and why cultural meanings and their visual expression come about historically’ (van Leeuwen 2001, p. 92). Iconology extends iconography by adding a critical social element to the analysis. Originating in the art historical methods developed by Panofsky (Panofsky and Drechsel 1970;

³³ For examples of Thayer’s work, see <https://americanart.si.edu/exhibitions/online/thayer/>

Panofsky 1972), it is keenly aware of the cultural dependence of both intended and recognized meanings. It posits three layers of meaning: representational meaning, iconographical symbolism, and iconological symbolism. Although deriving from a critical tradition, iconology can be used in a way that is consistent with a Deleuze-inspired pedagogy of desire (Zembylas 2007a; Zembylas 2007b). That is, it can be used to develop a productive criticality that seeks to identify the forces and intensities which produce motifs and visual practices.

Representational meaning

Representational meaning is similar to denotation in structural semiotics. However, iconology acknowledges that even apparently straightforward visual elements are seen in a cultural context, so that some conventions need to be known that are separate from acts of meaning-making. For example, I looked at the image on the left-hand side of Figure 4.2 and saw a midwife. This is an act of ascription, rather than interpretation in the sense of drawing meaning from the image. However, it relies on my recognition of the midwife's uniform; I am aware of a cultural convention that says midwives wear uniforms like this. In other cultures, midwives might wear very different uniforms or no uniform at all, meaning this ascription is not obvious or unproblematic for all potential viewers.

Similarly, I saw the flat, red paper shapes in the image on the right-hand side of Figure 4.3 as poppies because they are replicas of the Remembrance Day poppies sold in the UK, not because they are, or even look like, real poppies. Not all countries/cultures use

this stylized form of the poppy³⁴; there is a requirement for some pre-existing cultural knowledge even to recognize the elements of this image for what they are.

Thus iconography explicitly allows for differing socio-cultural experiences. It is sensitive to the fact that there is no universal visual lexicon. In this way, it appears to be consistent with a study such as the present one, in which the views of the researcher, and those of novices may be substantially different to those of experts, and in which different professional cultures may give rise to different habits of reading particular images.

Iconographers view representational meaning as being established through a range of mechanisms, including personal experience (e.g. the viewer has seen this before) and reference to other pictures with similar content (Hermerén 1969). Representational meaning may thus be established through a process that sounds very much like the passive syntheses of repetition in habit and memory described by Deleuze (1994).

Iconographical symbolism

The second level of meaning, iconographical symbolism, refers to ideas and concepts attached to the particular person, thing or place being represented. The symbols involved in creating this layer of meaning may be abstract or figurative. The former might be equated with, for example, brand logos, or in the case of the present data, perhaps the hashtags associated with the images. The latter involves apparently natural symbols that are in fact being used analogically. An example drawn from the

³⁴ I remember the shock I experienced on my first Remembrance Day in Australia, seeing poppies for sale that actually did look like real poppies.

current data might be the use of cartoon bluebirds to represent the WeMidwives community, which appear as the avatar of the @WeMidwives user account and on all images posted as calls to join in the chats. The symbolism here may be that midwives (like bluebirds) are associated with and maybe even responsible for the bringing of happiness.

The poppies of the image on the right-hand side of Figure 4.2 also provide a clear example of iconographical symbolism. Once a viewer has recognized the poppies as replicas of Remembrance Day poppies, they are freighted with associations such as war, courage, death and remembrance.

The iconographical symbolism of the mother and child in the left hand image of Figure 4.3 is also an important element of the image. While on one level the statue may be a literal reference to the work of the midwife, it simultaneously draws on a long-established religious artistic tradition that invests it with spiritual overtones. Likewise, the old books to the left of the statue lend weight to and reassert the notion of the wisdom of the past made explicit in the text. That is, they do so until one looks more closely: the *Manual of Midwifery* (Barnes 1883) may be a nod to the long history of the profession, but the meaning of the supremacy of *Le Livre Blanc*³⁵, positioned at the top of the pile, is somewhat opaque.

³⁵ It is not possible to tell from the tweeted image whether this is a copy of Cocteau's *Le Livre Blanc* or an aged example of the *Livres Blancs* produced by the French Government to inform the public before a decision is made.

Iconological symbolism

The level of iconological symbolism is that at which the analyst attempts to interpret the image and its iconographical symbolism in a wider context and at a deeper level.

According to Panofsky, to analyse iconological symbolism is to 'ascertain those underlying principles which reveal the basic attitude of a nation, a period, a class, a religious or philosophical persuasion' (Panofsky and Drechsel 1970). This is consistent with the development of criticality towards the sociomaterial forces and intensities (Zembylas 2007a) that shape visual practices.

In order to identify such intensities, the analyst must read images as autobiographical, psycho-analytical, theological, philosophical etc.; that is, it is the level at which the analyst brings an explicit lens to the interpretation. Importantly for the present study, iconology admits that the image-producer may not be conscious of these attitudes:

[W]e deal with the work of art as a symptom of something else which expresses itself in a countless variety of other symptoms, and we interpret its compositional and iconographic features as ... evidence of this 'something else'. The discovery and interpretation of these 'symbolical' values (which are often unknown to the artist himself and may even emphatically differ from what he consciously intended to express) is the object of 'iconology.' (Panofsky and Drechsel 1970, p. 56)

Given the aim of this thesis is to explore how critical engagement with Twitter images might help prepare students for future professional lives, the iconological level of analysis seemed promising.

For example, the large number of tweets featuring teaching tools and usable resources based on Bloom's taxonomy (Anderson et al. 2001) and Dweck's growth mindset (Dweck 2012) gave an impression that these frameworks had in some sense become

iconic. Similarly, DIRT³⁶ (@Chilledu 2014) resources were both frequent and apparently popular during my observations. Exactly which frameworks recurred seemed to vary with time; neither Bloom's taxonomy nor the growth mindset had appeared during my earlier pilot study, which instead had seen a flood of images referring to the SOLO taxonomy³⁷ (Biggs and Collis 1982). However, the apparent enduring popularity of frameworks for classifying levels of thinking, and for pedagogical approaches based on self-improvement through positivity and reflection, may indicate something about the forces and intensities currently shaping teacher cultures.

However, iconology's recognition of the social context of image production and interpretation comes without much explicit guidance on ways of approaching non-iconic elements of images. To accommodate this aspect of my research, I turn next (and finally) to the social semiotic approach put forward by Hodge and Kress (1988) and adapted for the visual context by Kress and van Leeuwen (1996).

Social Semiotics of the Visual

Visual social semiotics differs from structural semiotics in its rejection of the central importance of codes or set of rules. Instead, it draws on the traditions of iconographical/iconological thinking to view images as *resources* having *meaning potential*.

³⁶ Dedicated/Directed Improvement and Reflection Time.

³⁷ The SOLO (Structure of Observed Learning Outcomes) taxonomy serves a similar function to Bloom's.

This allows social semioticians to take into account both creative invention and the fundamentally social nature of human semiosis. As Jewitt and Oyama (2001) note, viewers ‘use whatever resources of interpretation and intertextual connection they can lay their hands on to create their own new interpretations and interconnections’ (p. 135). This contextual dependence allows for a fluidity, an ambiguousness, a lack of fixity in meaning that accommodates the notion that each actualization of image-medium-viewer-response is essentially unique. Returning to the poppies in the image in Figure 4.3, although, once their symbolic nature is recognized, they become freighted with associations, this does not guarantee that the same meaning and emotion will be generated in each image-medium-viewer-response actualization. For example, a viewer who draws on intertextual resources such as the poems of Rupert Brooke³⁸ might experience a rush of patriotism and pride. In contrast, a viewer who draws on different intertextual resources, such as the work of Kipling³⁹ following the death of his son, might experience the bitterness of cynicism. For me, it drew in a complex web of personal meaning-making resources including both these and other First World War poets, my grandfather (who served in the Merchant Navy) and the experience of doing English A level, where I first encountered the poetry of the Great War.

³⁸ Rupert Brooke was an English poet and soldier whose most famous poems are idealistic, patriotic sonnets written about and during the First World War. Perhaps his most famous poem, *The Solider*, is the source of the often-quoted lines: *If I should die, think only this of me:/That there’s some corner of a foreign field/That is forever England*. He died of sepsis while passing through the Aegean en route to Gallipoli in 1915, aged 27.

³⁹ The war poetry of Rudyard Kipling was initially extremely patriotic, celebrating the moral righteousness and valour of the English. However, after his 18-year-old son was killed in action at the Battle of Loos in 1915, his poetry took on a bitter, anguished tone, exemplified in his famous *Epitaphs for the War*. For example, his *Dead Statesman* says: *I could not dig, I dared not rob:/Therefore I lied to please the mob./Now all my lies are proved untrue/And I must face the men I slew*.

Visual social semiotics describes the interpretative potential of images in terms of three metafunctions (Hodge and Kress 1988; Kress and van Leeuwen 1996):

1. The representational or ideational metafunction, which refers to an image's ability to represent objects outside itself;
2. The interpersonal or interactive metafunction, which refers to an image's ability to project relations between producer, viewer and represented object; and
3. The compositional or textual metafunction, which refers to their ability to form texts, or coherent complexes of signs.

The representational metafunction

Visual social semiotics introduces the idea of visual *syntax*, as well as visual lexis (Kress and van Leeuwen 1996), contributing to the representational metafunction of images.

Visual lexis consists of "participants" (people, places or things) depicted, settings and appearance. Visual syntax refers to the patterns which relate visual participants to each other. Kress and van Leeuwen (1996) differentiate between two types of pattern, narrative and conceptual, and relate them to elements of images such as the presence of vectors (indicating the former) or the use of classification, attributive or analytical structures (indicating the latter).

It is this syntax which had led me to see the images shown in Figures 4.2 and 4.3 as pairs. Following Kress and van Leeuwen, the syntax of the images in Figure 4.2 is largely narrative, with a similar vector present in both, travelling along the (literal) lines of flight following the junctures between corridor walls and ceiling. These vectors

seem to have almost a reverse dynamic, propelling the foregrounded participants (midwife and poppies respectively) out of the background, along rays of light.

The images in Figure 4.3 have both conceptual and narrative components to their (similar) syntax. In both, text is situated to the left of visual imagery; different fonts are used to indicate headlines and elaborations. The non-textual imagery on the right contains oppositely directed vectors; the upturned face of the mother in the first image contrasts with the downward flow of the stream of vomit in the second. Similarly, the encircling action of the mother's arms, cradling both her child and her drawn-up knees, contrasts with the halting, keep-away signal of the vomiting student's outstretched arms and outwardly-turned palms. The image on the left of Figure 4.3 has an additional vector running through the baby's body, into the calves of the woman and the arm that encircles them, and finally running into the spines of the piled books. This makes a direct connection between the baby, the mother and the wisdom/knowledge contained in the books.

The interpersonal metafunction

The interactive, interpersonal metafunction suggests the attitude viewers should take towards what is being represented. This function is thought to be carried out by features such as contact with the viewer (so-called offer/demand images), social distance, point of view, and modality ("true-to-lifeness") (Kress and van Leeuwen 1996).

Of the four images shown in Figures 4.2 and 4.3, the interpersonal work of the image of the midwife in Figure 4.2 is the most immediately obvious, with her direct, smiling

gaze. This attitude, interpreted through the lens of visual social semiotics, simultaneously offers support and empathy while demanding attention and trust.

A social semiotic analysis of the poppies image in Figure 4.2 suggests that the point of view of the viewer is important there. Following Kress and van Leeuwen, the distance (which renders the messages written on the poppies illegible) asks the viewer to consider this as a group activity, rather than focus on the work of individual pupils. The attitude/angle of the shot, placing the poppies above the viewer as if the viewer must raise his eyes and crane back his head, emphasises their power, suggesting that the viewer is expected to be somewhat in awe of the poppies and what they represent.

A social semiotic analysis also suggests interpersonal work for the images shown in Figure 4.3. The upturned face of the mother in the statue in Figure 4.3, as well as establishing a vector within the image, avoids the gaze of the viewer, suggesting a detachment that might indicate aloofness, or perhaps submission. Even the impact of the cartoon features of the vomiting student may be better understood if the interpersonal work between image and viewer is identified. The wide eyes and slightly averted gaze may indicate that the viewer should respond with apprehension or pity as well, perhaps, as share in the student's horror. Similarly, the outward-facing palms may serve as a warning against closer approach, not just to the depicted male figure, but also to the viewer.

The compositional metafunction

The final metafunction identified by visual social semiotics is textual or compositional. This suggests how the viewer should make sense of the image as a whole. Kress and

van Leeuwen (1996) describe three semiotic resources related to this function: information value determined through placement within the composition (foreground, margins, top/bottom, left/right); framing as a means of connecting and disconnecting elements of the image; and salience – that is, making some elements more eye-catching than others, for example, through size, colour, contrast, etc.

In the image on the left-hand side of Figure 4.2, compositional work may be done in the following ways. Two participants are foregrounded: the midwife and the overhead sign. A powerful focus on the midwife's face is achieved not only through its central position, but also by its framing between blue-and-white overhead sign and blue-and-white uniform. It may seem that the centrality of the smiling face is obvious without resorting to complex analysis, but it is details such as this additional emphasis through framing that may provide an explanation as to why I found this image so much more striking than any of the many other images of smiling midwives tweeted during the Twitter conversations.

In the image of the poppies shown in Figure 4.2, the back-lighting and aerial suspension combine to create an other-worldly effect. The high positioning of the poppies within the compositional structure connects them to the ideal, rather than the worldly (according to the interpretation of position in Western imagery put forward by van Leeuwen (2001)). Together, these suggest a spiritual, poetic meaning, perhaps accounting for the strong response I had to this image.

The compositional work of the image on the left-hand side of Figure 4.3 is also enlightening. Although lighting effects highlight the figure of the mother and child, it

is the books that are foregrounded. Among these the midwifery manual is positioned above the book *Expectant Motherhood*. In contrast to the poppies in the previous image, the positioning of the books at the base of the image and in the foreground suggests a focus on the worldly and practical.

The compositional work of the knowledge vomit image is perhaps the least complex of the four. The foregrounding of the vomit and the use of the same green in the title text send the message that vomit should, indeed, be the key message understood by a viewer. Similarly, colour is used to make the phrases '*empty your guts,*' '*spew*' and '*big chunky piles*' inescapably obvious. While one may feel that such an analysis is not needed to identify the key messages in this image, it does perhaps provide an explanation as to why this image provoked a strong response (of anger in me and approval in the Twitter conversation participants) rather than a mild one (of, say, simple dismissiveness): the compositional work combines with the interpersonal work to make the grossness of the image, which a viewer may find patronizing or amusing, inescapable.

Thus a social semiotic analysis provides a language in which to describe the tweeted images, and a framework for analysing their meaning and affective potentials, potentials needed to trigger flows in *agencements machiniques* formed with them.

Attending to the medium

Visual social semiotics offers a way to articulate and explore the contraction of image-viewer-response, but it does not, in itself, address an additional and essential element

of the contraction: the medium of display. The importance of this element became clear to me at several points in my research.

Image size

First, and most obviously, there is an important effect due to size. As I viewed them on my laptop and PC screens, I could make out fine detail in the images. Most of the participants in the Twitter conversations, however, were likely to be using mobile phones or tablets, devices on which Twitter apps can provide automatic feeds from users they follow. Looking at images on these smaller screens, viewers are likely to miss some elements of images. For example, the words written on the poppy petals in the image shown in Figure 4.2 are completely undetectable when viewed on my own mobile phone, so unless a viewer is aware of the possibility that there might be something there, and so zooms in to look, they would remain unaware of one of the key features of the learning activity being depicted. Similarly, when viewed on a small screen, the words mixed up in the stream of vomit in the image in Figure 4.3 would certainly be unreadable, and perhaps even unnoticed. The meaning potential of images thus also depends on how closely they are likely to be looked at.

Screen or paper

A perhaps more subtle but potentially profound effect may also be due to whether the images are viewed on backlit displays, glare-corrected screens or print-outs. Initially, I viewed the images on my backlit but glare-corrected PC monitor. Eventually, I printed some to lay out on the floor and look at simultaneously, in the hope of developing relationships between them more easily than I (thought I) could do on screen. At this

point, I was struck by how their appearance seemed to have changed. Some of the difference was due to variations between the colours produced by different devices. But there seemed to be a more important difference than tone: that of the origin of illumination. In particular, the two images shown in Figure 4.2 seemed darker, less detailed, and to have lost some impact.

Further reflection suggested that some images might have a more dramatic appearance than others because they depict backlit scenes. Backlit imagery has long been an important feature of Christian churches, with stained glass windows an essential part of the 'multimedia awe machine that was the medieval cathedral' (Malone and White 2009, p. 43). The effects due to backlighting can be rendered relatively faithfully on the screens of mobile devices and PCs, but *cannot* be faithfully rendered on paper.

Both of the images in Figure 4.2 are backlit, with bright fluorescent ceiling lights providing a light source *within* the image. This contributes in each case to the symbolic and interpretative potential of the image, as described in the preceding sections. This internal light source, and so its contribution to that potential, cannot be reproduced when an image is re-presented in print form.

This observation has consequences both for my researching of professionals and students experiences in encountering the images and for my subsequent presentation of them in this thesis and elsewhere. Here, I find it useful to draw on Law's notions of traduction and trahison (Law 2006). Traduction, literally "translation," refers to the (relatively) faithful (re-)presentation of something. Trahison, literally "treason" or "treachery," refers to re-presentations that change what is presented.

The images shown in Figure 4.2 are relatively faithfully presented on LCD screens, so that the effect of the light emerging from the fluorescent lights is retained. There is still some element of trahison in relation to the internal illumination of the image, however, as we, or software responding to data from on-board light sensors, select and control brightness levels, or as the image is viewed in ambient light different from that of the original scene. This is illustrated in Figure 4.4, which shows the effect of adjusting the brightness levels of the image of the midwife originally shown in Figure 4.2.



Figure 4.4: The impact of increasing screen brightness

I have adjusted the brightness of the image on the right-hand side to mimic the effect of viewing the image on a back-lit screen without glare compensation, such as on a mobile phone in a dimly lit room. The midwife appears to be enveloped in light, producing an (or enhancing an already existing, if the viewer mobilizes cultural resources relating to Christian religious art in their interpretative process) association with the angelic. The quotidian details of the work environment are hard to make out;

the noticeboards on the right of the corridor have been transformed so that they could easily be mistaken for windows allowing in the light of a bright, sunny day.

In contrast to the possible traduction in re-presenting the images shown in Figure 4.2 on LCD screens, the translation of the images shown in Figure 4.3 to on-screen image, while appearing to be faithful, in fact involves a substantial degree of trahison. All front-light is transformed to back-light, with the image the source of its own illumination.

The extent to which these re-presentations are traduction or trahison depends on both the type of screen the viewer is facing and the context in which the viewing is undertaken. Devices such as kindles and modern desktop displays, intended for extended viewing periods, are typically equipped with glare-reducing technologies to reduce visual strain/headaches, whereas the screens of mobile devices (particularly phones but also many tablets and laptops) are much more obviously sources of light. Similarly, the evident glow of a screen is enhanced if it is viewed in relatively poorly-lit surroundings. Thus viewing an image of a backlit scene such as those depicted in Figures 4.2 on a desktop monitor in a well-lit office increases the trahison, while viewing an image of a scene lit by reflected light such as those depicted in Figure 4.3 on the same monitor reduces it. Sneaking a look at the same two images on your mobile in a lecture theatre or in front of the TV enhances the glow reducing and increasing the trahison respectively. As is evident from the social semiotic analysis above, sources and levels of light are important contributors to the interpretative potential of images, and so the devices professionals use to access them are likely to affect their responses.

Similarly, when engaging students with the images, decisions I made about what device to display them on might affect their responses.

There is an additional impact on readers of this thesis, and their own image-medium-viewer-response actualizations. If this thesis is read on the screen of an electronic device, all of the above applies. If, instead, it is read in print form, then scenes depicted in Figure 4.3 are relatively faithfully reproduced. In the case of the knowledge vomit image, the piece of paper has been translated into a digital image of a piece of paper, but then re-translated back into paper again, returning it to its native flatness and illumination by reflected light. The unnatural glow accorded the images by the backlight of the LCD screen has been removed. But now, the scenes depicted in Figure 4.2 suffer from a damaging trahison, possibly leading the reader to accuse me of overstating the case for the quasi-religious or spiritual flavour of some of the images.

These considerations suggest that the meaning potential of an image is affected by the material medium through which it is represented. Thus the meanings that may be generated in encounters with images, and that may therefore flow through the Twitter chats, depend on complex and interacting factors, including visual lexis and syntax, cultural and intertextual resources, material media and more.

4.3 Summary

This chapter presented my own experiences of seeing and analysing the images tweeted during the two Twitter conversations.

I described how exposure to repetition among and difference between images led me to see motifs in both content and style, repetitions that ran through each series.

Among images tweeted with the hashtag #wemidwives, repeated motifs included mothers holding babies; uplifting images and quotations; images advocating particular midwifery practices; and images of midwives. The predominant colours were pastels and earth tones; predominant shapes were curved, asymmetric, organic; and the images often included empty space. I suggested that some of these repeated features might have a kind of iconic symbolism for the midwives tweeting them. For example, the similarity of the poses in mother-and-baby photos to Madonna-and-child images seemed too strong to ignore. Likewise, the linking of midwives to angels seemed almost explicit in images that showed midwives with light emerging from behind them.

Images tweeted with the hashtag #pedagoofriday were repetitions of teacher-produced artefacts such as useable resources and corridor displays; work produced by students; students in classrooms and outdoors; and empty classroom scenes. The images tended to be densely populated, brightly coloured and often featuring rectilinear components. I suggested that classroom artefacts such as post-it notes and the sugar-paper framings of wall and corridor displays, which appeared in many of the posted images and

which often provided the geometry or structure of the image, might have a kind of iconic status.

As I immersed myself in the images from the Twitter chats, I felt a need to develop a more sophisticated way of describing and understanding their impact on both myself and, in the later stages of my research, on practitioner and student professionals encountering them during interviews. I therefore explored possible approaches to analysing images, finally settling on one that draws on the traditions of iconography/iconology (van Leeuwen 2001) and visual social semiotics (Kress and van Leeuwen 1996). Using the example of four images shared during the Twitter conversations, this chapter illustrated how images can be thought of as functioning at multiple levels, including representational, interpersonal and compositional.

My analysis of my own responses to these images shows that an interpretation created in any one contraction of image-medium-viewer-response is shaped by a number of interacting forces. These include cultural conventions regarding images (as in my connecting the two images tweeted with the hashtag #wemidwives with Christian religious images); personal history, prior knowledge and experiences of the viewer (as in my connecting the poppies in the image on the right hand side of Figure 4.2 with Remembrance Day and my grandfather); context of the image among other images and medium of representation.

A deep analysis of such forces was thus helping *me* to see the images and to account for my responses to them. But I was also left wondering, just how much of a meaning-making process do professionals participating in Twitter conversations engage in when

they see an image? It seemed unlikely that they would study them intensely, as I had been doing, but would their professional experiences and expertise render some things immediately obvious to them that I had had to work to see, or perhaps make other things invisible? Were some of the repeated motifs truly iconic in character, that is, freighted with culturally symbolic significance beyond their representative meaning? And would the more extended encounters with images that I engineered in the interviews and focus groups with practising and student professionals result in the generation of new knowledge and meanings for either group? These questions are among those addressed in the next chapter.

Chapter 5 – What practitioner and educator professionals saw in the images

The relation between images and imputed meanings is fraught with uncertainties, for like opaque facts, images cannot be trapped readily within a simple interpretation. They have a life of their own which often resists the efforts of [image-makers] and viewers (or readers) to hold them down as fixed meanings. (Trachtenberg 1989, p. xv)

An assemblage, in its multiplicity, necessarily acts on semiotic flows, material flows, and social flows simultaneously. (Deleuze and Guattari 1988, p. 23)

In the previous chapter, I outlined my own experiences of seeing and analysing the images posted during the two Twitter conversations. I identified some recurring motifs in both content and style. I also showed how the language and concepts of visual social semiotics could be used to articulate ways in which different elements of images (their lexis) and their organization and relations (their syntax) might work on viewers. This approach provided a useful framework for understanding my own responses to the images I viewed and I hoped it could be applied to analyse the responses of professional (and student) midwives and teachers.

The present chapter retains a focus on the images themselves, but now moves on to discuss the responses of professionals when viewing images in interviews. It thus continues to address the questions,

What images are shared during the two sample chats?

What do the images do – how do they trigger flows of meaning?

It takes as its starting point two assumptions. Firstly, that the potential for images to generate informal professional learning within the Twitter chats depends on the way professionals participating in those chats respond to the images. Secondly, that the

responses of practitioner and educator professionals may provide indications of how the same images might be used in more formal, higher education contexts.

First, drawing on the notion of an *agencement machinique* (Deleuze and Guattari 1988) described in Chapter 2, I suggest that the tweeted images can be conceptualized as machines that are plugged into or connected to by viewers. When this happens, *agencements* are created which include image, medium, viewer and a range of personal, intertextual and cultural resources; and through these *agencements*, meaning (and sometimes desire) may flow.

I then make use of the visual social semiotic approach introduced in the previous chapter to describe responses generated in some example *agencements* from my interviews. These highlight how images can mobilize both knowledge and affect, sometimes in ways that the original tweeter may have intended but sometimes in ways that may evade or even subvert their intended message. I also highlight how images may be interpreted in highly varying ways, as those viewing them connect their own personal histories, experiences, opinions and beliefs into the *agencements*.

5.1 Images and interviews: *agencements machiniques*

The [agencement machinique] negotiates variables at this or that level of variation, according to this or that degree of deterritorialization, and determines which variables will enter into constant relations or obey obligatory rules and which will serve instead as a fluid matter for variation. We should not conclude from this that the [agencement machinique] brings only a certain resistance or inertia to bear against the abstract machine; for even “constants” are essential to the determination of the virtualities through which the variation passes, they are themselves optionally chosen. There is indeed braking and resistance at a certain level, but at another level of the [agencement machinique] there is nothing but a

come-and-go between different types of variables, and corridors of passage traveled in both directions: the variables effectuate the machine in unison, in the sum of their relations. (Deleuze and Guattari 1988, p. 100)

As described in Chapter 3, I conducted interviews with fifteen practitioner and educator professionals using a selection of four to six images from the Twitter chats as prompts for discussion. As I undertook an analysis of the responses to images produced during these interviews, I continued to find the concept of actualizations, of contractions of the virtual into actualized members of repeated series, useful. However, I also started to think of the interviews as spaces in which the interviewees plugged into the images. That is, I envisaged the images as machines and the image-medium-viewer-response actualizations as being produced within *agencements machiniques* (Deleuze and Guattari 1988) constituted in the interviews. Thinking of the interviews in this way helped me to identify what was being brought into each *agencement* – interviewee, image, past experiences etc. It also sensitized me to flows of intensity (meaning and affect) within each *agencement*, and to what triggered or resisted those flows.

As described in the preceding chapter, before undertaking the interviews, I had engaged in a close analysis of the images. I pored over the details of a selection of images, zooming in so that they filled the screen of my desktop computer, spending hours gazing at them, noting the subtleties of lighting and composition. I thus plugged myself into each image so that potential meaning could flow, and I maintained these connections for a long time and with the deliberate intention of connecting other knowledge resources into each in the process of creating (evolving) actualized responses.

It struck me that this was likely to be very different from how the images were viewed by professionals participating in the Twitter chats. There, they were more likely to be initially glanced at on a smartphone or tablet, just one of a stream of verbal and image-based tweets to be looked at for a moment or two before moving on to the next that caught the participant's eye. Whilst I had thoroughly plugged myself into each image, the connection formed between image and viewer "in the field" might be more tentative, tenuous and fleeting. Perhaps in these circumstances, the virtual space of meanings that might be generated in an *agencement* would be much more limited. However, my planned interviews, in which the images were touchstones, would force interactions with a degree of attention and on a timescale that lay between the glance of everyday Twitter use and the gaze I had applied in my analysis in the previous chapter. They might thus produce *agencements machiniques* long-lived enough for currents of meaning and desire to flow.

When conducting the interviews, I made some attempt to retain features of the images' "natural" setting. I ensured that they were viewed on the screen of a digital device (in most cases the device that the interviewee usually used to receive their Twitter stream). I also re-presented each image as a screen capture including the associated profile picture and tweeted text. However, viewing and discussing the images at greater length, with another person, was likely to be a disruption to the interviewees' usual connection with images during the Twitter chats, where each image would be just one of a large number of tweets. I was creating experiences that the interviewees may not have had before, in which closer attention might be paid to an image and aspects of it consciously noticed that could otherwise have escaped attention or remained

unexamined. I hoped that this would help to make the elements of the image that evoked particular responses clearer, although I was also aware that this deeper looking could in itself generate altered responses.

With this in mind, I asked my interviewees to first describe each image as I sent it to them – simply to tell me what they saw – before going on to discuss their responses in terms of how they felt, what ideas or experiences they associated with the image, and so on. I hoped this would result in an *agencement machinique* which included image, medium, viewer, cultural and intertextual resources, and more, through which potential meaning flowed and which might result in the generation of new insights or new possibilities for practice. The following section gives examples of responses in the interviews which suggest that such *agencements* were, indeed, formed.

5.2 Professionals' responses: knowledge, affect and variation

In the following, I provide excerpts from my interviews with practitioner and educator professionals⁴⁰ to illustrate how they responded to images during the interviews conducted for this research. First, I focus on my interviewees' descriptions of the lexis and syntax of the images I showed them. It appeared that not only knowledge, but also affect, was important in actualizing responses. Because of this, I then provide some examples of responses to interpersonal and compositional, rather than representational, elements of images, since these might be expected or even intended to produce affective as well as intellectual responses. The interviews suggested some

⁴⁰ An explanation of these terms is provided in section 3.3.

differences between the two professional groups in the extent to which the images operated as machines with representational, interpersonal and compositional functions. However, they also revealed significant variation in the meanings generated in response to certain images *within* each professional group.

Details of lexis and syntax: midwives

When initially viewing images in the interviews, both practitioner and educator midwives generally provided detailed descriptions of what they saw.

For example, both practitioner and educator midwives offered detailed descriptions of the image of the midwife in the hospital corridor presented in Figure 4.2 and repeated here as Figure 5.1.

They noted components of the image such as the midwife's ethnicity, facial expression and uniform; details of the

environment such as the corridor, ward entrance and sign, notices

affixed to corridor walls; and, in one case, even a woman in the distant background,

behind the midwife, with her back to the camera. These descriptions focused on the

visual lexis, rather than syntax, with no interviewees explicitly identifying vectors such

as the perspective lines formed by the corridor, or the framing device produced by the

uniform and ward signs, described in the previous chapter. All but one interviewee

commented on the depicted midwife's loosely-tied hair; ME1⁴¹ noted her fob watch.



Figure 5.1

⁴¹ Throughout this chapter and the following, practitioner and educator professionals are identified using the labelling system introduced in Chapter 3. Thus ME1 is the first of the two midwife educators I interviewed, who had been a practising midwife but now worked only as a midwife educator.

Loose hair, my interviewees repeatedly told me, might end up dangling into lochia⁴² or wounds; and externally-worn fob-watches presented a risk to infection control.

This is a good illustration of how the *agencements machiniques* created when professionals plugged into this image included cultural resources and practice knowledge that shaped the flow of meaning and the response it generated. These resources had not been available to me, so that meanings relating to hygiene and infection control had been completely absent from my response to this image, despite my focusing on it as an example in the previous chapter. What, for me, was a minor detail was one of the most salient for the professional midwives. This raised questions as to whether relative novices such as student midwives, who might lack this sort of detailed and automatically-connected practice knowledge, might have access to a limited space of virtual meanings. This is one of the questions that will be addressed in more detail in Chapter 8.

The responses to this image actualized in my interviews with professionals are, however, also a good illustration of how the knowledge mobilized by an image may in fact subvert its intended message. The image in Figure 5.1 was posted by a hospital to demonstrate what it was doing in response to the “Hello my name is ...” campaign for more compassionate care⁴³. It is likely that this tweet was intended to promote both the practice of making sure patients know the names of those caring for them, and the hospital as a site of good practice. However, the midwife’s hair effectively deflected attention from these two probable intentions. Thus, because of a resistance or braking

⁴² A mixture of blood, mucus and uterine tissue discharged from the vagina after birth.

⁴³ See <http://hellomynameis.org.uk>.

within the *agencements*, an opportunity for professional learning about practices intended to increase patients' perceptions of the quality of care seemed to be lost.

As well as producing a flow of meaning, the *agencements machiniques* formed with this image also seemed to activate flows of affect. M1, M4, M5 and M6 all expressed irritation at the lack of professionalism implied by the midwife's loose hair; ME1 was visibly angered by the double failure of loose hair and externally-worn fob watch. ME1 and M3/ME2⁴⁴ were both further irritated by their sense that she did not represent the reality of midwifery. The image prompted M3/ME2 to describe being approached via email by a TV company that was initially keen for her to appear in a documentary about midwives, but changed their minds after meeting her:

They obviously hadn't seen a picture of me, they wanted a young vibrant person to do a reality TV show about midwifery? And I think that's what they thought they might be getting and it's not me ... [crossly] And she's Caucasian and female. So it's a stereotype as well. (M3/ME2)

Here, M3/ME2 draws the intertextual resources provided by popular culture into this *agencement*; resources which did not automatically enter into the *agencements* made by this image with M1, M4, M5 or M6. She also draws in her own past experiences, which perhaps serve to limit the virtual space that she is able to access by rapidly contracting a negative affective response.

The midwives and midwife educators also all gave detailed descriptions of the image of a Christmas card shown in Figure 5.2. This image is a modified version of the



Figure 5.2

⁴⁴ M3/ME2 is the third practising midwife, and also the second midwife educator, I interviewed, and hence has a slightly different identifier to the other professionals quoted in this chapter.

traditional nativity scene, with Mary and Joseph in a stable with animals and a manger. However, the three wise men have been replaced with three women (perhaps in a play on the French for midwife, *sage femme*, literally *wise woman*, something that all my midwife interviewees, including students, were aware of). In this image, the star that the three wise men are presumably following is a balloon on a string held by one of the women.

All of the midwife professionals I interviewed described the visual lexis of the image, including Mary, Joseph, the cow, the donkey, the angel, three midwives (in nighties, according to M5), the Pinard stethoscope, birthing stool, socks, and star. One feature of the image, while consistently noted, was identified as various different items, including aromatherapy oils, a mug of tea and hot water '*to prevent infection*' (M5). Two of my interviewees commented on the socks as being important as women in labour tend to get very cold feet, with M5 describing this as being the result of '*the fight or flight response*.' Again, much of the practice knowledge they brought into their *agencements machiniques* with this image had been unavailable to me, raising the question of what might be noticed and how it might be understood by pre-service and novice midwives.

As well as the lexis, the syntax of this image was sometimes commented on, particularly the direction of approach and its relation to the narrative of the image (for example, two interviewees explicitly noted that the midwives are on their way to the stable, interpreting this as indicating that they will be there in time to assist at the

birth). Thus in each interview, the *agencements machiniques* formed with this image mobilized midwives' professional knowledge.

As with the previous image, something about this image triggered flows of affect as well as knowledge. However, despite the similarity in descriptions of lexis and syntax, the nature of the affective flows varied. Most of my interviewees giggled while describing what they saw, with M5's resistance to this flow so low that she was unable to speak at times, almost crying with laughter. Their amused response was ascribed to either the clichéd, but familiar and apparently approved of, depiction of midwives, or to the way the image positioned midwives as pre-existing doctors and possessed of superior knowledge and understanding of the needs of women in childbirth. It seemed at first that this was an example of variables with 'constant relations' or 'obligatory rules' (Deleuze and Guattari 1988, p. 100): connections formed between midwives and this image generate amusement.

However, ME1 responded to the image quite differently. For her, the connection included a substantial 'braking and resistance' (Deleuze and Guattari 1988, p. 100). Her initial connection with the image seemed to be fairly tenuous, leading to a rather off-hand dismissal of it as '*neither nothing nor something.*' Then as the *agencement machinique* persisted, the image became '*trivializing*' and finally, as glance became gaze:

... kind of an us and them thing, kind of perpetuates that whole midwives and men and the gendered aspects of it ... [puts on mimsy voice] "Oh when Jesus was born we were already there with our socks." [crossly] Why socks? Is Jesus going to get cold feet? (ME1)

As with the previous example, it seemed that details of visual lexis and syntax could mobilize both knowledge and affect within *agencements machiniques*, and that both were

important in the generation of meaning. However, in some cases, aspects of images produced resistance that subverted or even inverted the flows likely to have been intended by those sharing the images.

Details of lexis and syntax: teachers' responses

There appeared to be some differences in the ways in which potential meaning flowed when practising teachers and teacher educators connected with images in interviews compared to the midwifery group. Most strikingly, none of the teachers and teacher educators with whom I spoke provided detailed descriptions of what they saw. They had a tendency to first either name the activity or resource being displayed (*'the Marvel literacy DIRT mat,' 'some work from his year 4s,' 'challenge board'* (T1); *'these are those chatterboxes people use for different things'* (T3); *'Ah I do window drawing too so that's cool'* (T4)), or say something about the person posting the tweet (*'Ah [C], she's dead canny her'* (T1); *'Yeah so this is [C], she's quite frequent on PedagogooFriday'* (T3); *'OK so this is a tweet by [R]'* (T2); *'Who posted that?'* (T5)). Our discussions would then rapidly move on to suppositions around context, or explications of their own actual or imagined adoption of the depicted resource or practice. It seemed that the teachers I interviewed rapidly and automatically contracted the experience of image-medium-viewer-response into a contextualized interpretation.

Even when my prompts to describe the image became more insistent, most of the teacher professionals I interviewed never gave an actual description of the image in front of them. The following excerpt from my interview with TE1 is a fairly typical example of my failure to elicit this kind of description. We were discussing the

“knowledge vomit” image described in detail in the previous chapter and reproduced in Figure 5.5:

TE1: I don't find it offensive, I don't find it particularly funny either

I: Can you just tell me what you see?

TE1: It's not particularly clever ...

I: There's both text and an image, can you describe them to me?

TE1: I certainly don't think it's particularly clever, but it's not offensive ...



Figure 5.5

Amongst the interviews with teachers and teacher educators, there was only one exception to my failure to elicit detailed descriptions of the lexis and syntax of the images. This was when T4 described an image that she herself had posted, shown here in Figure 5.6:

Yeah so it's got a picture of my school hall with all the balloons up, and the badges we got them to wear, and then different photographs of the children while they're in the hall, and then while they're doing different activities, so bottom left is they're doing some things about blogging, and middle left is them doing a hackable rhino which is from the [Innovation Centre] at [the local University], they've got Jedi mind control technology, app hacking, um all sorts of things going on it, it was just a really nice picture to try to summarize the day (T4)



Figure 5.6

On the surface, T4 seems to be describing the image in front of her. However, even here, it becomes evident as her description progresses that she is not strictly describing what she sees, but rather her memories and knowledge of the day. Although the image does indeed contain balloons and children, it does not “show” blogging, a hackable rhino, Jedi mind control technology or app hacking; these things are only

visible to her because she already knows about them, but would likely be invisible to anyone viewing the image who was not there and aware of the structure of the event or the practices engaged on the day. The interviewee is apparently drawing more heavily on resources outside of the image than on the lexis or syntax within it; what T4 actually describes relies on her memory of a specific event and her general practice knowledge.

As in my interviews with midwifery professionals, the *agencements machiniques* formed with these images mobilized flows of affect as well as knowledge. They produced a similar range of emotions (chiefly delight and irritation). However, with the teacher professionals I interviewed, affective responses seemed to be more often related to the practice depicted, rather than the nature of the depiction.

Irritation tended to be produced when it was not clear how a depicted activity worked, or what was innovative about it. In such cases, resistance appeared to be rather high and interviewees were generally keen to move on to the next image. For example, T4 initially responded to the

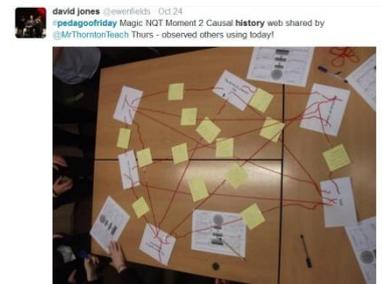


Figure 5.7

image shown in Figure 5.7 by saying she did something similar. However, after a few seconds' connection, she started to be irritated by the trendiness of the activity:

I mean post-it notes are great, they're good for starters and plenaries and all that stuff, it's just very trendy at the moment, I mean [sarcastically] "Ofsted⁴⁵ are coming, great, whip out the post-it notes ... I don't use post-it notes anymore."(T4)

⁴⁵ The UK's Office for Standards in Education, Children's Services and Skills, which is responsible for school inspections.

When I asked whether she would interact with an image like this online, she indicated, with mounting irritation, that she would be unlikely to:

I probably wouldn't, with all respect to him [not very respectfully], I probably wouldn't retweet that because I've seen it and done it and I'm not sure what the impact is because I don't really know what he's doing. I don't know what the question is or what the task is or what the outcomes are or any of the stuff. I mean I've seen stuff like that before, so I don't know what's special here. (T4)

In the above, it seems that a desire to not only mobilize but also extend practice knowledge is being blocked, giving rise to a rather negative response.

Somewhat paradoxically, recognition of the familiar was equally likely to result in delight; the image perhaps serving as a repetition that reinforced a bias or confirmed the value of the viewer's own practice. This can be seen in T1's response to a classroom trench display shown in Figure 5.8:

*[emphatically] Now we **love** the trench. [proudly] We have our own. We were the first school to build one. We won a design award for that. Which was insane to beat like multi-million pound things made by architects, it was hilarious ... an idea that our boss [Mr X] had was to "Let's just build a trench in that bit of wasteland outside the back." And we were like, "That's a great idea boss!" ... So that image really excites me, because it's that sort of immersive learning experience you know it's not just a corner in the classroom it's a bit of a trench. And it's just making that educational stuff a little bit more magic. (T1)*



Figure 5.8

Thus in the *agencement machinique* T1 forms with this image, both practice knowledge, relating to his own experience of using a trench to provide an immersive learning experience, and affect, in the form of pride and excitement, start to circulate.

Because affect seemed to be such an important part of professionals' responses to the images, I now consider in more detail their apparent responses to specific elements of

images that seemed to serve interpersonal or compositional, rather than representational, functions, and which might therefore be expected to be strongly associated with the production of affect.

Responding to interpersonal and compositional functions: midwives

As well as identifying lexical and sometimes syntactical elements of the images I showed them, the professional midwives I interviewed also sometimes explicitly responded to their interpersonal and compositional functions. For example, the midwife depicted in Figure 5.1 was frequently described as attractive, approachable and having a comforting appearance, showing the impact of the interpersonal as well as representational work done by the image.

Aesthetic elements such as the use of '*handwritten*' (M1, M5, M6) fonts and '*handmade*' (M3/ME2, M5) paper were commented on in relation to what made the images themselves (as opposed to what they depicted or represented) '*nice*,' (M4, M6) '*cute*,' (M1, M5) '*sweet*,' '*lovely*,' (M5) '*soothing*,' (M5) or '*uplifting*' (M2, M6).

It seemed that these aesthetic qualities did both interpersonal and compositional work. According to the ideas of visual social semiotics (Kress and van Leeuwen 1996), the handwritten- and handmade-ness might establish a direct and human connection between the image's author or tweeter and the viewer, indicating a personal message. At the same time, choices and changes of font are important in creating salience. Such features seemed to be important in facilitating the 'come-and-go' (Deleuze and Guattari 1988, p. 100), the unresisting passages through which meaning and affect

might flow. As an illustration, M5 explained her attraction to the image shown in

Figure 4.3 and reproduced as Figure 5.3:

I just think it's a lovely image, it captures a lot. It kind of captures the mother and baby because they're the centre of midwifery and the midwives are there as well. But it's the wisdom, the strength and wisdom, and the global village – there's a world of midwives out there ... The lines of the mother and baby, it's a very beautiful piece of sculpture isn't it. It's very smooth, and the mother is holding the baby skin-to-skin. The midwife doesn't come into that. That's the beauty of it. You know she's just around the mother and baby, and I think that's why I liked that image, because the midwife doesn't get in between the mother and baby, there's no control there, the mother and baby have it. But at the same time the knowledge and the world of midwives at the side is very important. (M5)



Figure 5.3

Here, M5 appears to be responding to aspects of the image's visual syntax and compositional work, reading a narrative from the vectors and salience-enhancing features that resonates with her personal ideal of midwifery. This seems to be that the bond between mother and child is central and achieved through close physical contact, with the midwife 'around' the mother and child, enveloping them with support but letting them remain in control, just as the text hovers next to the statue, which might be resting on the wisdom contained in the books. This kind of response, in which a professional's beliefs about the nature of her profession are articulated, may represent an opportunity for professional learning, as those beliefs are consolidated or even refined in the telling.

Responding to interpersonal and compositional functions: teachers

In some of my interviews with teacher professionals, compositional aspects of the resources or artefacts depicted in the images were identified in relation to an evident

pleasure in seeing these objects. For example, words such as *'bright,'* (T3) *'striking'* (T1, T4, T5, T6) and *'colourful'* (T2, T3) (referring to resources), *'beautiful'* (T1, T2) and *'lovely'* (T1, T3, T6) (referring to teachers' and children's work) were accompanied by smiles and expressions of pleasure.

However, in some cases, both the aesthetic quality and the detailed content of images were explicitly dismissed as unimportant. For example, in my interview with T4, just after we started discussing the image of a window that had been drawn on by students shown in Figure 5.9, I had shared my feeling that there is something particular about how backlit images work on their viewers (see previous chapter). This deliberate attempt to get an explicit response to the image's lexis and syntax, and perhaps an acknowledgement of how these contributed to interpersonal or compositional aspects of meaning production, resulted in the following comment:

It's obviously looking at a map of something in 1 2 3 4 5 different stages. I can't read the writing without zooming in and uh he's obviously plotting a demographic of some sort. Which is quite cool. To be honest, it's not always the subject, content that's important. It's about the idea, the pedagogy behind the idea. (T4)

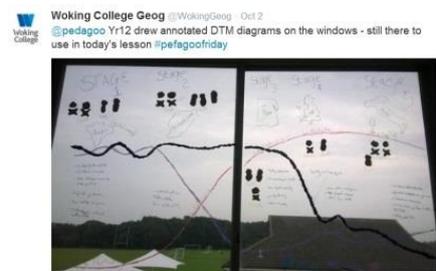


Figure 5.9

This response is a good example of the effect of the medium on the interpersonal and compositional work in an *agencement machinique*, and also one where the effect might not be what was intended by the creator and tweeter of the image. The interpersonal work done by the image itself, when viewed on a larger scale, includes a positioning of the viewer as below the window, looking up. In the framework provided by visual social semiotics (Jewitt and Oyama 2001; Kress and van Leeuwen 1996; Oyama 1999), this positioning tends to suggest that the viewer should be in awe of (or at least

impressed by) the things depicted. Similarly, the high contrast and sombre tones also suggest the image should be taken seriously. Other elements contributing to the compositional work of the image include the use of red and thick black lines that mark out what should be most salient. These seem to be details such as the timeline and associated graphics that may (or may not) be people. The potential meaning flowing through the image-viewer connection might thus be intended to be dominated by both the importance of the activity and the details of its construction. Perhaps the creator and tweeter of this image believed its value to lie in the specific instance, rather than the generic practice, and wanted those viewing it to appreciate some important detail that differentiated it from the series of repetitions of “drawing on windows.”

However, when viewed on T4’s mobile device screen, the text on the windows could not be deciphered and so lost salience, restricting the potential meaning as being related to the generic idea “drawing on windows,” rather than the actualization of *this* drawing on *this* window. In fact, T4 was not particularly impressed by this image and indicated that she would not actively interact with it online, because she was already familiar with the practice of window-drawing and could not see what was new. Thus any opportunity for professional learning offered to T4 by this image appeared to be undermined by details of its construction.

Some of the teachers’ responses suggested that compositional aspects of the images created meaning in ways they did not always recognize. For example, in the following, T3 describes the resource pictured in Figure 5.10 in positive terms because he believes that the striking, colourful image will engage students:

Using the London Underground here is a brilliant visual you know image, visual display for the children. Especially for those living in the London area, who have seen these maps before. For me it works ... I think it's pretty awesome ... So I'm pretty impressed with how striking it looks. (T3)



Figure 5.10

Here, the interviewee remarks on visual aspects that contribute to salience. However, he does not explicitly refer to the narrative structure of the image. When read in the conventional western left-to-right/top-to-bottom way, this would indicate a focus that moves in and then back out. That is, the viewer starts by seeing the activity as a whole, then moves on to a detail that explains its function, and then finally sees it in the context of the classroom, mounted on a wall for children to walk by. In fact, later in the interview T3 does refer to children walking up to the display and chatting about it as they pass it by on their way to do something else. It seems that, although he has not commented on the way the tweeted image draws attention to the use of the resource in practice as well as the nature of the resource itself, it has succeeded in alerting him to its possibilities. Thus, unlike the connection between T4 and the image in Figure 5.9, the connection between T3 and the image shown in Figure 5.10 appears to have effectively offered an opportunity for professional learning.

It is also perhaps worth noting that, from a visual social semiotics point of view, someone looking at the photo-montage presented in Figure 5.6 who had not been present at the event (and was thus reading the image without the aid of memories and experience) would be likely to respond to the image in a relatively impersonal way. This is because all of the photographs included in the montage are taken from slightly

skew angles, most from a position above and distant from the action. According to visual social semiotics, this perspective positions the viewer as in a monitoring, guardian or authority relation to the depicted content (Jewitt and Oyama 2001; Kress and van Leeuwen 1996; Oyama 1999). They are also on a small enough scale that facial expressions are difficult to make out, and eyes difficult to make contact with, again features that in the view of the social semiotics of Western images reduce the interpersonal connection between image and viewer (Kress and van Leeuwen 1996). This seems quite different from the personal engagement, excitement and pride displayed by the interviewee. Thus this is another example where the message intended by the tweeter might be partially undermined by details of the image's construction.

These examples suggest that, as with the midwife professionals I interviewed, interpersonal and compositional functions of images were important in creating or impeding opportunities for professional learning for teachers.

Variation in responses to individual images

While there were some similarities in the ways in which professionals responded to particular images, there were also important differences. That is, as well as some 'constant relations' there was often 'fluid matter for variation' (Deleuze and Guattari 1988, p. 100). A good example of this came in the flows of knowledge and affect generated in responses to an image of a baby being delivered by caesarean section, shown in Figure 5.4. While apparently powerful, this image contributed to *agencements machiniques* in which responses varied significantly:

It's very nice. I like that one. Well it's a lovely image in a horrible way really because it's this poor baby being pulled out by section but sometimes sections are necessary so that's fine. (M4)

That's such a fat little baby! ... The image is probably quite a benign caesarean section image, as section images go. ... It is a really fat little baby though, makes me want to give its little fat arms a little squeeze, it's got little chubby cheeks. (ME1)

I think that there would be a lot of people that wouldn't like it, it's too – a bit too raw. And I suppose I'm so used to images like that it doesn't really bother me. (M6)

It's a typical section ... It's not a very nice photograph. Well it's not a happy-looking baby is it? (M3/ME2)

I really don't like the image. Like I really don't like it. It's very dark or something, it looks kind of scary. And it doesn't look like any caesarean I've ever seen ... the image itself, maybe it's just the photographer or the artist in me I don't like it. Yeah um I don't like the image, and I don't know why she's edited ... see there's like a frame, and a frame around it. It makes the writing much smaller I don't think I'd have done that. (M1)



Figure 5.4

These comments show interviewees connecting more or less strongly with the representational, interpersonal and compositional functions of the image. ME1 and M3/ME2, for example, were responding to interpersonal aspects of the image, while M1's response was strongly linked to its compositional elements. Indeed, the effect on M1 was so strong that her negative response was evident in her tense posture and recoil from the image as well as her words.

ME1's response to this image also illustrates how prolonged connection with an image can change the nature of the response produced as meaning continues to flow. She initially responded to the interpersonal work of the picture as an 'offer' image (Kress and van Leeuwen 1996, p. 141). In this response, the image is seen to offer up the baby

to be squeezed and touched, putting the viewer in a position of relative power (that may result in a sense of responsibility). However, as the *agencement machinique* drew in more components, incorporating more personal and cultural resources as well as myself through continued discussion, a perceived mismatch with reality led to a changed response:

There's no blood, there's lots of gloves, the background is faded out and dark, it's like this child is born of the darkness, with some rubber gloves assisting, there's no people attached to it. And actually it's in stark contrast to the reality of what a caesarean section in theatre looks like – lights, bright, hands, bodies, people, noise – the atmosphere for the woman is tense, scary, I would say. There's no blood, they've suctioned everything away, it's a tidy, clean representation of what caesarean section looks like. (ME1)

Another example of the contingency of meanings generated in *agencements machiniques* with images came in teacher professionals' responses to the image of cakes shown in

Figure 5.11:

An attempt to teach science through different curriculum areas ... and that's the rhetoric of our current curriculum, so it's actually very inspiring. (TE2)

Oh yeah yeah [excitedly] ... I wish it was someone in my class. (T2)

It is a beautiful cake – but – it's a cake. Dialogue about cake is often going to be limited. (T1)

[laughing uproariously] I think it's one of those places where bringing two things together in a way that might seem interesting has led to then disgusting, disgusting consequences. It's a bit like watching one of those cooking programmes where they make beetroot and chocolate pudding. (TE1)



Figure 5.11

These varied responses provide an excellent illustration of Jewitt and Oyama's (2001) assertion that viewers 'use whatever resources of interpretation and intertextual connection they can lay their hands on' (p. 135). Here, TE2 makes a connection with her knowledge of curriculum policy and so sees a concrete enactment of that policy,

while TE1 draws knowledge of popular culture into his *agencement* and sees something quite different. Neither of these intertextual resources featured prominently in my own repertoire, and so I had seen little more than, as T1 described, 'a cake.' Again, this raised questions as to what meanings pre-service or novice teachers might generate with such images.

Overall, it seemed that, in my interviews, images from the Twitter chats could effectively mobilize practice and context knowledge in ways that might generate opportunities for professional learning. The *agencements machiniques* formed with images also enabled flows of affect which might result in both positive and negative responses, although sometimes the *agencements machiniques* were dominated by levels of resistance or braking. However, it also appears that details of images (specific elements of lexis and syntax) can sometimes subvert the message intended by the tweeter. The variation in professionals' responses to the same images further emphasise the highly contingent nature of potential professional learning. Thus the implications for informal professional learning within these chats, and the potential for using images from the chats in formal pre-service learning, required further exploration.

5.3 Summary

This chapter explored the ways in which professionals responded to images from the Twitter conversations during interviews. In it, I used the idea of *agencements machiniques* to help me focus on how the connected systems of interviewee and image drew in other components such as past experience, and on how flows of meaning and affect were triggered or resisted.

It appears that, at least during the interviews, the *agencements machiniques* created with professionals and images from the Twitter chats effectively mobilized knowledge and affect in ways that might generate professional learning. For example, as described above, M5's reflection on the role of the midwife perhaps represented a consolidation of her beliefs; and T3's response to the image in Figure 5.10 suggested he had picked up on the aspects of the activity that the tweeter had intended to broadcast. However, it also appeared that details of images can sometimes subvert the intended message, as with the focus on the hairstyle of the midwife depicted in Figure 5.1 and the lack of salience in the details of the window-drawing activity in Figure 5.9. The variation in professionals' responses to the same images also highlights the highly contingent nature of potential professional learning.

This suggests that learning from images during the Twitter chats may be intended or accidental, and that images may function to both facilitate and constrain learning.

Given the increasing tendency for images to form important elements of communication, not only on social media but also between individuals, it may thus be a good idea to introduce pre-service professionals to some of the ideas of visual social

semiotics. This might help them select and compose images they may choose to share themselves.

The next chapter continues to focus on the interactions between professionals and images, but now, following the notion of pedagogy of desire, seeks to identify forces and intensities that are generated within and themselves generate chat structures and behaviours.

Chapter 6 – Forces and intensities shaping flows in the

Twitter conversations

The previous chapters started to address the questions,

What images are shared during the two sample chats?

What do the images do – how do they trigger flows of meaning?

The analysis presented in these chapters gave some idea as to what is flowing through the images shared in the two Twitter conversations under investigation: affect, in the form of representations that emphasise care, compassion, pride or joy; and practice knowledge, in the form of awareness-raising messages, snapshots of practice or useable resources.

This chapter continues to address these questions. It takes as its starting point the idea that the flows of affect and knowledge in the chats are constituted not only in the meanings created in individual encounters between viewers and images, but also in the larger conversation practices that participants adopt. Following the sort of criticality fostered by a pedagogy of desire (Zembylas 2007a; Zembylas 2007b) introduced in Chapter 2, this chapter asks what forces and intensities, beyond those involved in the creation of meaning described in Chapters 4 and 5, shape these flows.

The analysis identifies three main forces shaping the flows: participants' conceptions of the technical affordances offered by Twitter; participants' notions of professionalism and good practice; and the sense of purpose of professionals participating in the chats, both in relation to the chats as a whole and in relation to their own role within them.

Some of the ways in which these forces produce lines of articulation and flight (Deleuze and Guattari 1988) – stabilizing and destabilizing practices within the chats and the interviews – are described.

6.1 Forces and intensities in the conversation spaces

The multiplicity of systems of intensities conjugates or rhizomatizes the entire agencement from the moment it is swept up by these vectors or tensions of flight. For the question was not: how to escape the order-word? – but how to escape the death sentence it envelops, how to develop its power of flight, how to prevent the flight from veering into the imaginary or falling into a black hole, how to maintain or release the revolutionary potentiality of the order-word. (Deleuze and Guattari 1980, p. 139, my translation)

In conceiving of the Twitter conversations as *agencements machiniques*, I am also conceiving of them as spaces in which forces act to influence flows of intensity. Deleuze and Guattari's (1988) spatial concepts of lines of flight and articulation, and the related concepts of smoothness and striation, provide a means of thinking through how the conversational flows are shaped and patterned. As described in Chapter 2, lines of articulation may be thought of as channels or grooves that constrain and direct: ruts that are made deeper by their repeated going over. Lines of flight, in contrast, are bursts of energy or differentiation that point to escape, to a vanishing point that is outside of the well-trodden space. Lines of articulation, then, may indicate the generation of new professional norms – new notions of appropriate professional behaviour, needed to operate within the online space. Lines of flight, in contrast, may represent both moments of liberation or creativity, and moments of uncertainty and risk.

While a line of flight might seem to represent a positive freedom and a line of articulation a negative, externally-imposed oppression, the quotation above suggests a more nuanced picture. The escape-route developed in a line of flight risks 'veering off into a black hole'; and the danger presented by a line of flight is not order in itself, but rather the 'death sentence it envelops.' In the following, I avoid labelling lines of articulation and flight as necessarily negative or positive features of the conversations. Chapter 7 will attempt to draw out how the tensions between these ordering and chaos-risking forces, and the ways in which they twist, braid, and knot (de Freitas 2012), shape both the virtual and actual of the conversations.

My analysis identifying these forces and lines of flight/articulation draws on the interviews I conducted with both practitioner and educator professionals. As well as exploring interviewees' responses to individual, specific images, the interviews also functioned as image-elicitation activities (Harper 2002). Their loose structure allowed interviewees to digress and tell stories or express opinions that were perhaps triggered by our conversations around particular images but not necessarily directly related to them. This chapter, therefore, describes interviewees' accounts of the Twitter conversations in general, as well as relating to the sharing of images.

For the purposes of presentation in this chapter, I have grouped the forces shaping the online conversations that I identified from these interviews into three broad groups: (i) participants' perceptions of the technical affordances offered by Twitter, which apparently restrict possible actions; (ii) their sense of professionalism and good professional practice, particularly in an online environment; and (iii) the purposes

participants ascribe to the conversations⁴⁶. In the following, I show examples that illustrate how, together, these forces contribute to varied and varying practices that shape the conversation space and the flows of knowledge and affect within them so as to both reveal and hide aspects of professional life, thus affecting the ways in which professional learning may unfold.

6.2 Technical affordances

The technological affordances available through Twitter primarily influence *how* things flow in the conversations, although they also have some influence on what flows. The options for action during a Twitter conversation described in Chapter 2 may seem simple enough: a user may tweet, retweet, reply, favourite or simply read without responding in any way. A tweet is limited to a maximum of 140 characters of text but may be accompanied by an image, and the text may include a link to a webpage, keywords in the form of hashtags, and “@mentions” of people whose attention the tweeter particularly wants to attract.

However, even these apparently straightforward actions may be refracted through a range of intentions and self-imposed conventions. As indicated in Chapter 3, the interviewees themselves had quite varied conversational practices, with some retweeting, favouriting, tweeting or commenting far more than others. The interviews suggested further variations in the meanings or functions ascribed to each action.

⁴⁶ It should be emphasised, however, that these three forces are not independent, and the ways in which they overlap and entwine with each other mean that this particular division is just one of many that could have been made.

Why retweet?

As described in Chapter 2, Twitter allows users to retweet tweets initially posted by others, thereby broadcasting them to their own network of followers. However, the reasons my interviewees described for retweeting someone else's tweet varied widely, indicating that they might ascribe different meanings to the fact of an image having been retweeted.

For example, M1 described assiduously retweeting the tweets of a particular user whose opinions coincided with hers: 'So if I can retweet [J] I always do.' In contrast, other interviewees had very strong feelings about the need to be selective when retweeting:

If something's been retweeted a lot, I'm not going to retweet it, because it's already been done. If it's something that I like, that I think is useful, and it hasn't been retweeted much I'll retweet. ... I might retweet it if I felt like it, but if it had been retweeted 100 times I wouldn't bother. (M3/ME2)

I get an awful lot of stuff, I can't follow everybody and I can't forward everything I get. You have to be selective. So I'm more selective about things which are promoting [causes I believe in]. (M4)

Several of the interviewees referred to the authenticity or reputation of the original tweeter in deciding whether to retweet something, and indeed this was explicitly described as important by M1, M6, T2 and T5, as illustrated in the following:

What I tend to do is to have a look to see who they are so normally in their profile they'll say they teach something so "Right OK, then you're not just a company trying to get a million followers." (T2)

For teachers such as T1, T2 and T5, who retweeted large numbers of tweets, reputation and personal knowledge acted as a guarantor of the value of the tweet:

I'd retweet things that are by people that I know that are really really good. You know like ... people ... I know personally, and I know they're amazing practitioners ... and their kids do really well, so that's worth sharing. (T5)

Among the teachers I interviewed, reasons given for retweeting particular tweets also included validation of the “coolness” of the content of the tweet:

A retweet's like a validation isn't it so I'd just be saying, "This is kind of cool."
(T5)

So if it's something that's like "That's amazing, I've never seen anything like that, oh crap I wish I'd thought of that" and there are some things like that, "That's amazing" I'd retweet things like that. (T4)

Sometimes there was also a suggestion that retweeting validated the retweeter:

A retweet is like "I've seen this, this is cool, look at this." (T2)

Among the midwives I interviewed, it was more often the perceived importance of the message carried by a tweeted image that led them to retweet it:

I'm not terribly sure I'd retweet it because um it doesn't have a huge message.
(M4)

I would without doubt retweet that one. Because it's just fun. And tells a message.
(M5)

Some of the interviewees described retweeting in order to bring new people into the conversation. For example,

I'll tweet again with different hashtags depending on the audience. I wouldn't retweet that it would just come again on PedagooFriday, I'd want to reach people who might not otherwise have known about PedagooFriday. (T2)

M6 described this as pretty much her only reason to retweet, but added that she would elaborate or expand on the tweet to add in her own voice:

I'd have something to say about it as well ... I would probably be telling other people that this discussion was going on. So I would probably share it and say something like "WeMidwives is discussing skin-to-skin ... join us now" or something. (M6)

While most interviewees indicated that they preferred to retweet things that they personally judged to have value, either because by retweeting they were giving some

kind of imprimatur based on their own reputation or because they were aware of the dangers of a flood of tweets being ignored, M5 described how her desire to recruit more people into the WeMidwives chats led her to retweet things she did not value, suggesting that she did not interpret retweeting as necessarily associating the content of tweets with her own user profile:

If I'm in a WeMidwives chat I usually do retweet fairly liberally because the more people that get involved in these things the better the communication and the sharing of information anyway, so to me it's a big family and the more people you can get involved the better. Whether it's a message that I'm particularly keen on or not, you know? (M5)

However, later in the interview, she responded to another image in a way that suggested that she did think the message of tweets she chose to retweet was important:

But I don't think I'd actually I don't know if I'd retweet that now. For the simple reason that ... although it's ... something that I'm interested in myself – I don't know if it's critical. (M5)

The same interviewee described characteristics that she felt would result in a tweet's amplification or spreading through retweeting:

I think the more positive that something is, or the more humorous or the more humble one is, it actually gets more attraction. Whereas anything negative doesn't. (M5)

This particular midwife appears to have a complex and varied set of reasons for deciding what to retweet, ranging from reaching out regardless of message, her perceptions of whether the message's importance is critical, and her sense of whether the message is positive, or the tweeter is perceived as funny or humble.

Why favourite?

Favouriting is another of the ways a Twitter user can interact visibly with a tweet.

While its name might imply that this function serves to indicate approbation, as with

retweeting, my interviews suggested that it was carried out for a variety of different reasons. These included acknowledgement of good practice or results:

Favouriting ... it's like ... an acknowledgement that you think that's some really valuable stuff and that you're grateful that people are putting stuff on there. (T6)

Some interviewees indicated that they would favourite a tweet because they liked the image it contained:

And I'd maybe favourite it or comment on it to say how lovely it is. (M1)

I'd favourite that because it's beautiful. (T3)

For some interviewees, favouriting had a "logging" function:

It would be two ways, it would be to acknowledge it ... and it would be a log for me. (M5)

Favouriting is things that I put to one side for me to read or follow up on later. (M3/ME2)

T2 described how favouriting had multiple functions for him:

If someone retweets something I've done I'll favourite that as a kind of "Oh thank you very much" ... I'll do a favourite as a kind of ... thank you, or as an acknowledging something ... The other thing that favouriting does, it will tell me whether I've checked something. So if I'm scrolling, if I'm like "Have I done anything with that image?" If I've, if I've what I'll tend to do is favourite it if I've, if it's been processed, for want of a better word. So if I've favourited something it means I've done something with it. (T2)

The above three quotes also illustrate how even when favouriting is seen as a means of logging something, it can be for a range of reasons, including identifying something as already acted upon, or as having the potential to be acted on in future.

As with retweeting, some interviewees indicated that whether or not they would favourite something depended on how many times it had already been favourited by others:

It depends how many times it's already been favourited to be honest because if something's been favourited a lot, I can't see the point in me favouriting it ... Favouriting is things that I put to one side for me to read or follow up on later. (M3/ME2)

T2, who had already described using favouriting in a variety of ways as shown above, also described how he used it to acknowledge or encourage tentative attempts at presence in the online environment:

There's a thing that people do that I haven't really worked out what it means, they'll send me a tweet that doesn't say anything, it'll just have ... my @ thing on it, me and a few other people ... I think it's a kind of, almost like a "hello but I haven't got the confidence to say anything, I'll just put your address on there." So I won't reply or say hello, I'll just kind of favourite it as a kind of "Well I acknowledge the fact that you put my thing on there." (T2)

In contrast to the other interviewees, T4 described favouriting as a very different type of action, one with more negative connotations:

Favouriting doesn't mean anything ... if it's not worth retweeting then it's not worth favouriting, do you know what I mean? I favourite things to get people to shut up normally, like "I've had a good long conversation about something and I've got nothing else to say" and you say "That's brilliant" and I go "Favourite." Done. That's like a social media full-stop isn't it. (T4)

Thus both retweeting and favouriting appeared to be carried out according to a varied set of internally- and individually-generated interpretations of Twitter's affordances. Perceptions of these technical affordances appear to act as a force that creates lines of articulation, norms that restrict or control individuals' (professional) Twitter practice but that may not always be shared. These lines shape flows within the two Twitter chats, sometimes enabling the circulation of meaning and affect among chat participants, sometimes allowing them to circulate beyond the chats into new spaces, and sometimes resisting or blocking their movement.

Tweeting, tweeting images and replying

Choices about original tweets appeared to be governed mostly by users' sense of the conversation's purpose(s) and their professional judgement regarding appropriate content, described in detail below. Decisions as to whether to tweet an image at all appeared to be made on the basis of perceptions around the functions of images.

In the interviews, professionals from both groups acknowledged the potential power of tweets including or consisting of images. Several interviewees commented on what they perceived to be the function of images, apparently recognizing interpersonal and textual metafunctions as well as representational.

Interviewees from both professions acknowledged that images act to attract attention and convey information. For example, M3/ME2 described how:

Yeah from a distance all tweets look the same, all text tweets look the same, you don't know what they say until you've read them whereas if there's an image there, you know immediately. (M3/ME2)

Indeed, among the teachers I interviewed, the ability to engage the viewer, to attract and hold their attention for more than a fleeting moment, and to allow rapid interpretation and application to the viewer's own context seemed to be most important in using images. T1 commented that '*images catch the eye,*' and so helped advertise the presence of something interesting in amongst his feed of tweets. T2 also described images as attention-grabbers, but noted in addition that they allow rapid assessment of the quality or usability of a resource:

Well without the image, I'm quite um what's the word? I'm not – I'll respond more to images than to text. So that's something that I try and do as well, because I think if you want to share images, well whatever you want to share with anyone, then they're more likely to take note of it or to respond to it if it's got a picture with

it. So this is easier for me to access in terms of information because I can see immediately [how to use it]. (T2)

The assumption that images make things more engaging extended to classroom activities, too, as comes through clearly in T2's assessment of the knowledge vomit activity:

Because it's the vomit thing which is quite disgusting so the kids will already engage with that. It's a nice image as well. It's quite a nice picture in terms of it's a quality picture, you're not just, like, you know, it seems like an artist or someone very talented has written it, so kids will automatically think it's cool. (T2)

Interviewees among the midwifery group also described images as enhancing messages, or conveying them in their own right. For example, the caesarean section image discussed in the previous chapter prompted the following two comments

During the chats, people will draw on images to enhance their messages. (M6)

There's not a lot of words, but there's a big huge amount of information you can find from it. It's powerful, it's a little, a very simple image with few words that has a big message. (M4)

Here, there is some indication that the representational, interpersonal and textual functions of this particular image not only allow for rapid meaning-making, but also provoke an affective response. Indeed, although engagement and rapid information transfer were recognized as functions of images among the midwifery interviewees, there was a somewhat stronger focus on images as expressions of values:

When you put an image up, in a way it's a value statement. Something you read, you have to take the time to read it before you but an image is in your face before you can even think about it. (M3/ME2)

Images were seen by some as extremely powerful, capable of motivating or mobilizing responses that words alone might not, indicating a sense that images allow complex meanings to flow rapidly. Two of the midwifery interviewees referenced the then

recent publication of photographs of the body of a three-year-old Syrian refugee, drowned and washed up on a beach in Turkey (H. Smith 2015). As M3/ME2 put it:

*... they're immediate. And they're in your head far more quickly than words are... Well it's the obvious one isn't it – that Syrian boy. The impact that that's had is massive. In more ways than if it was a newspaper report saying a three year old boy has drowned. You know it's had a massive, massive – and I think images can do that in a way that words can't. So I think we need to be careful with them. You need to be careful with words as well but you know images are **there**, and they're in your brain very quickly, and they stay in your brain a long time. You don't have to process them quite as – you don't process them in the same way as words. You can shut words off more easily than you can an image. (M3/ME2)*

Here, she seems to recognize that, as well as having an immediacy and shock value not always achievable in text, images in part derive their power because it is difficult to forget something, to “unsee” it, once it has been seen.

The final way in which a participant might interact with a tweeted image is through commenting using Twitter's “reply” function, which is effectively the same as tweeting but with the added dimension that the reply tweet is linked to the original tweet. The primary reasons the interviewees gave for commenting on images related strongly to their conceptions of the purposes of the two Twitter chats, as discussed in section 6.4 below.

Reasons for not interacting

Just as important as the meanings or functions ascribed by participants to these actions were the descriptions of actions that the interviewees did not approve of. These chiefly revolved around a distaste for “white noise.” Interviewees noted the sheer volume of tweets, indicating not only that they could not forward everything but also that they

would not want to. This might be because of a lack of value or interest in the tweets received:

You get loads of these things coming on ... I just ignore them, go past them all. So I'll have a read, I'll read them, but they just sort of pass by ... they're a little bit like spam ... They're a little bit chain-lettery aren't they, they just fill up your Facebook or Twitter feed ... It does not necessarily add to what you're wanting on social media. (M4)

Or it might be because something has already been retweeted or favourited "enough."

As one interviewee put it, he did not want to be a 'spamming tweetie tweeter' (T2).

Another described teachers who 'post things just to get retweets and attention and stuff, and I'm like get over it' (T4):

Well it's very easy to agree isn't it, and feel like you're part of something and feel like you're doing some good in the world by doing that. But actually you're not really because it's like white noise. (T4)

Some people also saw Twitter as limited in what could be achieved:

I think Twitter is all very well but unless you, I hope I kind of this is something I've been thinking about a lot recently that I actually need to write, as opposed to just tweet. (T2)

Thus it appears that perceptions of technical affordance generate lines of articulation controlling what *not* to do, as well as what to do. Together, these lines of articulation form shared and unshared conventions, simultaneously allowing and restricting the flow of affect, opinion and knowledge within the two conversations.

6.3 Sense of professionalism and good professional practice

A second set of lines of articulation seemed to be generated by practitioners' notions of what constitutes good professional practice. This included ideas about good (and allowable) behaviour in the online environment, when acting in that environment as

identified members of their profession. The focus of the interviews on images shared in the two Twitter conversations naturally meant that online actions were more often explicitly referred to; however, some aspects of interviewees' more general notions of good practice also emerged.

Individually-determined rules for action

In terms of online professionalism, the interviewees touched on issues including the public nature of Twitter, permission and identifiability. However, despite the existence of formal guidelines and codes of practice addressing some of these issues (e.g. GTCs 2011; NMC 2015), these were only rarely mentioned in the interviews. When they were, it was often with uncertainty or disagreement.

M5 worried about the legality of posting unreferenced images:

You don't know the rights within or between countries. In relation to pictures ... I don't know what where you'd stand. (M5)

M3/ME2 was also not sure what was allowed, or by whom:

I personally wouldn't put up an image of myself in a uniform identifying where I was from ... And also, I'm not entirely sure it's allowed. By whoever. (M3/ME2)

None of the teachers I interviewed referred to formal guidelines or codes of conduct; three of them described running images they posted by their schools, 'to make sure it's OK with you know the higher powers that be' (T6), or, alternatively, simply using the school's account rather than their own, if they felt there was any doubt as to whether they should share a particular image. This may reflect a similar level of uncertainty as to what is and what is not formally allowed, as pointed to in the midwives' comments.

The only person to refer to specific formal guidelines openly questioned them:

The NMC⁴⁷ are not very happy about having pictures like that posted even if you're not discussing anything at all of a professional nature. But I'm not so sure about that ... we really need to talk about what's appropriate because these things are.
(M4)

This suggests a possible origin for the uncertainty evident in the quotes above: unless the rationale for rules is clear, as well as the rules themselves, it may be difficult for professionals to apply them in exercising their own judgement.

A very public space

Most of the time in the interviews, instead of using formal rules to decide what actions to take online, interviewees described detailed but often contradictory notions of appropriate behaviour. The overarching concern was the '*absolutely and utterly*' (T2) public nature of the conversations, as exemplified in the following comment:

Anything I'm putting online to share on Twitter I have to be aware that my students can see, parents at the school can see, the local MP ... follows me, so I know that whatever I post out there is very much – as soon as you launch it, anybody in the world could randomly see it ... you know the impact you have if you put anything out there on the internet is very very obvious. (T1)

As described in Chapter 2, Twitter allows users to follow other users, effectively subscribing to their Twitter streams and receiving everything they tweet via the Twitter app. Tweeters have no control over who follows them, leading to Bruns and Moe's (2013) comparison of tweeting to talking at a public rally.

Interviewees' comments revealed a range of reasons to worry about the public nature of the conversations, and thus a range of ways in which that publicity generated lines of articulation. For example, T1 recognized the potential danger of written records of comments made in the heat of a particular mood:

⁴⁷ Nursing and Midwifery Council.

If you have a bad day, you keep your mouth shut. You act professional and you don't bring your own profession into disrepute ... you still don't want to put everything written down. (T1)

T2 described the need to maintain a professional distance from students:

The kids at school, they ask me all the time you know are you on Twitter, what's your Twitter handle and I don't tell them about this one ... oh I tell them I have one and that I've got a thousand followers, and they're welcome to look at it. But I say if you follow me, and I know it's you, and you try to contact me, I'll block you. And I say "You're welcome to look at it, you'll be bored, because it's not for you, it's for teachers." ... Only because it makes you vulnerable and complicates quite a lot of things if kids start contacting you through that process ... You know open to accusations of inappropriate contact. Or if some students follow you and others don't, that could be seen as some kind of favouritism. You want to keep the relationships clear – you know, keep some distance, you're their teacher and you don't want them to blur the line, think you're a mate or whatever. And you don't want to leave yourself open. (T2)

Although this seems like a secure line of articulation, the slippage from the definite 'I don't tell them about this one' to 'You're welcome to look' indicates a certain smoothness that might open up to departures from that line. This raises the question of whether a line that escapes across the smooth space would be a positive opportunity for new connections and configurations between teacher and students, or a flight into a potentially damaging lack of professionalism.

The fear of being followed by students was in contrast with midwives, some of whom expressed pride in being followed by non-midwives including mothers they had looked after and student midwives. One midwife described being delighted that a student had recognized her when she gave a guest lecture at her local university:

When I went into the classroom ... one of the student midwives ... she said "I follow you on Twitter" and I said "Do you?" and she said "I do" and I said "Oh, happy days!" (M5)

Thus there seems to be a substantial difference between some members of the two professional groups in how their sense of professionalism creates lines of articulation around follower-network membership, and thus to whom the intensities of the conversations might flow.

The public nature of the space and users' lack of control over who follows them were often linked to upholding the reputation of the profession as a whole. Concerns of this type were raised in relation to depictions of both practices (T1, T2, T3 and T6; M3/ME2, M4, M5; TE1, TE2, ME1) and personal presentation in tweeted images (M2-M6, ME1). However, differences in expectations regarding follower networks shaped these concerns in different ways. For example, all but one midwife interviewee were upset by the photograph of a midwife with long hair tied loosely in a plait (Figure 5.1), as described above in Chapter 5, because they felt it did not live up to professional standards relating to hygiene and infection control. This was, therefore, potentially giving a bad impression to those (presumably other health professionals) who would make the association, and possibly setting a bad example to students. However, most of this group (with the exception of ME1 and M3/ME2, as discussed in Chapter 5) were pleased with the friendly and approachable image the same picture presented, which was felt to be very good for current and future clients who might see it. Thus the nature of the reputation to be protected reflected broader notions of professionalism and good practice.

Permission and consent: who can decide?

Interviewees in both professional groups cited the need to obtain permission or consent when tweeting photos of third parties, particularly children. However, there was substantial variation in ideas about when permission was needed and from whom. Most midwives and teachers cited the need for permission from parents, but some sought validation from more authoritative sources:

I wouldn't post photos unless they were of me and other midwives kind of thing. I don't tend to put up a photo of a baby unless it was a photo that was owned by – the rights were owned by the [health service] or whatever. (M2)

For some teachers and midwives, this line of articulation ran particularly deep, leading to a blanket restriction on images of children regardless of parental consent. For TE2, this was connected to a fear of 'unsavoury characters ... paedophile rings ... who want access to pictures of children', leading her to feel that no pictures of children should ever be posted to public social media sites. However for midwives, the blanket ban seemed to emerge from a sense of responsibility arising from an unknowable future. This is exemplified in the following reaction to a photo of a conversation participant's sister and young niece:

I don't think you've got the right to do anything like that ... even when [the parents are] giving permission. A mother who sees that at one point might have one feeling about it and then – six months down the line, in a different emotional state maybe look at that and it could have very negative impacts. (M3/ME2)

Here, this professional does not blindly adhere to guidelines or rules but rather uses her professional knowledge of emotional variability. This might seem like a line of flight, but it is perhaps a freedom to choose to constrain oneself even more than necessary; a line of flight ending in a deeper line of articulation barring the tweeting of any images of children under any circumstances.

In contrast, some softening of this line of articulation appears in the following comment, made in response to the same picture:

I would never use an image without signed consent. ... if I had a photograph of my sister's child ... I wouldn't post it without her permission, put it that way. But I suppose we're all different and as long as it's not some random child then it's at her discretion ... I think it's down to the mother, really, I don't think an aunt can give consent. It depends on how close she is I suppose. It's a nice image though so if anything her sister is probably quite proud of the picture. (M1)

Some smoothness in the space allows the interviewee to slip and slide between 'never' and 'at her discretion,' and the loveliness of the image may be a tentative line of flight, providing a means of escape from rigid requirements, but risking the potential danger to the future mother identified by M3/ME2 in the previous excerpt.

Anonymity and identifiability: protection versus trust

Another concern, raised by all of the midwives I interviewed except ME1, revolved around anonymity and identifiability. However, for this group, this appeared to be both an extremely important and variously interpreted issue. The following excerpts from responses to the image of a midwife explored in detail in Chapters 4 and 5 illustrate the unsettled striations produced by different lines of articulation. In the first, a desire to be certain of authenticity leads to a perceived requirement for identifiability:

I'd like to see a name badge or something ... I would expect especially in social media you'd expect "Hello my name is" whatever. Midwife or midwife manager, could be like HOM⁴⁸. I have no idea, [she] could be a healthcare attendant, she could be a student midwife, or she could be a volunteer. (M5)

On the other hand, the following excerpts provide strong arguments for avoiding identifiability to protect both the midwife and her clients:

⁴⁸ Head of Midwifery.

She's identified as a midwife and you know her place of work. Anything she now does on the internet, whether she wants to or not will be in relation to that. So if she's got a snapchat photograph of herself out with her pals in [town], it can be put side by side with that ... And judgements can be made, can be used ... she's setting herself up and so I'd say she's quite vulnerable and therefore the women she's looking after are potentially vulnerable. (M3/ME2)

This is an image of a midwife in uniform, in her place of work ... it's ill-advised, for social media. Because there's the possibility of identifying where she's from, and therefore of – well if she starts talking about any cases anonymously, to illustrate what she's saying on the chat, then there's the potential ... of looking in to who the person is she's talking about. It challenges the anonymity of her professional stories. (M4)

Despite this apparently deeply-etched line of articulation for M4, when subsequently describing her own Twitter presence, this line of articulation appeared to be capable of erasure. This possibility was suggested when, having described herself as having much to contribute to others because of her extensive practice knowledge and experience, she went on to say:

[My Twitter handle and the caption included in the image] clearly tells you my name and where I work but I don't think that's a problem. If ... we were discussing ... customers or patients ... you have the large pool and it doesn't have to be personal experience which means that you dilute that and anyway the reason I stayed [identifiable] is because I've always said that I feel confident that what I say on social media is shareable. And I'm standing up for that [proudly, laughing] ... So I've always said I'm not going to hide behind anything. Say who I am. (M4)

Thus it appears that a tension is generated by her belief that an experienced professional should be able to stand by what she says on social media, which generates a line of flight out of the articulation of anonymity that she applies to midwives in general.

So it seems that different practitioners created their own, differing, lines of articulation around whether tweeting midwives should be identifiable, describing general (if self-imposed) rules rather than considering each instance in its own right.

M5 combined her concerns about this midwife's lack of identifiability with concerns about anonymity and consent to a rather extreme degree:

It's at the entrance of a ward, but a lot of the stuff on that board seems to be blacked out⁴⁹. Which is good ... Sometimes I'd be nervous about stuff like that ... I'm always on about privacy but all that stuff seems to be blacked out so there's no identifiable stuff for a woman and there's no women walking in the corridor. Although there's a girl there standing at the back of that girl's shoulder, standing with her head turned away. Has she consented to being in that picture? ... That photo could be blown up or it could be edited, there's a lot of technology out there that you know ... there's analysts out there who could identify where exactly ... that is ... So if I was a midwife or manager working in [that hospital] and I was looking after a caseload of women you know like 10 or 12 it wouldn't be difficult for me to do a deductive process to say oh there's Mary or Siobhan or whoever in the background there. She must be in ... if I can, I'm sure other friends of the woman who's in the background there, there's friends of hers that could identify her and know she's gone in. That's the problem. (M5)

In the interview, we did not discuss precisely why this might be a problem, but it seems clear that a woman's right to privacy around childbirth was a particularly important line of articulation in the *agencement machinique* M5 makes with this image.

While all of the midwives I interviewed believed that anonymity was important for their clients, three described a sense that concerns over identifiability might be taken too far when applied to images of babies. As M4 put it,

What's wrong with a picture of babies? I don't have a problem with pictures of babies. I know some people do. But surely that's up to the parents isn't it. And what's one baby between friends anyway, it's not exactly identifiable. ... There was something about some midwife who was in trouble for showing a placenta ... You do get lots of pictures of placenta actually. But that particular one for some reason caused a bit of furore and said there shouldn't be permission for that. My goodness, it's just a bit of waste really, it's finished with! Huh! I mean in terms of identifiability, I don't think anyone's going to look at a placenta and say "That's Sheila's, I'd recognize that anywhere!" (M4)

⁴⁹ In fact, nothing is blacked out in this image.

It seems that M4's assumption that photos of babies (and placentae) cannot be differentiated creates a line of flight away from the rigidity this same midwife expressed around pictures of midwives.

All of the teachers I interviewed expressed views that suggested a deep line of articulation proscribing the sharing of images of children on social media. As T3 said,

Maybe it's slightly different with the older kids, but because mine are only 10-year-olds no, I definitely don't take their pictures. But I do, what I do is I do get their parents' consent, and I put a camera in the room, and I take pictures of them but it only goes to their parents ... But it doesn't go on any social media at all. (T3)

While this teacher is very definite about the non-allowability of putting photos of his students online, he contradicts himself over whether he takes photos at all, indicating a less rigidly defined line of articulation than first appears. His uncertainty about whether it would be the same with older children suggests that he may not have a completely developed and settled rationale for his self-imposed limitation.

However, as shown in Chapter 3, a substantial fraction of the images shared on PedagogooFridays show children engaged in school activities. Possible reasons why such images might escape this particular line of articulation, relating to the perceived purposes of the PedagogooFriday chats, are discussed in the following sections.

From the above, it seems that, as with the technical affordances, codes of practice and notions of professionalism are forces that may create tight (but nevertheless varying) constraints on what circulates through the *agencements machiniques* constituted in the professional conversations. For example, the popularity of images tweeted with the hashtag #wemidwives that included positive, uplifting messages, or images related to

skin-to-skin, is testament to the importance of these in the chat participants' understanding of their profession. Similarly, the popularity of tweets illustrating resources or activities using DIRT (@Chilledu 2014), Bloom's taxonomy (Anderson et al. 2001), growth mindset (Dweck 2012) and so on suggest particular teacher conceptions of good practice. The uncertainty about images of children may explain the relatively low level of interaction with tweets containing such images. In both cases, professional learning, either through changed practice knowledge or a developing conception of professionalism and the good professional, may unfold.

The final force affecting flows within the Twitter chats relates to participants' sense of purpose in relation to the existence of the chats and their own participation in them. This is explored in the next section.

6.4 Sense of purpose for Twitter conversations and participation

therein

Sometimes you think you're very isolated in midwifery, because you're autonomous, so I think sometimes something like [the WeMidwives chats] is very powerful. (M5)

It's not a huge organized movement it's you know it's "You know what, I still love me job, here are some good resources, do you want them?" and that's it. (T1)

A third force that appeared to influence the conversational flows was participants' sense of what the conversations are for, and what their own role is within them. The analysis suggested a range of (interacting) purposes.

One thing the interviewees seemed to have in common was a belief that the Twitter conversations they engaged in contributed to the creation of real professional networks. As M6 put it,

*People perceive Twitter as in inverted commas social networking whereas actually it IS social networking. It's networking in a **positive** light. (M6)*

Broadly speaking, the professionals and professional educators I interviewed described the Twitter conversations as spaces that were created to allow the flow of affect and practice-related knowledge. While these were often strongly related, sometimes tweets were interpreted as functioning more to spread affect, and other times more to spread knowledge. This was consistent with my own analysis of the *agencements machiniques* formed with images in my interviews, described in the previous chapter, in which both knowledge and affect had been mobilized together. In the following, I shall deal with those purposes more directed towards affect first, and then go on to discuss those more directed towards knowledge.

Affective flows

Both groups described the conversations as places where they might encourage pride in one's work; boost morale; and create supportive connections:

When we have a discussion on Twitter then it supports, we support each other really. (M5)

The very nature and intention of Pedagogoo is about sharing positives and that's what it's all about. (T1)

Becoming-proud

Sometimes participation in the WeMidwives chats was a means of boosting one's own morale:

I copied @midirs so that's Midwifery Digest and WeMidwives because WeMidwives is um – [giggles] my buddies ... so I wanted my colleagues in midwifery to acknowledge my um achievement I suppose. (M1)

Sometimes, it was more about boosting the morale of others by praising their work (or the work of their students, in the case of teachers):

Some days you know what, I've got half an hour, I'm sat with a cup of tea on Twitter, I'll start chatting with people about what they've done, ah that's really great, you should tell the kids how proud you should be of them and stuff like that. (T2)

Other times again, it was about reminding colleagues of the positive aspects of their work:

It was just a nice message to say to other teachers that you know, parents can be generous, and how parents can be supportive, and – it's like a nice feeling. (T3)

For some teachers, the chats were a place where they might find an audience for pupils' achievements, and so boosting their students' morale:

If kids know that they've got an international audience looking at their work going "That's nice that is," you can't go wrong with that. (T2)

In fact, the words 'pride' and 'proud' occurred in many of the interviews with both teachers and midwives.

Sometimes, the midwives I interviewed appeared to be trying to remind others as to the nature of good practice. This was particularly true for M6:

Yeah I always try and tweet about being kind? Because I think it's a basic for all nurses and midwives and for all health care professionals ... (M6)

Generating real relationships

While none of the teachers I interviewed referred directly to supporting student teachers via PedagogooFridays, among the midwives I interviewed, the importance of offering support to student midwives was raised by all except ME1.

I think you get the same people interacting every week and like there's one or two students who have tweeted "Starting first day on A ward tomorrow," or "Had a really tough shift today," and I always try to respond to those. (M1)

It was like they were going through a difficult patch at the time. It was just to see the bigger picture. You know like everything isn't learned just in one day, it's acquired, things like that, remind them that things take time and that's OK. Kind of nurture them a bit. (M5)

In fact, M5 seemed to see her role within the chats as particularly generative of encouragement and support for students. Along with M1, she described forming ongoing, personal relationships with particular students (as well as other qualified midwives) that were generated through and enacted on Twitter:

... a student that I had linked with [through WeMidwives chats] was having a difficult time. And I challenged her to tweet one positive thing every day. Which she did do ... she's really flourished now ... and it's beautiful to see it. So that's good evidence that the kind of support that Twitter can offer is real, that it can change people's lives. (M5)

This distinguished M1 and M5 from the other midwives I interviewed, who tended to discuss support in generic, rather anonymous terms. This was in contrast with the teachers, all of whom (except TE1 and TE2) described forming strong and personal relationships with other practitioners, many of whom they never met, but with whom (as T1 described) they might have a private phone conversation if they needed more support.

Creating opportunities for positive experiences

Finally, some midwives explicitly identified the chats as places that create opportunities for midwives to practice mutual compassion and care, important professional values that were perhaps insufficiently present in the workplace (see below):

That's the other thing that I tweet about ... midwives supporting each other... respecting each other and recognizing each other's work. And I think we should be praising each other ... I think it's a big help in promoting morale and actually recognizing midwives' contribution. (M1)

Similarly, for some teachers, the chats were places which create opportunities for others to have positive experiences through the act of celebrating their practice; opportunities that, as with the midwives' exercise of compassion and care, might be insufficiently present in the workplace (see below for further discussion). This attitude was particularly clear in interviews with T1 and T4:

That's why I like it. It's that – everyone going “Look at this! Look at that!” you know, getting all excited about the positives of their week, or their new resources they tried out and worked, you know and some stuff we try out doesn't, you know what I mean? For every new resource we have that gets churned out and we share widely there's things that fail in the classroom, but you know the profession doesn't need people constantly going on about their failures and moaning and so on and so forth. There's frankly enough negativity out there. Sharing the positives, sharing new ideas, sharing what works, and that lift that people get from seeing the positives. (T1)

You know the Guardian's Secret Teacher? To me [the Pedagoofriday conversations are] like the Anti-Secret Teacher. It's like the Secret Teacher is like my job is shit and my manager doesn't get me and I can't do it and it's all too hard. And I mean, Pedagoofriday says “You know, hang on, it's going to be alright. Look at this awesome stuff. You can do this. Everyone can try this. Look what I've done.” This is what, it's a message of positivity, and a message that you can do things and make a difference. And that's really important. I mean being part of a positive learning community. A lot of teachers are very isolated in their classrooms, so for me, sometimes even the quality of what people are doing for Pedagoofridays I'm like I don't really care but they're doing it. I'm not compelled to go and try what they're

doing, or go and experiment with that, or any of those things⁵⁰. But it's part of we're here together, and we're doing something together because we believe in it, and that's what's important. (T4)

Together, these senses of purpose constitute forces that influence the kind of affect flowing within the conversations (positivity, celebration, pride, support). They seem to be symptomatic of the presence of a productive desire:

There is, in fact, a joy that is immanent to desire as though desire were filled by itself and its contemplations, a joy that implies no lack or impossibility and is not measured by pleasure since it is what distributes intensities of pleasure and prevents them from being suffused by anxiety, shame, and guilt. (Deleuze and Guattari 1988, p. 155)

They seem to create new lines of articulation along which positive expressions can flow unimpeded. These, then, are in turn likely to influence the purpose participants ascribe to the chats, in a complex, responsive relationship. These co-constituting forces and intensities are explored in more detail in Chapter 7.

Flows of knowledge

The other main purpose of the conversations described by the professionals I interviewed was to facilitate the flow of practice knowledge. Both groups described wanting to engage in dialogue about knowledge and practice:

... statistics about caesarean section rates in Brazil ... I'd probably retweet those as well, because they'd be startling, and so there'd be discussion about that. (M4)

You look for things of that sort of scope that you can get your teeth into for a bit of dialogue. (T1)

⁵⁰ Although T4's comment here shows that not all practices will be effectively spread to all chat participants, her tone of voice and responses to some images suggested that she is selective, rather than inactive, in picking up new practices to experiment with.

'The power to change': a space for midwifery practice-advocacy and practice-change

Among the midwives I interviewed, the conversations were also frequently seen as places to raise awareness, promote a philosophy or advocate for a cause:

I tweet a lot about normal birth and promoting reduced caesarean section rates. I tweet a lot about mental health, about perinatal mental health, post-traumatic stress disorder. I tweet about issues that are important to me. (M1)

I prefer more kind of tweets that are more factual, rather than fun. ... generally if I'm using the WeMidwives hashtag I will tweet a fact or like some issue ... usually If I'm interacting in a conversation like that it's normally either skin-to-skin or promoting compassion or promoting normal birth. (M2)

Related to this, some midwives saw the chats as places where they might attempt to change practice:

You occasionally have newcomers coming in. I mean you can only change things very slowly anyway. Because if you can get one or two extra people involved or even retweet some of it then that's going to have some effect, it will spread the kind of word. Social media's got the power to change things quite dramatically since the reach of it really. (M4)

They might be people who are keen on promoting say skin-to-skin in theatre, or it might be delayed cord clamping, or active management of third stage labour – you know that kind of stuff. You know a lot of that stuff the evidence is there, but there's often a delay with evidence to catch up in practice.

These kinds of issues, concerned with a particular practice knowledge (“normal” birth, skin-to-skin, “seeding” with vaginal microbes following caesarean section), were often wrapped round a conception of good midwifery practice, specifically one which avoids medicalizing or pathologizing childbirth. This may suggest that this particular conversation had brought together a network of like-minded people:

I assume well the people who follow me are all midwives or both midwives and activists ... So I suppose, because I set it up with that view in mind, that I imagine that people who have similar views to me will be interested. So that's who I think is going to see my tweets. (M3/ME2)

They also suggest a line of articulation within the space, concerning what may be talked about, that may be born of a line of flight from a more clinical vision of midwifery.

'Off-the-shelfable': a space for freely sharing teaching practice and resources

Among the teachers, there was also a strong emphasis on sharing/spreading what participants perceived to be good practice and ideas. T1 imagined readers of his tweets as *'other education professionals looking to not reinvent the wheel'* and described the conversations as *'being entirely about professionals sharing best practice'* (although it is clear from his comments above that he saw this as having an important affective energy, as well as simply facilitating professional learning). T2 referred to a *'space so that teachers can share things that are tried and tested.'* T4 described the professional duty to share as *'an ethical thing.'*

To facilitate this flow of practice, tweets with the hashtag #pedagoofriday were often of resources that could be put to use by others:

It's a photo of the resource we used. There's also online downloadable free ones sat there for anybody who wants to use it because it's you know why make this stuff and not share it. (T6)

T1 contrasted this free sharing of resources with other social media sites:

Obviously the landscape's changing with people paying for resources at the moment. Erm, not my style. And I figure you know if some teachers spot that and go "You know I like that" – take it. (T1)

T2 described his own reason for participation in the conversations very strongly in these terms:

... resources that you can go and use in lessons quite quickly, so they're short or they might be downloadable, they're not like "Oh wow I need to go away and make

something, that's going to take me quite a long time to do." It's quite off-the-shelfable, if that's a word, that's a verb that I'm making up for tonight! Um so yeah it's quite instant stuff. It's quite helpful for teachers you know they're very very busy people and something that they can just go "Oh I can do that tomorrow morning." (T2)

Here we see an emphasis on speed and ease of uptake which came through in several of the interviews, suggesting that for some the conversational flows were shaped by a line of articulation around instant usability. However, for others, it seemed more important that images were sources of inspiration generating new ideas:

When I first started going on Twitter, and I started going on all these edchats⁵¹ and edchatuks and stuff and at first they seemed like a good community to be in, you know talking about questions ... just debating ... But then after a while I found that it was just the same old thing, going on and going on ... the difference with PedagooFriday is it's mostly pictures, and it's just pictures that gives me lots of ideas. (T3)

For at least one teacher, this back-and-forth flow of practice knowledge had been absent from his professional life before he became active on Twitter:

The first things I started tweeting was I think that "Oh here's some ideas for lessons." ... because I didn't have that, I wanted something like that so I made my own ... I wanted other people to have what I hadn't had, what I'd wanted ... it's really important to share ideas that engage kids for learning and help them improve and attain and achieve. So that's the kind of value or principle that I'm coming from. And the process of doing that through Twitter means that I will get more ideas back so people get back to me and say "Oh that's a great idea, this works," or "What about this resource?" So I think the more you share the more you get back. (T2)

The same teacher also described how important it was for the ideas to be, in his judgement, good:

I won't do that with things that I think are pants. So if it's something rubbish or it won't work or I don't agree with it or whatever then I won't retweet it. There's a quality assurance process. (T2)

⁵¹ Edchat and edchatUK are other Twitter chats involving teachers.

However, as will be explored in section 7.2 below, this quality assurance process seemed to be a private one, so that a ‘rubbish’ idea would not be publicly identified as such.

As with the midwives I interviewed, affect and knowledge were often wrapped up in each other for teachers:

It's fantastic if you're sick of a pile of marking you want 5 minutes of looking for positive inspiration having a scan through that's great. (T1)

So it is a really good you know – atmosphere there. There's a good culture there. A real culture. It's really nice, the sharing that's going on. And the inspiration. (T3)

In both of these excerpts, inspiration refers to new ideas – the flow of practice knowledge within the chats – but the use of the word “inspiration” implies a productive desire that is linked to a positive experience and a good culture.

For T4, the interaction between the desire for new ideas and the desire to spread positivity resulted in quite strong opinions on what PedagooFridays were for, and what they were not for:

Those sort of things are like truisms though aren't they: “Be an active learner. Ask questions. Take risks.” And I frankly, I'm over that. That, that's not a PedagooFriday tweet, PedagooFriday should be, “This is the best thing from my week”, this is not just some kind of edu soapbox. And fair play, people use the hashtag to promote their ideas and what they want to say or whatever, I kind of don't have a problem with that because I can filter it out it's not a big deal, but a PedagooFriday tweet to me is the best thing I've done all week. It's something inventive, it's my classroom experience. (T4)

Thus sense of purpose for the chats seems to operate as a third force, a productive desire generating more lines of articulation and flight along which certain intensities of knowledge, affects and desire can flow but which act to block others. Together with participants’ perceptions of Twitter’s technical affordances and their sense of

professionalism, this significantly impacts on what flows within each conversation, and hence on what opportunities for professional learning may unfold.

6.5 Summary

This chapter has explored how comments made during my interviews with practitioner and educator professionals suggest a range of forces that work within the *agencements machiniques* constituted in the conversation spaces to shape the flows of affect and knowledge within them. It has identified three such forces: the technical affordances offered by Twitter; participants' notions of professionalism and good practice, within the online space but also more generally; and participants' sense of what the purposes of the conversations are, and what they might do by participating in them. The chapter considered some ways in which these forces co-construct the space, generating lines of articulation and flight. These in turn may be in the process of generating new norms of appropriate professional behaviour in the chats, but because participants' interpretations of Twitter's technical affordance remain varied, these norms are yet to be settled and commonly shared.

These lines impact on affective and knowledge flows within the conversations, which then in turn influence the perceptions of users that generate the forces, leading to complex, mutual interactions. The following chapter focuses on examples of these interactions, considering in further detail how these forces and the lines they produce shape the possibilities for, and some of the actualizations of, professional learning in the chats. Because the forces are not independent, they overlap, interfere and interact

in multiple and complex ways, twisting, braiding and knotting the lines of articulation and flight in ways that further constrain, or generate opportunities for, professional learning.

Chapter 7 – Professional learning, unfolding in the flows

This chapter continues the examination of the flows within the Twitter conversations started in the previous chapter. However, it now focuses predominantly on the question,

How do the images shared during the Twitter chats contribute to professionals' learning and development?

The previous chapter showed how different forces working within the space might produce lines of flight and articulation, lines that shape what flows and how those flows are spread or impeded. Each of these lines shapes the flows by influencing what is posted, and how certain posts are accelerated, amplified or blocked, influencing how affect and knowledge circulate within the conversational *agencements machiniques*.

They thus influence how professional learning unfolds through the flows. In this chapter, reflecting on how the chats contribute to professional learning, I suggest that these flows might be considered as generated by the particular type of *agencement* that is a *desiring machine* (Deleuze and Guattari 1988; Massumi 1992). Learning may occur in an actualization of an image-viewer/response, on occasions where the resulting *agencement machinique* produces the individual as a site in which thought may take place (Deleuze 1994). Alternatively, it may be developed through repetition and difference, as participants acquire the habit of their conversations and start to differentiate between what initially might seem unremarkably varied repetitions.

I then identify ways in which some lines of articulation and flight interact with each other, forming twists, braids and knots. This chapter considers how these structures,

some stable and some less so, influence the virtual space of professional learning in the Twitter conversations.

7.1 Unfolding professional learning in the flows

Indications of professional learning appeared in the conversations in a variety of ways. Sometimes, tweets acted to demonstrate the tweeter's professional learning. Other times, my interviewees described learning from tweeted images, often in terms that suggested their participation in the chats resulted in an expansion of the virtual space of possible professional practice. Learning from tweets might unfold gradually, or rely on speed of uptake of a new idea or resource. Occasionally, the limitations of Twitter meant that further research was needed on the part of the participant if productive learning was to be possible. This section provides examples of each of these instances of professional learning.

Demonstration and acknowledgement

Sometimes, participants in the WeMidwives chats seemed to use the conversations to demonstrate and seek acknowledgement for professional learning or professional development. For example, the images shared during the period I observed included photos of graduation certificates; photos and screen-grabs of co-authored research articles; photos of participants presenting at conferences; and screen-grabs of webpages reviewing the tweeter's blog. These kinds of demonstration of professional learning and development may be seen in M1's sharing of a photo of her article published in Midwifery Digest, described in section 6.4 above.

Teachers might be proud not only of their achievement, but of the fact they are *'doing something new, doing something special'* (T1) and so demonstrating progress as a professional.

These types of demonstration may be an important component of the becoming-proud, and so becoming more secure as a legitimate member of the profession, described in the previous chapter.

Supporting professional learning: expanding the space of the virtual

Some participants in each group explicitly saw Twitter dialogue as a form of professional development:

You learn from each other about how practice is, there's a dearth of opportunities really to learn about each other's practice. It's a kind of CPD isn't it. (M4)

And something that I think, you know, you finish your degree and go to be a teacher and you think you're finished but actually I'm so far from done and I haven't had a lesson about something in about 8 years, but I'm so far away from thinking I'm the best I can be but working with these tweeting people has made me into a better ever I think that's a very powerful thing. (T4)

Some of the interviewees commented on how Twitter allowed them to be up-to-the-minute in terms of professional issues and practice knowledge. As T2 put it,

... what happens online, really that's the cutting edge. ... in education ... there's always lots of things going on, there's always lots of initiatives just lots of white papers ... all these things that are happening all the time but I always felt that I was missing out, that I was like the last person to know and I tell you now it's like completely the opposite, things that are happening online, I'll find out about them first and I'll tell them, and so I tweeted the guy who was writing it or the woman who was leading it, or I'm one of the authors myself. It's just it's so it's fantastic. And kind of a complete meritocracy it's a real motivator. (T2)

Here, again, there appears to be evidence of how interactions online create an *agencement machinique* in which T2's productive desire is mobilized. Indeed, his desire

for both connectedness and practice knowledge breeds a desire to become a *generator* of practices.

In another acknowledgement of the way that Twitter produces new opportunities for learning, expanding the virtual for anyone who connects to the conversations, T3 describes how:

... in just like 20 minutes I'll learn so much, you know. And obviously we might exchange emails. But before Twitter or pre ten years ago ... I remember ten years ago when I was doing teacher training, when you'd visit a school you know you wouldn't have to visit the whole school but you might see two or three things which were striking. But here you don't have to go there, you don't have the travelling time going there and back, here it's just sitting in your home and in twenty minutes you pick up so many things. It's just ... fantastic. (T3)

Among the midwives I interviewed, however, there was some recognition that the potential for change offered by Twitter might be limited. M4 and M6 both noted that similar people participate in each WeMidwives chat and so its reach might not be as extensive as one might imagine. An even more powerful limit was described by M1, who felt that the microbiome practices promoted with the hashtag #seedandfeed⁵² in the caesarean section image would not be accepted in her working environment, and so might remain trapped in the Twitter chats:

But I don't think it's something that would be readily accepted by the midwives here. I don't know why. I think that anything in midwifery, anything extra, is seen as another thing to do, another barrier to their routine kind of practice. It's always hard to introduce something new like that. ... Yeah I think it's going to be a tough one to implement. But I do think it seems to be beneficial from what I've seen – the evidence. (M1)

⁵² The #seedandfeed hashtag is intended to promote the practice of “seeding” the microbiota of babies born by caesarean section with their mother’s microbes by using a vaginal swab.

There were moments in my interviews when the ways in which this professional learning might unfold were discernible. Sometimes, the interviews revealed explicit recognition of the role of images in facilitating the flow of new knowledge and the unfolding of professional learning, going beyond the description of images as attracting attention. For example, as well as seeking acknowledgement of her own development as a professional (her “becoming-researcher”), M1’s tweet of her article was the product of a desire to cause knowledge about carbon monoxide monitoring and smoking cessation in pregnancy to flow among her colleagues. In the interview, she described why she had tweeted a montage of photos of the journal the article had appeared in rather than just a link to it:

So the first one is the cover, which is very pretty, with these lovely photos so like the breastfeeding one, it’s just such a happy thing. And the second one is the summary, so you can see what my research was. And so the third one is like the main conclusions. ... I thought my midwifery colleagues might be more likely to read it, and even if they didn’t, they would know the main [points]. (M1)

Similarly, T4 described how an interaction initially prompted by a humorous picture had led to the effective spread of what she perceived to be good practice:

So I tweeted another picture of my hands, because the clay makes my hands go all grey and blue, so we got a mix of “Oh you look like something off avatar.” I was like yeah – and then “What’s sphero? How have you done things with it?” and “What subject is this?” I don’t know if everybody knows what they are. Well now they do. Other people are using them now, people have said they’ve got even class sets now. (T4)

Here it seems that both M1 and T4 saw the images they were tweeting as objects that, when combined with a participant in an *agencement machinique*, might turn that *agencement* into a desiring machine, something actively seeking to expand its knowledge and options for practice.

While these two examples position the images primarily as triggers for further interactions that might generate professional learning, there were other instances in the interviews where images were seen as taking on more complex, multi-layered functions within professional learning and development.

For example, from her description of the image and what she had intended its effect to be on the students she was primarily aiming it at, M5 saw the image of the statue and books described in detail in Chapters 4 and 5 as a *representation* of professional knowledge and learning. In this sense, it had a dual function: to graphically represent the profession and the nature of midwifery knowledge, while simultaneously teaching the recipients something about their own professional learning:

... one of them a student, the other just qualified ... It was just to see the bigger picture. You know like everything isn't learned just in one day, it's acquired, things like that, remind them that things take time and that's OK. (M5)

All these excerpts suggest that participants saw the chats as offering rich opportunities for professional learning, and that they recognized the potential power of images to both engage and communicate. However, it also seemed (especially in light of the interactions described in Chapter 5) that the presence of productive desire was essential to that learning, which could not be guaranteed by the simple act of viewing an image. The next sections explore the different ways in which such a productive desire might work to produce learning.

A gradual unfolding

There were other instances in the interviews which suggested how professional learning might unfold gradually, with desire taking the flows of knowledge beyond

the immediate conversations. For example, as M1 looked at the caesarean section image described in detail in Chapters 4 and 5, she noticed the inclusion of a hashtag, #seedandfeed, in the image itself. It was clear that up until then she had not come across this particular hashtag:

Seedandfeed that's very interesting, is that to do with the microbiome that's all in the research at the moment, about the microbiome? They're promoting taking a vaginal swab or taking a swab and placing it in the vagina and then having it near the baby when doing skin-to-skin isn't it? They're promoting that at the moment. I haven't come across it in practice but I've read about it. I haven't seen the hashtag before seedandfeed. I might have a look at it after this. (M1)

M1's words suggest that, as she forms an *agencement machinique* with the image, the unfamiliar hashtag acts as a trigger that transforms this *agencement* into a desiring machine. Before noticing this hashtag, M1's main concerns had been what she felt to be the negative visual impact of the image and what she initially took to be its central message: that skin-to-skin is critical following births by caesarean section. For this midwife, the image initially predominantly belonged to two repeated series: images of babies and tweets about skin-to-skin. However, the unfamiliar hashtag served to differentiate it from this series, making a cut and generating a productive desire that led her to make a connection between the image and some recent research that she had read about. This new synthesis further generated a desire to know more, to follow the hashtag and see what else she might learn from it.

As well as showing how M1 might herself learn through her interactions with images, the same interview provided an example of how an interaction with an image might trigger desire that could result in potential learning for others. In response to an image of part of a sign in a hospital ward that appeared to show a checklist of some sort that

included the prompt, 'Skin to skin?', M1 described how she might spread the message through further discussion:

... maybe even start a chat myself, if I've missed a chat then I might – say that chat was on Friday night and I looked at it on Saturday – I might try to start another chat about skin-to-skin among my followers. Maybe even if I hadn't missed it. I have lots of followers who aren't midwives and they might have things to say.
(M1)

Here it appears that the *agencement machinique* formed by M1 and the conversation itself, as represented through the image we were discussing, had the potential to take on the character of a desiring machine, generating a new repetition of a series, "chats about skin-to-skin." This repetition would be differentiated from the WeMidwives chat through its inclusion of her followers, which she described as including not only many mothers but also people who shared interests in photography and yoga. M1 anticipated such a conversation would produce new ideas, perhaps ideas that might expand her own understanding as well as expand the knowledge and understanding of her followers.

Instant uptake

While some of the midwives I interviewed (M1 above, but also M2, M5, M6 and ME1) described aspects of their professional learning in slow-burning terms, as something that might be initiated or developed during a chat, none of them described tweets in terms that might suggest rapid spreads of or changes to practice. In contrast, speed of understanding and ease of use seemed to be an important feature of tweets that aimed to spread new practices among teachers. The following excerpts illustrate this:

Quality of it's enough so that I can print it directly onto A4 on my colour printer at work and use it with the kids tomorrow. Anyone who needs their kids to be slightly more literate or has an interest in that would potentially look at it. (T1)

So in terms of what I'd probably do physically, if I saw that I would email it to myself from Twitter, so it came up in my inbox and then in the morning when I got in, it would be there to remind me to do that with a class. And I'd look at my timetable for the next 24 hours, and I'd find the best place to do that. So I'd use that today, and then if I found it useful well my role in school is to coach teachers so I might share with them, or with the teaching and learning team. (T2)

Both these examples suggest that “tomorrow” is an important part of these teachers’ thinking. However, their desire to try something out immediately, to see if it works, seems not to be related to any dearth of practices that work, but rather to a desire to continuously expand their repertoire, adding new activities and approaches, absorbing ‘anything that helps, enhances, improves engagement, progress’ (T6).

The desire to share described in Chapter 6 also resulted in the apparent unfolding of professional learning through the PedagogooFriday conversations. Sometimes, the shared practices seemed to stay fairly static as they were repeated in new contexts: as T1 indicated in response to the image of a trench-display in a classroom described in Chapter 5,

Erm so yeah so obviously this was something that we shared, then other people started building trenches. And other people put trench-like props in their rooms, because obviously it's a significant date 2014 for the hundred years. (T1)

While the construction of a trench does not fall into the category of instantly re-usable resources described by T1 and T2 above, it seems that some ideas are sufficiently powerful – some images resonate with a teacher’s desire to teach particularly strongly – that the time and effort required to (re)construct what they depict seems worth it. However, from T1’s description (and from my own observation of trench-reconstruction images), this idea/activity was repeated with little variation as it flowed

out of the conversation and into schools, and back again in the series “images of mini-trenches.”

In contrast, some responses to images suggested that the desiring machines formed by the teacher/image combinations might result in more substantial change. The most common way in which resources and ideas were described as being changed was through change of context. For example, T2 and T4 both had positions in their schools where they were partly responsible for the professional development of their peers. Both described PedagogooFriday conversations as sources for ideas that they might use in this part of their work, but in slightly different ways:

He’s made it really kind of off-the-shelf, if you like. Like I could just give that to a teacher, or an NQT a teacher of any level and say “What do you think of this?” So it’s something that if you had a meeting with the team or with an individual you could say “Well, what do you think about this?” ... a massive area of development in education at the moment, certainly from an Ofsted point of view, is feedback to students. ... in our school, for the past two years it’s something that we’ve been working on, how you get kids to respond to, interact with feedback. That’s a really helpful resource, I can take that to a meeting and say “How are we going to implement this, how are you going to use that?” (T2)

To be honest, it’s not always the subject content that’s important. It’s about the idea, the pedagogy behind the idea. So I would look at a maths thing and think, oh I don’t get the maths, but I can see how I could use the idea in another subject. That would be more why I might share something. (T4)

While T2’s focus on instantaneous re-use seemed an important fuel in the functioning of his desiring machines, T4 seemed happier to share ideas that might be re-constructed and re-developed. Both, however, seemed to favour resources or ideas that could be transferred between contexts. The resource T2 is describing above is one such context-independent object: an image showing five tips for things to do before the

teacher gives feedback, with the main message that *'Feedback should be more work for the recipient than the donor.'*

These excerpts suggest that professional learning for some teachers may be most likely to be triggered by images that are, in some evident way, differentiated from the stream of images of "good" practice. They need to trigger a flow of desire, either to transfer the process to a new context or, perhaps, to transform it into something new, or to transform the professional's own understanding of good practice. The following section explores these ideas further.

Going beyond the image

T4's indication in the previous excerpt that she looks beyond the immediate use was reflected in several other interviews. As T5 indicated, sometimes an interaction with an image on PedagogooFridays might generate a desire to expand one's understanding of teaching as a process:

You start thinking about process as well, sometimes when you see a piece of work or a particular project and that has you reflect on the models and processes and techniques that you're using as well. From sort of the educational side of things.
(T5)

The desire to understand, coupled with the affordances for connectivity offered by Twitter, meant that, for some, reflection could be enhanced with direct questioning of the tweeter:

Sometimes you just sort of mentally process it yourself and you think right how would I do that in my context, and sometimes you would ask. (T6)

Similarly, T1 indicated that Twitter-based dialogue could be supplemented by more general online knowledge-searching:

So although they might not know what it is when they initially see it, people on Twitter are very very responsive, and there's always like a breadcrumb trail to more resources. If you go "Right, DIRT mat, what's that?" whack it into Google, you know "DIRT in education," you're going to start finding resources. (T1)

Other interviewees among the teacher professionals stressed the readiness of

PedagooFriday participants to offer more background and explanations:

People ask the question and you put them on to appropriate links and resources to explain it if it's a technique that they're not using that builds on the whole learning community. So it's not just the image that's being shared. Anyone that shares an image on PedagooFriday, if you chat with them online they will give you an explanation of what they're doing. (T2)

T3's response to the trench image during the interview encapsulates much of the above:

The idea of turning your classroom into you know like a World War 2 theme thing ... is absolutely fantastic. So it's not going to the museum ... it's bringing the museum or artefacts into your classroom which I think is just brilliant. I've done things like this before but she's taken it to another level really, you know, to the next level so I think it's pretty awesome ... maybe [I'll do something similar] in the future or something but it's just like an idea, images of something that sticks to your mind ... so in the future maybe even next year or the year after or the year after that I might think "Oh yeah! I remember ..." – yeah! It would inspire me. That's what this PedagooFriday is all about. Inspiring, giving new ideas. ... When I'm ... posting something, especially some worksheet or something, and there have been people who say "Oh send me the link," or "Send me a copy" and they'll send me their email and I'll send them a copy. (T3)

In this complex response, T3 appears to be forming a desiring machine with this image that may generate new, transformed ideas, rather than replicate practice in a new setting. He brings a particular interpretation to the image as being about a transformation of the classroom, a "becoming-museum," that was absent from the responses of my other interviewees to this image, with the exception of TE1⁵³. While he has done similar things in the past, he senses an energy in the image, an intensity

⁵³ As we shall see in Chapter 8, unlike T3, TE1 did not see this transformation as benign.

flowing from the tweeter's attention to detail and creativity, that he feels will continue to flow in him until a time when circumstances trigger its actualization and transformation into a new idea for his own practice.

The excerpts analysed in this section show different ways in which participation in the two Twitter conversations seemed to contribute to professional learning and development around practice knowledge. Yet one element appeared consistently: a sense that images often mobilize participants' desire. Thinking with Deleuze (Mazzei and McCoy 2010), learning is only possible when an image introduces difference; a second level, or a new thought, that provides the essential difference that allows 'something to happen' (Gilles Deleuze from A to Z 2011, D as in Desire). However, as suggested in the previous chapter, the lines of articulation and flight formed within the chat spaces shape and constrain the kinds of professional learning that may occur, even in the presence of such desire. The following section provides examples of these powerful, and perhaps unpredictable, influences.

7.2 Twists, braids and knots: shaping professional learning

As described in the previous chapter, forces that shape the flows of practice knowledge described above appear to create both lines of articulation, determining how participants enabled or blocked the flow of tweets, and lines of flight connecting participants to new ideas, new practices and new networks. Both groups thus seemed to be attempting to generate spaces in which lines of flight may form.

However, these lines also seem to interact in ways that might accelerate or impede the flow of affect and knowledge. Building on ideas initially used by de Freitas (2012) in relation to mapping classroom practices, in the following I use the notions of lines of articulation and flight twisting, braiding and knotting first introduced in Chapter 2. Sometimes, the interactions between different lines of flight and articulation seemed relatively tenuous, forming unstable twists or setting up tensions that generated motion between rather than along lines. Other times, they braid together to form more stable lines of articulation that have become characteristic of the conversations. Occasionally, they combine in knots that are not only stable but also act to enclose aspects of professional practice or professional life.

In the following, I present examples of how the three forces identified in the previous chapter interact to produce such structures in the conversation spaces. First, I give examples of twists and braids. I consider how they impact on what flows and through whom; how they may block flows of knowledge and even certain questions, and how they shape the production of professional archetypes or conceptions of good practice through the creation of series of repetitions.

Finally, I present examples where the lines seem to have knotted together, resulting in substantial transformations of the conversation spaces, and I reflect on the implications for professional learning.

Twists and braids

Sometimes, different lines of flight and articulation intersected or became entangled with each other to constrain or influence online practices. When these connections were relatively loose or produced what seemed to be unstable configurations, I identify them as twists; where they seem relatively stable, I identify them as braids. This section considers some examples.

The affordances offered by Twitter combined with participants' senses of professionalism and purpose in a range of ways that shaped the possibilities for professional learning in the chats. These included decisions about what to tweet; questions about whether Twitter was the right space for particular activities; complications around the depiction of professional archetypes; and the creation of norms within the chats.

Deciding what to tweet/retweet (facilitating or impeding flows)

In one instance described by T2, it seemed that his sense of professionalism braided together with the affordances Twitter offers to reach large audiences of his peers as he made a decision about whether to tweet mentioning someone else's product:

One thing I wouldn't do is if I think a company is just trying to promote their thing. A company recently approached me – I say a company but some guy on Twitter said "[a Twitter user with a high number of followers] promotes this" – I think it was like some behavioural management system – and he said, "Could you, basically this company have ripped me off, could you tweet about mine please?" So I said, "Well I could, but I'd need to check that it works, it's decent – can I have a look at it?" So they sent me some log in details and I had a look and I thought "yeah it's fine" and I mentioned it in a couple of tweets. ... you know didn't accept some kind of bribe or whatever ... I mean they offered me free software I said actually we don't need it, we've got a system that works fine thank you ... But if I thought someone was doing that just for, was just trying to I dunno, just to make money

then I wouldn't do that unless it also happened to do the kind of meet the first principle if you like. (T2)

Here there seems to be a line of articulation around his own authenticity as a professional who is tweeting for the good of the community, and not for his own benefit, which braids with the potential value of the product to temporarily slow its flow through Twitter, as T2 spends time checking the product's potential value to others. This raises questions about what enters the chats, as commercial influences come into play and particular approaches or products may appear more frequently or attract more authoritative attention. Such influences may affect the opportunities for professional learning in complex, unpredictable ways.

Just as participants' sense of professionalism and purpose combine with Twitter's affordances to enhance some flows, they sometimes combine with the affordances that Twitter does not offer to impede flows. For example, the fact that Twitter does not allow tweeters to accompany images with detailed explanations combines with T4's sense of purpose in the following:

I probably wouldn't retweet that because I've seen it and done it and I'm not sure what the impact is because I don't really know what he's doing. I don't know what the question is or what the task is or what the outcomes are or any of the stuff. I mean I've seen stuff like that before, so I don't know what's special here. (T4)

Here, T4's sense of the purpose of the conversation has generated a line of articulation around the spread of *new* knowledge and ideas, not merely repeats of things already tried. Without a detailed description of what is captured in the associated image, and so without an idea of what special feature differentiates this image from the repeated series, "post-it notes and string," the image-viewer-response actualization fails to generate enough desiring energy for the meaning potential of the image to flow on to

the interviewee's follower network. However, just because my interviewee has seen this type of activity before does not mean that all her followers have, or that they might not be sensitive to differences in the image from the rest of its series that might, for them, turn it into the importantly-different image that triggers the flow of productive desire. As a well-followed participant in the PedagogooFriday conversations (with almost 15,000 followers), her decision not to retweet it is blocking (or at least impeding) the flow of learning potential.

Is Twitter the right space?

In another example of the limitations of Twitter combining with a participants' sense of purpose, the difficulty in providing detailed information in a tweet resulted in M4 carrying out her advocacy activities on Facebook:

Like mothers if they're struggling to get the proper advice ... or they're being offered things or usually being told they can't have things that they can, I speak up for them and explain what the law says, what maternity services are, give them that information and maybe direct them on to another person or party of people. I can't do that in a tweet. (M4)

Her separation of the various online spaces she occupies may result in a loss of access to an advocate for those who only follow her on Twitter. Given comments such as those made by M3/ME2 about keeping Facebook for personal, family use, this may be an important limitation to professional learning. Other Twitter chat participants would not only be deprived of a possible advocate for themselves, unless she tweets updates to her Facebook page, they might also lose a modelling of advocacy on the basis of which they might have developed their own ability to advocate effectively. Indeed, if advocacy is absented from the Twitter conversations, it would be an

artificially reduced element of the image of the midwife-professional that is being constructed through the chats.

Twitter's positive technical affordances, in the form of its potential reach, also combined with some interviewees' notions of what a good professional does to shape the conversational flows in ways that have the potential to block not only the flow of knowledge, but even the kinds of questions that are allowed within the spaces. For example, one teacher described avoiding tweeting about things that might be controversial:

A lot of RE⁵⁴ teachers are very, very cautious with what topics they will share and what they won't. I'll have a conversation with you ... about my thoughts on what is and what isn't RE, but dear god I would never ... put it online because there are some people who will think no that's fundamentally exactly what RE's about and thing is there's like loads of different camps about what RE's about and ... so that sort of stuff – the stuff that we know is really dangerous – we avoid ... Because as RE teachers we're understanding enough to know the difference between chatting to a human being and sticking it on the internet for, to put a nicer word out there, slightly obsessive and dangerous people to see. ... about you know Islamic lifestyle and what it's like for celebrities ... You just don't intentionally incense huge, well-connected communities. And you know other RE teachers have the same level of sense generally, because we talk about stuff and we understand the potential impact of some of the stuff we play around with. (T1)

The line of articulation that has been generated out of this concern appears to be both well-developed and carefully thought-through, including via conversations with other members of his professional sub-group; perhaps this is an example of professionals avoiding those lines of flight which might fall 'into a black hole' (Deleuze and Guattari 1980, p. 139, my translation). However, the implications for a professional engaging with the conversation are that some questions, such as the nature of religious education, are not allowed, and so the flows of intensity – the expressions of difference

⁵⁴ Religious Education.

and similarity – that might have the potential to transform someone’s understanding are effectively blocked.

In contrast, however, most of the midwives I interviewed indicated that the public nature of Twitter actually contributed to their decisions to tweet about issues that might be seen as controversial, or at least political, since they were issues they cared a lot about. This attitude is exemplified in the following:

RCM⁵⁵ Better Births Initiative, gender pay gap ... midwives going on strike, that's the sort of thing ... Twitter, I see as, I use it professionally. Anything you put on Twitter it spreads like cancer really ... it's about professional or academic or work or politics, that type of thing. I use it specifically for that. (M3/ME2)

It thus seems that professionals using Twitter navigate a space held in tension between notions of professionalism (the need to avoid controversy versus a desire to campaign) and the potential reach offered by Twitter. This raises questions as to whether student professionals might be aware of these external forces and intensities, and whether the Twitter chats might present rather unbalanced representations of the professions. The WeMidwives chats, for example, might give the impression that there were no alternative views to that of the ‘natural’ birth movement; PedagogooFridays might suggest that being a successful, innovative teacher is easier than it is in reality.

Constructing archetypes

Decisions to use or not use Twitter to discuss particular concerns also braids with other lines of articulation and flight to construct what might be described as archetypes of the midwife and teacher professional.

⁵⁵ Royal College of Midwives.

For example, sometimes the affordances offered by Twitter of reaching *non-professional* audiences combined with participants' sense of good professional practice to encourage tweeting that presented professions in certain lights. The following excerpt shows a midwife who strongly believed in the evidence-based nature of midwifery, and wanted it to be understood more widely:

Actually you know women take their breastfeeding support for granted, they don't really think about the evidence behind it ... I think a lot of the time women think that midwives practise based on opinion, they think "Oh you know my midwife had three children, isn't she brilliant she gave me advice about breastfeeding." Where they might look at something I've tweeted and think "Wow I didn't know that breastfeeding was associated with X Y and Z. Oh that's based on a research study well that's amazing you know." So if I can catch anybody's eye like that and promote midwifery as an evidence-based profession, rather than an opinion, then that's great. (M1)

This same midwife was also concerned with promoting an image of midwifery as caring:

... promoting midwifery in a positive way to others ... there's been a lot of negative press. About midwives. Being uncaring ... the mother should never perceive us to be busy, to be like we should always do our best to be kind no matter what. We shouldn't bring our own bias to the women, women should always perceive that we care. (M1)

M1 may have non-midwife followers in mind when she constructs tweets to carry these messages, but because of the way Twitter works, they will be in the feed of anyone who follows her and will be seen by anyone who searches for the hashtag #wemidwives. Her tweets (and similar ones described by M2 and M5 with respect to the evidence-based nature of midwifery, or by M2, M5 and M6 with respect to caring) thus contribute to the construction of a repeated series – “what good midwifery practice is like” – that circulate within the online space. Qualified and student midwives alike will form *agencements machiniques* with this circulating, evolving construction if they read these tweets.

The production of a midwife-archetype that might have a profound impact on the developing professional identity of conversation participants appeared to be occurring in other ways in the Twitter conversations. For example, the Christmas card image discussed in Chapter 5 was recognized by most of the midwives I interviewed as depicting midwives in a particular light:

It's like every midwifery cliché in one picture isn't it. ... So I think it's kind of promoting midwifery ... when three wise men arrive wise women are already there. So just saying that midwives are always prepared. We're always a step ahead. We know what women want, and we're the ones who probably put in all the hard work and then the wise men come and steal all the glory. So I think it's probably just saying that midwives know women and that they know how to help women. (M2)

Thus this image, a piece of fun on one hand, contributes to a notion of midwives' superseding importance over (male) doctors on the other. It does this by repeating the message of ancient wisdom, of a fundamental, natural role that avoids the medicalization of birth. A similar notion of the nature of the midwife is also present in the image of the books and statue described in detail in Chapters 4 and 5.

At first sight, a similar braiding together of the outreach affordance of Twitter and sense of the caring professional appeared in T1's comments:

It openly demonstrates that there's an army of caring professionals out there that really do genuinely want the best for their kids and put a huge amount of time and effort into making sure that that's happening ... I think things like that probably have as much, much bigger impact than a TV campaign of happy children putting their hands up to answer questions to an overly-handsome actor. It's the positive imagery that comes out of some of that actual – and I think it shows some of the best sides of what teaching's about. (T1)

However, this differed from the midwifery braid in that T1 appeared to be thinking about recruiting new members into the profession (hence the reference to TV campaigns). T1 was the only teacher I interviewed to describe his tweets in the

conversations as a way of representing the teaching profession to non-teachers, and on closer inspection it seems that he is referring to the representation of teaching that is incidentally, rather than deliberately, created in the course of the conversations. The end result, however – an image of “the good teacher” or “good teaching practice” constructed by a series of repetitions, circulating within the space – may just as easily be connected to by teachers and student teachers as the image of midwifery partially constructed above.

Images of living bodies and the role of desire

Another way in which the twisting together of lines of articulation and flight produced by different forces contribute to the production of an image or representation of professional practice developed around images of children. As described above, both formal guidelines and professionals’ sense of what is and what is not appropriate in the online environment generally lead to a deep line of articulation proscribing the sharing of images of children.

However, this contributes to a constructed image of professional practice or the professional environment in which, for teachers, children seem strangely absent, at least in terms of explicit representation. This mismatch between the reality of teaching as being with children all day and the representation of teaching practice being created in the chat may contribute to some of the slipperiness around this issue.

For example, for T5, the line of flight along which positive energy might flow into the wider community (generated by her sense of the purpose of PedagoFridays) is in

tension with the line of articulation around posting images of children. This tension is responsible for the kind of oscillation between positions seen below:

OK so this is an image of children at a conference for children that I ran, a digital leaders event ... It was amazing, so it was pretty cool. So I wanted to share it with the wider community ... it really had a massive impact on the kids that did that day, they came away just buzzing.

...

Well obviously teachers need to be careful of what they share, so I tend to take photos of kids' work and not kids. (T5)

This may offer an explanation for the other oscillations around images of children described above. The uplifting nature of such images allows intensities of joy, pride and compassion to flow, but this flow might be blocked by adherence to lines of articulation, such as the requirement for consent or fears over sexual exploitation. In his discussion of a Deleuzian pedagogy of desire, Zembylas (2007a) notes that physical contact (particularly touching and hugging) between teachers and students has been made problematic because of oversexualization. The same connotations of sexuality and sexual misuse or abuse run through contemporary discussions of images of children; indeed, in some ways, images (those proxies for physical contact) have come to seem somehow more dangerous, perhaps because of their multipliability and mobility, than physical contact itself. This contributes to the line of articulation repressing or prohibiting images of children, and indeed images of woman, that run through the formal guidelines for midwives and teachers. However, this proscriptive approach risks reducing an important consideration – children's general rights regarding the circulation of their image in virtual public spaces – to a legalistic barrier based on the extreme case of vulnerability to sexual predation.

However, what we seem to see, perhaps more tentatively among the teachers in these conversations than the midwives, is desire, and perhaps a pedagogy of desire, generating lines of flight that escape the guidelines. These allow teachers to celebrate their pupils and reassert the innocence of joy in the sight of, for example, children learning and playing outdoors, in a beautiful landscape; or children enjoying an art class or a role-play activity.

The images shared during the WeMidwives chats include a substantial number that focus on babies or women's bodies. Photographs of babies sometimes show them naked and scowling, not always calm and smiling in the arms of a loving mother; likewise, pregnant bellies, sometimes clothed, sometimes naked, seem to celebrate the naturalness of pregnancy and birth, and the fleshiness of the work of a midwife.

Images such as these suggest that, in both professions, a productive desire – *'the desire for the new and inspirational'* (Zembylas 2007a, p. 343) – generates lines of flight that may lead to professionals reclaiming the notion of embodiment, or at least the embodiedness of the worlds they work within. This may be an example of the kind of reclamation that Zembylas asserts is key to a pedagogy of desire. However, the results of following these lines of flight are not wholly positive, since they mobilize a desire that is in tension with the need for professional sensitivity when circulating images of others' bodies.

Acknowledgement as a norm of participation

In addition to contributing to representations of the "good" professional or "good" practice circulating within the spaces, the lines of articulation and flight also shape new

professional norms specific to those spaces. Any professional newly entering these spaces would need to notice, learn and adopt these norms if they are to be accepted into the conversations.

For example, there was a deep line of articulation around acknowledgement in the teachers' Twitter conversations. This seemed to be the result of another apparently stable braiding together of the affordances offered by the platform and practitioners' sense of professionalism, but now with the desire to spread positivity added in. This produces careful citation of sources, tweets that were intended as implicit acknowledgements of the contribution of others ("*Thank you for making this happen*", (T4)), and gratitude and appreciation for the opportunities for inspiration created in the conversations.

This pattern of acknowledgement appeared in comments such as:

And it's really good, like when you read the comments also some people say "Oh! This inspires me" and people always say "Oh, I'm glad that this inspires you." (T6)

It also appeared in "acknowledgement chains":

You know [P] he's a nice chap in real human being life. He shares a lot of ideas of the sort of stuff that he does. And this person's ... openly thanking [P] for the idea. (T1)

It was often clear that interviewees consciously recognized norms around acknowledgement. For example, some interviewees described the importance of the text accompanying some of the images in relation to the acknowledgement trail it provided:

I can tell it's done by [R] because it's not a retweet, or if it is a retweet he's taken off the chain he's copy-and-pasted the whole thing and edited it himself so it's either a modified tweet or done originally by him. (T2)

... he's thanking them to say "I got the idea from them" so I do see that a lot ... You know I think it's just kind of like copyright but also like thanking and sharing together. There's a good atmosphere on there, and I think that's important, thanking people for the ideas they've given you. (T3)

Sometimes these chains of acknowledgement could be quite complex:

OK, so this is a tweet by [R], who's saying that something was shared by [School X] today, and there's a link there to their blog, and he's saying that was via [D] and it's on PedagogooFriday. (T6)

This suggests that acknowledgement may have itself carved out new lines of articulation, shaping the actions of the participants in this chat. This is reflected in comments indicating the consequences of not properly acknowledging others:

The one thing about Twitter that I quite like it's quite polite and people tend to say where they've got things from so that this suggests to me this is something that she's made. Because normally if people don't do that then someone will complain and it will come out, you'll get found out. (T2)

However, when a participant did not gain the acknowledgement of their peers that they hoped for, this braiding could result in a destabilizing tension. T3 described an image he had posted in terms that acknowledged the generosity of a parent but also hinted that the parent's action was itself an acknowledgement of the teacher.

Following a conversation at parents' evening,

The next day, the parent brings in like huge mound of cakes ... it's really generous like he's trying to tell us how much happiness you can bring to a child, you know just by saying nice words to the parent, just for that five ten minutes. And you know you can only say so much in 140 characters, so I'm just wondering, did I get any comments? [mournfully] I don't think I did. (T3)

With this closing comment, the teacher indicates that he would have liked this interaction to be further acknowledged by his peers.

This particular braid, leading to personal acknowledgement, did not appear so clearly in the midwives' comments. However, it may be partly responsible for this group's

lack of concern about being followed by clients, as this could be interpreted as an acknowledgement of their own good practice, as seems to be the case for M2:

They might have had their baby a year ago or they – they're not pregnant forever, so a year later they might go "You know what, I really appreciate my midwife, she did a great job" and start following me. (M2)

Acknowledgement, therefore, seems to be very important to participants in the chats.

It contributes to the 'good culture' (T3) of sharing; any student or novice professional hoping to join in that culture would need to learn and adopt appropriate acknowledgement behaviours.

Knots

Sometimes, the various lines of articulation and flight seem to knot together, forming configurations in the space that seemingly cannot be undone, and in some way transform the virtual, restricting what may be actualized within the space. These knots seem to be held in tension by the lines of flight that are attempts to create spaces that generate new opportunities for enacting and experiencing the positive aspects of being a teacher or being a midwife. Here, I describe three examples, relating to free sharing and ownership, politeness and positivity.

Free sharing and ownership

One example of a knot being created at the level of the individual came in a story recounted by T1 regarding a failure in the required flows of acknowledgement. He had given permission to someone he 'knew on Twitter' to post on that person's website a resource that he (T1) had produced:

Someone else who knew him saw it, when it was being reposted at an event I was at, and erm became furious that I was somehow infringing, claiming that I had created personally something that someone he knew had? And there was somewhat of a firestorm. ... by the time I'd spotted this there'd been a bunch of people having a right shouting match and battle on Twitter, which I had just missed because you know I'd went to bed early that night ... Get up to an absolute storm in the morning of people fighting over it ... And I'm thinking well that's what happens when you bother to share your resources isn't it ... it all settled down eventually because the evidence trail was there of who posted what and when ... But I had my reputation called into disrepute because of my willingness to share and letting someone else post it on their [site].

... I was quite polite and gracious about it. Because I understand that he will have unwittingly and ignorantly went off on one to try and protect his vested interests. But I do think he could have been a tad more professional and checked his sources before doing it. ... And sometimes people do steal stuff from each other and lie online. If you stick it out there online for everyone to see, that can happen. But don't start accusing people until you've actually bothered to check. [laughing bitterly] Simple advice. (T1)

In his final comments, we can see that for T1, his sense of purpose, which for him generates a line of articulation requiring free sharing of resources, knotted together with the lines created by affordances for sharing and professionalism relating to proper citation of sources to produce an unresolved tension between his desire to be generous and the existence of untrustworthy others.

While T1 was the only interviewee in my study to describe such a negative experience in the online space, one might speculate that others will also feel a tension between the desire to share and the desire to own or have one's authorship acknowledged. Indeed, if part of the function of the conversation is to remoralize through acknowledgement, to truly give something away for free, no strings attached, would undermine that purpose. Experiences like this may "teach" a reluctance to share on the part of the victim, changing their relationship with the online environment. Indeed, although the 'storm' had happened outside of the PedagooFriday conversation, it had evidently

brought a bitterness into a space that this interviewee explicitly saw as a place to create opportunities for joy.

Politeness: silence in the face of doubtful opinion or practice

In the above, T1 also describes how, faced with a flow of negativity, he maintained a polite stance. This behaviour also seemed to indicate a knotting together of lines of articulation and the line of flight that yearns for positive experiences. Indeed, the desire of many of the interviewees' to generate and maintain positive flows in their conversations seemed to mean that negative comments were never made, even when something was perceived as a bad idea. Thus flows of bad practice might be passively impeded but not actively countered. Among the interviewees, all whom I asked directly (M2-M6 and T3-T6) said they would not comment negatively or criticise something posted in their respective chats. In T3's words:

I don't think I've ever said anything critical to be honest. No I haven't. I'd have to go back through my thousands of comments – no I don't think I have. If somebody posts something that isn't good, I just ignore it. And I think many people just ignore it or something because I don't think I've ever even seen a critical comment.
(T3)

Similarly, although WeMidwives chats are intended to be discussions, open disagreement and tweets that might be perceived as negative seem to be rare. Thus on one occasion, M5 found her desire to open up a debate stifled:

I think the more positive that something is, or the more humorous or the more humble one is, it actually gets more attraction. Whereas anything negative doesn't. Like I tried to have a debate one time about a meta-analysis ... And it was dropped awfully fast ... the debate stopped dead in its tracks. (M5)

Another explained her decision not to comment critically with a story about how her attempt to criticize language had been misunderstood:

It was a male midwife who used the term twat. And so I made some comment about being sensitive to terminology and that sparked off a HUGE debate. And actually the debate became more about his gender and the terminology rather than the terminology itself. So he was defending himself along the lines of he's got five sisters and he was gay, so he wasn't anti woman and actually that wasn't what it was about? So kind of fingers burned by that experience. (M3/ME2)

This line of articulation around positivity also led M3/ME2, a self-avowed advocate for natural birth, to indicate that she would leave a tweet that includes an image that goes against her beliefs unchallenged:

I wouldn't want to publicly knock somebody. Because I don't think that's appropriate. I mean you can't say "Oh the medicalization of childbirth" with somebody sat there, because that's like saying "You've medicalized all the women that you look after" ... she's young and I wouldn't want to knock her. (M3/ME2)

One of the implications this has for professional learning is that the reluctance to be negative may allow questionable or even bad practice to spread through the conversations. Indeed, for teachers this may happen almost virally, if the questionable practice is contained in an immediately reusable resource. One such example that I observed was a poster for the classroom wall describing 30 ways to stay creative, one of which included the recommendation to have sex. This image was retweeted and favourite hundreds of times, and attracted many positive replies, with only one quietly hinting that number 18 might make it unsuitable for kids. Similarly, the complete lack of discussion around resources/activities such as Mr Men books on Hitler or Lego figures of Goebbels and Himmler may mean that some teachers come to unthinkingly accept these as examples of good practice.

A space for positivity

A final example of how lines of articulation and flight knot together to form stable configurations which enclose aspects of professional life relates to the same culture of

positivity. This was sometimes openly linked in the interviews to the more negative experiences that conversation participants might be having in their daily working lives. For example, the active seeking out of acknowledgement was viewed by some of my interviewees as linked to a possible lack of support in one's place of work:

Obviously they see Twitter as a source of support. And perhaps they're not getting the support on the ward, or maybe I'm not sure if it's not just an extra support. Either way I like to respond. Because I do have experience I can share with them and often it might be something simple like saying you did the right thing or you know I agree with you or have a good shift even. Just something simple like that. Just to acknowledge them. (M1)

... sometimes there's more to it, some teachers they need some self-pride or sometimes they don't have the confidence, or maybe they don't have the staff that don't support them or don't give them confidence. So ... they might take pictures, and put it on PedagogooFriday, and everyone say "Oh that's brilliant work, that's great work" ... it's amazing, when it's not someone from your staffroom, it's someone from somewhere that you don't even know ... quite literally any teacher or anybody in the whole world can look at your work and critique your work and say "Oh yeah that's brilliant work can I have a copy?" (T3)

For a professional entering these conversations, they may take such support and praise at face and value. However, sufficient exposure to the somewhat relentless caring of some midwife conversation participants might lead one to question why so much support needs to be broadcast, and whether it is addressing the reason that such support is needed. The currents of support that circulate even on the surface of the WeMidwives chats may begin to undermine the image of the compassionate midwife that is being produced and circulating within them. It may be that, if such a suspicion grows, a moment may come when the repeated series, "compassionate midwife" changes the meaning being generated, perhaps turning it into "oppressed midwife" or "miserable midwife."

Low morale, isolation, lack of support in workplaces and bullying were regularly mentioned in my interviews with both professional groups. Sometimes this was only hinted at in phrases such as, 'You know what, I still love me job' (T2) and, 'You know, hang on, it's going to be alright' (T4). Sometimes it was more explicit, as in the following comments made by a midwife and a teacher:

... on labour wards if there's an example of something going wrong, the midwives won't usually stand up for each other, they'll pull each other apart ... we don't kind of support each other, if you're down and out they'll give you a good kicking. (M3/ME2)

... people should be proud of what they're doing. And I think a bit of that's been kicked out of the profession in the last few years and there's quite a sort of grass roots campaign for you know let's celebrate the good stuff we do do and enjoy what we do about our profession you know? ... You know, the astute members of the community are very, very aware of why we need positive influences and spread positivity throughout the community. You know things aren't always as cheery as they could be in the education sector right now. Statistics for teacher suicides are massively on the rise, the amount of teachers leaving the profession, schools closing, massive levels of underperformance due to changing games, you know we know that this is not the most comfortable and stable time for our profession. (T1)

Participating in the Twitter conversations was seen by many as a way of countering these issues. The same teacher described how he had reacted to finding the

PedagooFriday chats:

I thought "This is fantastic! People sharing inspirational ideas and celebrating the end of the teaching week." Rather than going home to drink a bottle of red wine and pass out, dreading the return of Monday morning. (T1)

But perhaps because of his awareness of the problems faced by his profession, he wanted to keep this space uncontaminated by the kind of negativity that would inevitably flow from their open discussion:

The profession doesn't need people constantly going on about their failures and moaning and so on and so forth. There's frankly enough negativity out there. (T1)

Similarly, M3/ME2 commented on the fact that '*there's enough backstabbing in midwifery*' and that this contributed to the caring tone of the Twitter conversations:

There is also this noticeable on social media sites of midwives trying to, trying to create a more nurturing, positive atmosphere. So you see all that compassionate, caring, emotional work etc., you know if we don't, we can't look after ourselves, how do we look after anyone else? Healer heal thyself kind of thing. (M3/ME2)

While most interviewees appeared determined to maintain their Twitter conversations as sanctuaries of positivity and nurture, glimpses of the potential futility occasionally showed through:

There's an element of me thinking this is just papering over the cracks ... it's like sticking a plaster on a haemorrhage, it's a nice idea but it doesn't do much. (M3/ME2)

They're trying to be nice and smiley though aren't they, upbeat? That's my image of them – we're going to change the world by proving that we're evidence-based and positive. (ME1)

One interviewee suggested that the publicly visible conversations were just the surface in terms of support:

If you got into consent for private messages that's where the real support is. The amount of private messages is phenomenal. So what you capture on the surface ... if you actually look deeper, you know the tweets are the context but then you have the private messages go on in between, that's where the real rich stuff is in relation to support. (M5)

If the problems in the professions are indeed as bad as these interviewees indicated, then the Twitter conversations may offer an extremely important element of ongoing professional development. Although there is a risk associated with sweeping problems under the carpet, they may on balance do more good than harm. They may be a way to help professionals reenergize, remoralize, and remotivate. The support that is offered among the midwives appears, at least sometimes, to be both actual and effective. The resource sharing among teachers appears, at least sometimes, to be

genuinely inspirational and to successfully remind practitioners just what it is they like about their work. It may be that learning to be part of a community that celebrates aspects of its own professionalism and practice is an important step in (re)building a community that has strength, resilience and confidence in its own judgements.

7.3 Conclusion

This chapter has explored some of the ways in which forces and intensities at play in the conversations, and the lines of articulation and flight that they produce, shape the possibilities for professional learning.

As demonstrated in the first part of this chapter, the conversations appear to offer important spaces for the unfolding of professional learning. As affect and practice knowledge flow within the spaces, they produce and are produced by participants' desire. The desiring machines produced as chat participants connect to images may assist (or block) the flow of practice knowledge; they may also connect with other desiring machines in networks that produce further flows of knowledge and support.

However, the lines of articulation and flight identified in Chapter 6 interact to produce patterns of behaviour that may limit as well as enable professional learning. The second part of this chapter gave examples of such twists, braids and knots, suggesting that the conversations themselves construct notions of the good professional and good practice that may become self-reinforcing.

Finally, the intensities of support and celebration may spread beyond the conversations, helping to remoralize professions that are otherwise not experiencing *'the best of times'* (T1). Although this comes with a risk of not facing up to some current issues or concerns, it may be important for professionals to have self-generated spaces in which to exercise their right to be proud of their profession and its work.

Having considered the evidence for the chats as spaces of informal professional learning, I turn now to consider their pedagogical potential in formal, higher education contexts.

Chapter 8 – Seeing the images as pedagogical resources

All of that is from the phenomena of physics. For an event to occur, a potential difference is needed, and for there to be a potential difference, there must be two levels. For an event to occur – a flash of lightning, or a little stream. And that's in the domain of desire. To desire is to construct. Each time someone says "I desire this thing", it means he's in the process of constructing an agencement. And it's nothing else, desire is nothing else. (Gilles Deleuze from A to Z 2011, D as in Desire)

Chapters 5–7 explored the flows of knowledge and affect through the Twitter conversations, how those flows were shaped or influenced, and how the flows and spaces co-constituted each other. They used the idea of *agencements machiniques* to conceptualize both the chats and encounters between professionals and images in my interviews. In so doing, these chapters showed how professionals' desires to share practice knowledge and create spaces for compassion and joy set these flows in motion. Chapter 7, in particular, examined evidence for informal professional learning unfolding through the chats.

The present chapter continues to address learning, but now turns to the potential for images from the Twitter conversations to be used in the construction of new *agencements machiniques* in higher education contexts. It addresses the question:

What might student professionals learn from images shared in the two Twitter conversations under study?

This chapter draws on individual interviews with educator professionals and group interviews with student professionals. First, I describe pedagogical potentials raised by the educator professionals I interviewed, and consider how these might relate to the ideas about a pedagogy influenced by Deleuze's thinking described in Chapter 2. I

suggest that the potentials identified by the educator professionals can be described as elaborations of practice/practice knowledge and the development of a productive or desiring criticality. I also describe some dangers educator professionals perceived in the images.

I then note ways in which the students I interviewed responded to images differently to the practitioner professionals. Finally, I show that students' encounters with images surfaced and sometimes extended practice-related knowledge, and often led to (productive) critique. However, this tended to fall short of the desiring criticality that develops knowledge of the forces that produce enacted practice.

8.1 Pedagogical potentials

As discussed in Chapter 2, a pedagogy that embraces Deleuze's ontology of immanence (Deleuze and Guattari 1988; Deleuze 1994) is likely to have some of the following features. First, it may work to expand the space of the virtual, giving rise to potential relations and actions that might otherwise have lain outside the reach of the students it engages. Second, it may connect to repeated series, searching for the difference that truly differentiates and so creating the potential for something to happen. Third, it may open itself up to the productive flow of desire (Zembylas 2007a; Zembylas 2007b).

The previous chapters suggested that desire is an important motive force for the flows of knowledge and affect in the *agencements machiniques* comprised by the Twitter conversations, and that it is a key part of the professional learning that unfolds in these

spaces. But, as discussed in Chapter 2, a pedagogy that embraces desire goes beyond the creation of flows of knowledge and affect. As Zembylas (2007a) indicates, because desire for Deleuze and Guattari is political, a pedagogy of desire is ‘a politically engaged pedagogy’ (p. 344), which ‘works to develop in students and teachers a criticality about knowledge, affect and the events and meanings of everyday learning and teaching practices’ (ibid., pp. 339–340).

In professional learning contexts, one might extend this criticality to address not just the pedagogical encounters experienced by students, but also professional encounters in their (near) futures. Just as a pedagogy of desire ‘accepts the notion that pedagogy is always an extension of forces and intensities’ (Zembylas 2007a, p. 338), so too it might recognize that notions of professionalism and good practice are extensions of forces and intensities: criticality in a pedagogy of desire is, then, the act of seeking to develop knowledge of those forces and intensities. However, it is important to note that such a desiring criticality operates from within and as part of the pedagogical and professional *agencements* in which students find themselves, rather than positioning itself as external and untouched by the same forces and intensities. Indeed:

This is not an argument about encouraging a sense of lost agency or lack of fulfilment within the context of a critical or psychoanalytic pedagogy, respectively. Pedagogy of desire is concerned with the present, not with a utopian vision or with the transcendental. (Zembylas 2007a, pp. 342–343)

Such criticality might, then, be tempered with Massumi’s productivism, so that it seeks to ‘foster’ and produce positive change as or more often than it seeks to ‘debunk’ (Massumi 2002, p. 13). For student professionals for whom the present and very near futures are crucial, a pedagogy that enables a productive criticality, and that embraces

desire as central to learning, may well be very effective. Such a pedagogy might provide a path to help pre-service professional students develop a sense of criticality towards their practices and contexts that, while relieving them of the burden of achieving an unachievable perfection of practice, does not also leave them feeling oppressed or controlled.

These ideas informed both my own thinking about how the images might be used and my analysis of the interviews with educator professionals. During these, I asked interviewees to comment on how they might use images such as the ones they were engaging with in their own teaching. They suggested a range of uses which could be consistent with a Deleuzian approach.

Prompts for elaborating on practice knowledge

Both midwife and teacher educators suggested that images could be used as prompts for discussion about what was going on in the image itself, that is, elaborating on and explaining the depicted or suggested practice. As ME1 and TE2 put it,

I would ask students to look at it, and see what they see in it. (ME1)



*I would use that as a visual stimulus and say "OK, here are some images, let's think about it in terms of interdisciplinary learning. Tell me what **you** think is going on. What's the learning within the curriculum areas and through the curriculum areas that you can see. Let's **you** plan an interdisciplinary activity or series of activities you know with regard to CfE⁵⁶." (TE2)*



⁵⁶ Scotland's Curriculum for Excellence.

Elaborations such as this are essentially the relational generation of meanings described in Chapters 4 and 5, with the contextual and intertextual resources being connected up in the circuit of the image-viewer *agencement machinique* and the resulting response actualization made as explicit as possible. TE2's suggestion takes this a step further to access the virtual space of possible, differentiated repetitions in new contexts. As described in Chapter 5, there were several instances of such sophisticated, context-influenced readings of images during my interviews with practitioner and educator professionals. This suggests opportunities for educator and student professionals to connect to images together, and so co-create meanings bringing a range of experiences and knowledges to bear.

As can be seen in the second excerpt above, the professional activities depicted in the images shared by teachers were seen by TE2 as offering opportunities to discuss not only the activity itself, but also how it might be improved on or further developed. In another example, she responded to the image of the trench display as follows:

I see opportunities for children doing drama, and things like that on it. And actually I would have wanted the children to do the display. You know like the technology with the sandbags etc., maths and there's all sort of things I can see in there, and you know art and design in sign making, different types of writing ... I can see lots of opportunities for as I say for curriculum learning, putting it together but also afterwards in terms of drama and contexts, stimulating contexts for storylines and different types of writing. (TE2)



Prompts for a desiring criticality

As well as seeing the images as useful prompts for elaborating on professional practices, the educator professionals I interviewed recognized them as good ways to start critiques of depicted or suggested practices. As ME1 said, *'the things I notice first*

are the things I would criticise.’ Thus the images might be used to stimulate critical

discussion among students:

Depending on where they’re at in the programme, it’s three years of a programme so later on – they might notice that she’s got her hair down, that she’s got the fob watch on. So looking to see – if they could spot the “deliberate mistakes.” (ME1)



That one, that would be a good stimulus for a discussion on child protection. So I think you know maybe ... more as visual stimuli for discussion on specific areas ... child protection or inclusion. (TE2)



... it depends whether she put it together or how much input they had. If she just put it together then there’s no learning for them in there, so what’s the point? ... It’s the children’s learning that’s most important. (TE2)



Critique of a depicted practice was also seen as an opening to discuss ways in which to improve or develop it into something more worthwhile. For example, TE2 thought that, as well as being rather distasteful, the “knowledge vomit” activity



(discussed in Chapters 4 and 5) would not be useful unless it was both more focused (for example on character or plot) and part of something more structured and extended. Thus, while the envisaged critique might have been somewhat more negative than would be consistent with a genuine productivism, it did include attempts to adapt the depicted practices so as to improve, rather than reject, them.

Again, this seems consistent with a pedagogy that seeks to develop students' critical knowledge of the forces and intensities that shape professional practice, while remembering that students are or will be part of that practice.

Finally, TE1, ME1 and M3/ME2 all saw the images as potential prompts for students to critique the contexts in which they found themselves, without necessarily encouraging ideological, revolutionary resistance. That is, the images were seen by these three educator professionals as presenting opportunities to develop knowledge of the ways in which current trends and contexts might shape or distort practice. For example, the "knowledge vomit" image prompted TE1 to go beyond the specific depicted activity and focus on the surveillance of student learning that manifests itself in current assessment regimes:

It's perhaps satirizing the approach to simply filling students' heads with stuff to regurgitate in regards to the novel Of Mice and Men ... I think capturing that sort of teach-to-the-test aspect to these things ... is a good thing for [student teachers] to be thinking about, you know that teaching literature should be about more than just providing people with a load of things to mention ... Perhaps she is sharing with the children the extent to which there is something inherently ridiculous about this but that that's the kind of game you have to play because the exams are such high stakes, high stakes things. So being more kind of open about it in a way that the children might find humorous perhaps ... might be more honest than trying to conceal, conceal such things. (TE1)



TE1 imagines using the image as an opportunity to raise student teachers' awareness of the potential impact of high-stakes assessment. He appears to identify this kind of assessment as a force that shapes professional practice in ways that risk undermining the real purpose of teaching literature. By positioning the image as a way of turning pedagogical encounters into more honest, human experiences, he seeks to not only

develop student teachers' knowledge of forces and intensities shaping practice, but also to help them find ways to perhaps counter or defuse them.

In relation to the images from the WeMidwives chats, both ME1 and M3/ME2 were concerned by dominant discourses about compassion, in relation to the women in midwives' care, and to midwives' care for each other. In both cases, ME1 and M3/ME2 felt the discourse put pressure on individuals to solve what are distributed, socially-generated problems, and so set impossible goals:

There's times when you absolutely should give 100% regardless of any scenario, and you should be able to be knowledgeable enough to know when that is. So for example if you've got a woman having a therapeutic termination, or you know something of that gravity, or a really frightened young girl. You know there are times when it's absolutely necessary, but I would say that the day-to-day expectations of what it is to be a midwife and be compassionate and caring – sometimes are more than you're able to do. (ME1)

ME1 was also keen to challenge another assumed role of midwives, that of advocate.

She felt that true advocacy can only take place when there is a '*deep compassionate connection to a woman*' and that, especially in circumstances when a woman has been brought into hospital for an emergency procedure, was very unlikely. Thus for ME1, '*the language of birth and midwifery has a whole set of assumptions about behaviour that is unattainable*' (ME1).

Here, again, the midwife educators' aims were consistent with the development of a productive or desiring criticality that operates within the professional context to identify and perhaps deflect the force of unrealistic expectations.

TE1 imagined using the images from the Twitter conversations in a similar manner, to help students recognize the freedoms they would have within the constraints imposed by, for example, regimes of quality assurance:

I would use all of them ... to stimulate discussion which would allow some of the critical things I'm saying which I like to think some of the students ... would come up with too ... What I try to encourage them to think is that these are things they can improvise with. Because unless you've stuck a senior colleague or a camera in your room, you still have more freedom than you might think you do. And you certainly have the freedom to NOT do this sort of thing. (TE1)

Again, this imagined use seems consistent with the development of a productive, desiring criticality, operating within the professional space.

Images as risks

As well as seeing potential pedagogical uses for images from the Twitter conversations as prompts to elaborate and even critique practice, the educator professionals I interviewed raised what they saw as risks to students if they were to engage with the conversations *without* an exploratory or critical approach.

TE2 worried that the limited text accompanying each image meant that students (as well as professionals such as herself) might not be able to understand what was really happening in them:

*Unless you have more contextual information ... I would question how helpful is it in terms of pedagogy to other teachers? You know, I can look at these pictures and think well what would I do with this and what would I do with that which is really great because it's all about thinking for yourself, but I would also like to engage with, well, what did **that** teacher do with it? (TE2)*

This suggests that although she was keen to expand the space of the virtual that her students could connect to and potentially actualize in their own teaching practice, she

had some concerns. Perhaps she felt that the virtual could occasionally be too big, offering too many possible interpretations and leaving students confused, or that students may be seduced by such images, following a line of flight that leads away from thought-through, effective pedagogy.

ME1, M3/ME2 and TE1 expressed concern regarding the notion of a “good” professional that the images contributed to constructing (see Chapter 7 for more detailed exploration of this notion as it emerged in the interviews with practitioner professionals). ME1 and M3/ME2 saw the images generating an unrealistically happy and sanitized image of midwifery:

*I think [midwifery is] an environment that can be quite hostile, that is quite challenging, that exists with cliques and networks, and you would subscribe to it as a student midwife and conform to one way of thinking ... And it's – in what ways do you enact your identity as student midwife? Are you the competent, committed, cheerful, enthusiastic, pony-tail wearing – **pixie** – that sprinkles fairy dust everywhere, or are you ... “Oh my god I'm starving, I'm never going to get a break” and you know, “This couple are driving me nuts,” because they keep asking, “When will the baby come?” You know all these different things that you encounter ... Nothing is benign ... it's that whole, “This is what it looks like”, when in actual fact no it doesn't really look like that at all ... it's very sanitized.*
(ME1)

In a similar vein, TE1 offered a critique of the notion of “good” teachers which he felt was constructed by the images he saw, and worried about its impact on students:

*But you don't want this er, singing, dancing facilitator ... I do wonder whether we're not in a culture where there's too much busy-ness as I said before, and not enough thought. And the examples you've shown are real examples whereby a hell of a lot has gone into thinking about a particular thought – well what might please children – without thinking about whether you **should** do the things that you've come up with. Without that critical take on things, where you get so carried away with an idea that looks fun that you don't really consider the consequences of that ... But the culture is so strong for finding these things appealing, seeing these things as that's what good teaching looks like, that I think sometimes student teachers will instinctually or instinctively look at these things and feel uncomfortable with them and then the culture so strongly implies that these things*

are necessarily good things that they feel themselves to be wrong, they feel insecure about it, and then they embrace them. (TE1)

Going further, he suggested that these images contributed to what he saw as a dangerous direction for teaching as a profession, away from an academic or intellectual valuing of knowledge and learning:

I think we do have a situation now where teachers are less likely to regard themselves as being academics ... They tend to think of themselves as facilitators who are good at working with children, getting on with them and managing them and enthusing them in some way, getting them excited – and that connection with content, with deeper knowledge of something, seems less significant to them. But the idea of teaching being almost a kind of practical business as opposed to in some way being an intellectual endeavour ... What I worry about, is if you've got 100s of images and they're all like the ones we've looked at just now, that reinforces the ideas of a teacher which I feel are in some ways wrong ... It may serve to make teachers who feel uncomfortable may feel that they're in an utter minority. (TE1)

Thus, although the availability of these images might serve as a useful pedagogical resource, they come with some attendant risks that may need to be managed by educators; risks, for example, of setting unachievable goals, of assimilation or of alienation. Such risks might be addressed through a pedagogy of desire, the task of which is 'not to adopt particular identities and ideologies but to open the space within which teachers and students are able to gain a new sense of interconnection and intersubjectivity with others' (Zembylas 2007a, p. 344).

The remainder of this chapter provides illustrations of how images found within the two Twitter conversations might provide ways for a pedagogy of desire, interested in connecting to both the virtual and to repeated series, to be enacted. In the next section, I discuss the ways student professionals formed *agencements machiniques* with images in my group interviews. I then give examples of how elaborations of practice were generated within these *agencements*. Finally, I give examples where image-encounters

seemed to produce a productive or desiring criticality, albeit in a somewhat limited form.

8.2 Student professionals' responses to images: detail, fluidity and personalization

As described in Chapter 3, I conducted three group interviews with student professionals: one with six midwifery students, who were coming to the end of their first semester of study; one with two education students, who were commencing their second semester of study; and one with four education students in the fourth year of their study.

As with my interviews with professionals, the discussion in the group interviews centred on a selection of images that had already been tweeted in the two Twitter conversations. The students' responses to the images appeared to differ from the practitioner professionals in four key respects: the level of detail with which they were described; the ways in which understandings were co-constructed and often fluid; a tendency to more personalized and personalizing responses; and a more openly critical response. This section gives examples of the first three, to illustrate how they impacted on meaning-generation within the *agencements* of the group interviews. The ways in which they were (or were not) critical are described in Section 8.4, following the exploration in Section 8.3 of how elaborations of practice knowledge were generated.

Responding to details

Unlike their practitioner counterparts (see Chapter 5), the student teachers gave remarkably detailed accounts of the compositional elements of some of the images, noting details of syntax as well as lexis.

For example, ST1⁵⁷ and ST4 noted that the text at the top of the “knowledge vomit” image was in the same colours as the vomit, and ST6 noted that contrasting colours were used to make some words stand out more to the students. ST1 and ST2 noted that the words ‘Jim Crow Laws’ were central in the stream of vomit, and suggested that this positioning would make pupils think they were key terms and should be central to their own thinking.

This connection of composition to pedagogical function was even clearer in student teachers’ responses to the “growth mindset” image, as exemplified by the following excerpt:

Like for a primary school kid that will, that will really make an impact on them because you’ve got the, like, all the negative images are very plain, they’re just like black and white ... and then you’ve got the like the changed mindset it’s bright, colourful, you know different fonts, you know the colour will attract them more to the positive. (ST6)



Thus the *agencements machiniques* formed when students connected to the images provided opportunities to reflect on the way an image’s composition – its lexis and syntax – can have subtle consequences, whether intended or unintended, for the

⁵⁷ Throughout this chapter, the notation described in Chapter 3 is used to refer to student midwives and student teachers – so for example ST1 refers to a first year student teacher intending to teach English.

meanings generated in viewer-image-response actualizations. This may lead to a different understanding of the potential impact of any images they choose to share online; and for the student teachers, it may also lead to a more sensitive approach to the selection or creation of images to use in their own future teaching practice.

Unfolding, fluid understandings

Another pedagogical implication arises from the ways in which conversations in the group interviews illustrated the creation and flow of knowledge within the student-image *agencements machiniques*. For example, while ST1 and ST6 noticed the details of colour and font in the “growth mindset” image straight away, ST4 appeared pleasantly surprised when they were pointed out by ST6. The following excerpt provides an even clearer illustration of an evolving, unfolding interpretation of this image:

ST5: *Why is “I’m awesome” up there?*

ST4: *Because it’s not about their own person, it’s about their work? So it’s rather than them saying **they** are awesome – I think –*

ST3: *But it’s “I’m awesome at this.”*

ST4: *Oh yeah it is, it’s still similar I suppose. “I’m on the right track”, I dunno.*

ST3: *I suppose it’s sort of like a not “I’m really good at this so I don’t need to try anymore – I’ve mastered this.” Like, “I’ve mastered reading, I’m now just going to stop.”*



Through this discussion, these student teachers appeared to reach a more subtle understanding of the growth mindset approach than either TE1 or TE2, both of whom read the image as encouraging a positive, rather than a growth, mindset. This suggests that the use of images such as these in group contexts can lead to *agencements*

machiniques which serve as sites where thought may take place with access to an expanded virtual space of meanings.

Personalization

In general, the students I interviewed seemed to respond to the images in ways that were more personal than their practitioner counterparts. This personalized response was evident in the frequency with which they began to tell stories. Sometimes they created backstories for the images they were connecting with; other times they related stories about their own personal experiences.

For example, the student midwives I interviewed responded to the image of the smiling midwife somewhat differently to their practitioner counterparts. Rather than seeing her as a representative of the profession, they seemed to see her as an individual, one who was either happy to be at work, or possibly happy because she was at the end of her shift and on her way home. They combined this with a personalized response, relating the image to their own futures:

SM1: Well she's definitely not off nightshift [all laugh]

SM4: She's too happy –

SM3: She's quite friendly –

SM2: Kind of makes you excited about you getting to that stage as well. [yeah] You starting a shift. She looks like she's going to enjoy whatever it is she's doing.

SM3: You never know that might be her on her way home.



The images often triggered stories from their own pasts, with student teachers describing experiences both as pupils and on placements. The student midwives, none

of whom had been on placement yet, more commonly narrated stories from their own or family members' experiences of birth.

For example, personal stories were important in the student midwives' response to the caesarean section image. Most participants felt that it was not representative of caesarean sections, on account of the darkness 'instead of a white operating room' (SM2) and the presence of 'loads of hands' (SM1). However, SM3, who had undergone a caesarean section in her last pregnancy, felt that it was quite accurate from the mother's point of view:



Yes but it is like that. There's these awful glary lights and it feels like it's dark all round and you cannae see the faces. (SM3)

This visibly jolted the other students into the realization that the mother's point of view was not only different to that of the midwife or surgeon, but also just as valid. This may be an example of how bringing students together to form an *agencement* that contains several versions of a repeated series (in this case, images of caesarean sections each student has encountered) can, serendipitously, introduce a repetition that differs in a way that serves to truly differentiate. Just such a real difference – the presence of two different levels in the same *agencement* – is, in Deleuze's view, what is need for 'an event to occur' (Gilles Deleuze from *A to Z* 2011, *D as in Desire*) and desire to flow.

8.3 Elaboration of practice/practice knowledge: plugging into desiring machines

The previous section suggested that students formed *agencements machiniques* with images when asked to discuss them in groups, and that they did so in ways that often drew in personal and narrative resources. But these *agencements* can only turn into desiring machines capable of producing change if they create meanings that generate desire in the students.

It seemed from the group interviews that this did, indeed, happen, and relied on the students being able to bring practice and contextual knowledge to bear in the ways hoped for by the educator professionals. In general, the images seemed to provide effective ways to elicit student professionals' practice knowledge in the group interviews. Student professionals and images formed *agencements machiniques* which drew in past experiences and learning from more formal contexts. Sometimes, the images surfaced practice knowledge in rather surprising ways, as in the following excerpt:

SM2: The only thing I'd say is that it's night time, and we learned that all mammals deliver at the end of the day, at dusk. When predators are away, at night time? That's why most women's contractions start at night.

SM3: So we were talking about a woman giving birth in the bush, and they seen a lion ... That's when the fight or flight mode kicks in. So the contractions might stop if there's a predator and you have to run.



This response not only reveals how what has been discussed in class is now influencing how students generate meaning from images, but also suggests a rather

different understanding of 'fight or flight response' than that brought to bear by M5 (see section 5.2), who described this response as being responsible for the cold feet suffered by women during labour.

The student teachers I interviewed connected with the image of the trench display in ways that illustrate how the process of making meaning with the images often drew on assumptions about the contexts of practice that connected to members of repeated series from their own experiences. For example, in the first group interview, the trench display was taken to indicate a secondary English class:

ST1: You can definitely tell she's an English teacher with the one on the top because it's got like books on the front ... there's also a big pile of books on the floor, and that would be like books they do in group reading? Cos that's one of the things I did in my school you had to read in groups and ... they're in piles of the same one, so you just have to lift up the pile and take them to your group ... There's a picture of a gas mask, just up there, just above the rainbow colouring. So that could be linking back to the war poets, because there's a Wilfred Owen poem that talks about gas attacks. My grandad used to read me poetry when I was younger. Maybe that's why I enjoy English as well.



Here, this student teacher connects the image with members of several repeated series, including her experiences of group reading, her reading of war poetry, and her grandfather reading to her. These series combine in the generation of meaning, including the certainty that it is an English classroom.

In the second group interview with student teachers, this same image caused connections to different repeated series: this time, of displays in primary and secondary schools. ST3 in particular recalled members of her series of repetitions, helping her primary school teacher mother create displays, to describe the former as

setting a context for new work and the latter as demonstrating students' achievements.

This led the students in this group to conclude that the trench display must be in a primary classroom. Rather like the student midwives' responses to the caesarean section image, this shows how a repeated series may be brought into, or interrupted by, a single member of the *agencement machinique*. Such introductions or interruptions can have a significant impact on the way in which understanding evolves.

Sometimes the imagined contexts were even more nuanced than that of primary or secondary, as in the following response to the knowledge vomit image:

ST4: ... I'm guessing they're quite low ability. Cos ten minutes isn't very much for everything you've learned about Of Mice and Men, so it kind of assumes you haven't learned much. And the way she's drawn it, I suspect it's a boy-dominated, low-achieving class [all laughing] ... In that case I think it's quite a good idea.



ST3: Yeah it is. It depends on who you're pitching to. If that was a high-achieving girl class they'd all go "Euych, why are you showing us this?"

ST4: Exactly. But with a low-achieving boy class, they're not going to do it anyway, so by making it entertaining, they might at least try –

Here, again, the students in the group interview appeared to be constructing a backstory to explain the image, imagining a highly specific context, one which explained the 'desperation' that might have 'driven [the teacher] to do this' (ST4).

It seems from the above that the formation of *agencements machiniques* including groups of students and images may be useful to both learner and educator in revealing the different kinds of practice and personal knowledge students connect to individual images. This uncovering may provide opportunities to compare repetitions of

meanings made with the same image by different students, and by students and their educators, who will have different past experiences to draw in.

8.4 Generating a desiring criticality

As described in section 8.1, the educator professionals I interviewed described potential uses of the images as prompts for critique, as well as elaboration, of practice.

While the practitioner professionals had appeared circumspect about criticising the practices depicted or referred to by tweets in the Twitter conversations, the four educator professionals I interviewed were often quick to criticise or critique. As discussed in Section 8.1, they saw the images as providing opportunities to engage students in critical discussions. In my group interviews with students, it seemed that the images prompted such discussions quite readily. In this section, I focus on ways in which the connections formed in the *agencements machiniques* with student professionals created opportunities for a productive, desiring critique. It seemed that encounters with images often prompted some level of critique; however, as will become evident in this section, the student professionals I interviewed only rarely spontaneously identified (and did not question) the forces and intensities *producing* practice.

Reluctant criticism: desiring connections?

While the student professionals I interviewed spontaneously criticised much that they saw in the images, they appeared rather reluctant to pass judgement upon who had tweeted the image being critiqued as engaging in bad or unprofessional practice.

Rather, they tended to extend their elaborations and storying in search of extenuating circumstances.

For example, the student midwives noticed and spontaneously criticised the '*deliberate mistakes*' in the image of the smiling midwife described by ME1. They also echoed M5's concerns that the image did not indicate whether she was a student or qualified, and other practitioners' concerns about confidentiality (see section 6.3):

SM2: Is she a student, or a qualified midwife? ... is it breaching confidentiality because now you know where she is and where she's working?

SM3: You can see the ward she's on –

SM1: ... you're no longer allowed to wear like fob watches actually on your uniform, and also I always remember they're getting called "designer bits"? Of hair? So like bits that are hanging down that shouldn't be there.

SM2: She should have no designer bits of hair, she should have her hair tied back. Long hair should be in a bun kind of style, obviously in case hair gets in any wounds.



However, despite criticising the midwife's appearance and worrying about her identifiability, it seemed that the students wanted to find excuses for her. This was suggested through the continued storying that had commenced as soon as they saw her:

SM1: Maybe she's knowed she's getting her picture taken, maybe that's why she had her hair all loose –

SM2: Or maybe that really is her on her way home. Maybe that's why her hair's down.

SM1: Oh but she shouldn't have her uniform on ... she shouldn't have her hair down and her uniform on. Just for the camera.

While in this instance, the students did not find an excuse they deemed acceptable, this extract illustrates a reluctance to ascribe bad practice or lack of professionalism to the

participants in the Twitter conversations. This tendency was particularly pronounced in the discussion of the trench display in the second group interview with student teachers. Although these students were impressed with the detail and effort that had gone into the trench display, with ST3 initially saying ‘*I think it’s fab. I would love to do it,*’ ST4 injected a note of doubt that led to a sustained critical discussion. It is worth examining this discussion at length to show how the students became increasingly sensitive to details of the image and accompanying text:

ST4: *that must of taken **hours** ... [doubtfully] I think it’s a bit, an enormous effort, I suppose for an open day*

ST3: *[putting on dramatic voice] “Come, parents, and see how fabulous I am” [all laugh]*

ST6: *Though to be honest, if I made that for Open Day, it would be staying in my room all year round. If I spent that long on something ... That looks like something the kids would help make, maybe? ... Like the kids would decide what goes on it, the kids help build it, it would be like a little project for them maybe, they’d need to figure out what’s on it, why everything’s important. That sounds like a project for a primary school that would take maybe like a couple of days ...*



In this discussion, desire seemed to generate an interpretation that returned value and validity to what risked becoming a waste of time. However, this new elaboration proved unstable:

ST3: *The children’s involvement? Limited I would say, like none of it looks like it was particularly done by children, not even like the writing.*

ST4: *It depends what she’s done with the sacks, I suppose she could have got them involved stuffing the sacks. But that’s about it.*

ST5: *[sarcastically] How exciting ...*

ST4: *But even like getting the bullets and getting the barbed wire ... you can’t just like go into shops and you’d have to, you know, source all the material. Lots of time has gone into it. [doubtfully] It’s good. What’s the point though, I mean are they going to sit in it?*

ST3: *Well it’s probably to highlight a project, I’d imagine.*

Again, a new aspect of practice was drawn in to generate a more positive response; but the meaning of the image was now swirling around on a smooth surface in the *agencement*, sliding from positive to negative and back to positive again:

ST4: What's the project, though, I mean is it "She's built a trench"?

ST3: But that's how displays in primary work though ... in primary school you're more likely to have "This is our new project, so we've got this display and we're going to add to it."

ST4: Oh yeah, that's true, that maybe makes it better. I never thought that.

Finally, however, the context of physical space, a recognition that practice should have purpose, and a dawning sensitivity to the possibility that a mock trench might turn war into something fun, led to a negative appraisal:

ST6: But I don't think it would be able to stay there long. That's a lot of space to take up in a classroom. Where sometimes classrooms just don't have space. Like that could be used for I don't know, put text books away, put things away, hold things for kids instead of just having dyed pillow cases on the floor.

ST3: It would have to have a function, in order for it to be in a classroom I would say. Yeah and it doesn't necessarily have a function, unless you're like [sarcastically] "Let's go to the trench." I mean you can talk about the war, but it's not particularly practical.

ST5: You can't have all the kids in there at once.

ST4: You could send a couple of kids to the trench, like you know if they're really bad, [puts on angry voice] "Go to the trench!" – being on the naughty step.

ST5: And then when you have some free time, do you let them play in it? I mean like to what extent do you want kids to be playing in the trench? ...

ST3: Because I don't know if I'd want them to like touch it, because you'd have kids like playing war, and shooting each other, and I don't know, should we be discouraging them from playing war? So there's a lot of lines that need to then be drawn for that activity, probably ...

ST6: She says my mini trench as well, and not like the kids' trench of the kids' room – you can tell a lot from that.

This excerpt shows the unfolding of critique, following a trajectory through time/workload, space, active involvement of children, functions of displays, respectful treatment of serious topics, and ownership of the trench and classroom space. This provides a good illustration of the kind of Deleuzian pedagogy using images envisaged by Bogue (2004). Although the discussion ultimately led to an implied criticism of the tweeting teacher, the construction and trial of new interpretations in the hope of maintaining a positive connection to the image suggests a desiring criticality. This suggests that spontaneous discussion prompted by images such as this can generate nuanced insights into possible problems (Bogue 2004) with what initially looks like an appealing idea. Such discussions may, it seems, create lines of flight away from the potentially distasteful outcomes of misplaced effort and desire to engage. However, the students' critique remained firmly focused on the activity and teacher, rather than developing an awareness of the forces and intensities that had produced such practice, as might be aimed for in a pedagogy of desire.

Productive critique

As described in section 8.1, the educator professionals I interviewed sometimes saw the images as providing opportunities for students to think about how a practice could be improved. The "knowledge vomit" image was identified by TE2 as one such example. From the students' responses to this image, it did indeed seem to stimulate some productive critique, although not perhaps at the level that TE2 had hoped for. The following excerpts show how critique of this image evolved, but also its limited nature.

Student teachers in both group interviews were quite critical of this image, although their response did not quite indicate the shock that Bogue (2004) suggests. ST1 and ST4 both noted that the apparent adult status of the vomiting figure might *'make it irrelevant to children because maybe you have to be older to have this knowledge to vomit out'* (ST1). In addition, what was generally felt to be rather unpleasant imagery was thought to run the risk of turning some students off, as it turned off most of the student teachers in the group interviews. This was evident not only in descriptions such as *'gross,'* but also in bodily responses such as shifting backwards, folding arms and grimacing.

In terms of the practice being depicted, the student teachers believed that it would not achieve anything particularly useful. ST2 noted that even for those with a good memory, ten minutes would not be long enough to demonstrate their knowledge. ST1 commented that recalling facts is not good preparation for essay writing. ST5 pointed out that regurgitation is not reflection, as the text of the tweet claimed. ST3 felt that it was not treating a serious book with enough respect, and ST6 thought the attempt at humour could backfire, leading pupils to treat the activity as unimportant.

In the second group interview, these criticisms led to a critique of the instruction, *'Write down everything you've learned,'* which explored what *might* be learned from such a book:

ST4: ... I'm like "Ten minutes? To empty your guts of everything you've learned?" And there's no criteria there, what does she mean, "Everything you've learned"? ... literally it could be anything ... Facts??? ... What you've learned in relation to your life? What you've learned about the story? What you've learned about character development? What you've learned about literature?



ST5: Yeah what you've learned about the historical context?

ST3: ... so what they'll be looking at in a book, they'll be looking at character development, they'll be looking at plot development, they'll be looking at sentence structure, they'll be looking at similes, they'll be looking at metaphor, so what do you mean by "Write down everything you've learned about Of Mice and Men"?

All of which finally led to ST4, who had initially viewed the activity as, in the right circumstances, a good idea, to revise her opinion:

ST4: Yeah my instant reaction was, it's not a bad idea for a low-achieving boys' class. But I'd need to think about all the extra stuff we've talked about before I used it.

However, despite having arrived at a point where the meaning that was being co-created appeared to be almost entirely negative, these student teachers then tried to find ways of turning the activity into something positive. ST4 suggested using it as a starter task, brainstorming that could then be developed into '*something mature and good*' by picking out key themes. ST3 thought it could be used at the start of a class to tailor subsequent activities, with ST5 adding that it could be a recap to see what had been retained from previous lessons. ST6 suggested it could be a plenary activity to feedback to the teachers what the students had learned. Thus, these students spontaneously engaged in the kind of critique and development of practice hoped for by TE2; it seemed that, at least in this case, the desire flowing through the image was productive of new ideas.

Despite the productive, apparently desiring aspect of the students' response to this image, these excerpts again show that the kind of critique that develops knowledge of the forces and intensities that produce practice was absent. As described in Section 8.1, TE1 had seen this image as presenting an opportunity to discuss issues such as that of

the quality assurance agenda. TE1's comments suggest this is a force producing not only current assessment regimes but also a wider surveillance culture, monitoring teachers' own activities. It was this, he indicated, that led to efforts to '*be seen to be doing something*' (TE1) and that in turn produced the types of practice depicted in the images. The quality assurance agenda might, then, be identified as an example of '[r]epressive forces [that] don't stop people from expressing themselves, but rather, force them to express themselves' (Deleuze 1992, pp. 288-289). It seems from the group interviews conducted in this work that intervention by educator professionals may be needed if they are to move beyond critiquing depicted practices and instead seek to identify forces and intensities that produce them.

The presence of a productive desire was also evident in student midwives' responses to the image of the books and statue described in detail in Chapter 4, as they attempted to derive some practical or inspirational knowledge from the image. The following comments were generated in the *agencement machinique* they formed with this:

SM1: I think the wisdom of the past thing is quite relevant to us, because we've been told that a lot of the things they used to do in the past are really quite bad, really wrong ... But I also think it is care that you gain in your experience, your own experience. You do rely on their past experience, the books and the experienced midwives, and their knowledge as well ...



SM3: And we'll develop our own past experiences as well, when we hit the wards and do that, start, we'll develop experiences and then a year down the line we'll think "Gosh maybe a year ago I'd have done this," we learn from our own kind of actions as well to maybe become a past that we can then build upon as well?...

SM2: It's like you were saying the other day. When you're learning to drive, the instructor will say to you don't watch other people drive, because you'll pick up their bad habits.⁵⁸

Here, in imagining their own ongoing process of becoming midwives, the students started to draw upon a self-confidence and self-determination that they seemed to be creating as they speak. However, as with the examples from the student teacher group interviews, the student midwives did not spontaneously identify or explore the forces that had produced shifts in midwifery practice, or question whether the practices of the present were inevitably better than those of the past.

The kinds of productive critique seen in these examples were also evident in other responses during the group interviews with student professionals. On occasions where such engagements with images did not lead to an imagined adaptation or transformation of the depicted practice, it may be that connecting to an image in the company of one of the educator professionals could have supplied the different level needed to allow desire to continue to flow. For example, in response to the trench display image that generated such a critical response from student teachers ST3–ST6, TE1 raised the culture of surveillance that shapes classroom practice, contributing to constant display, in his response to the trench display image:

There's effort to do something, and then there's effort to create something that other people can see and see you're doing



⁵⁸ Note that meaning generated in the encounter between these students and this image was very different from that of M5 described in Chapter 5; here, rather than being something to be celebrated, the wisdom of the past was seen as something to be questioned and often rejected. It also highlights how the past, to these young students, includes the recent past in which their educators were practising professionals, providing a useful reminder that an educator's recent past (or even present) may seem like long ago to their students.

something ... because there's such a high degree of surveillance in schools ... senior members of staff ... walk past your room to make sure that you were using ICT and that you had learning objectives on the board that the children were putting into their books and they were doing group tasks. (TE1)

This connection, if made with student teachers, might have helped them to better understand the circumstances generating a practice they had judged as flawed. Such an understanding may have enabled the student teachers to maintain a positive, desiring connection with this image, without suggesting that they adopt such practices in their own professional futures.

The examples in this section show that spontaneous engagement with the images in my group interviews did not produce 'radical subjects who deploy pleasures and take risks to break the codes of ideology and established representations' (Zembylas 2007a, p. 338). That is, the students did not appear to develop knowledge of the forces and intensities influencing the practices and professions they will enter. Without such development, the risks identified by the educator professionals in Section 8.1 may be realized. Thus the images offer opportunities that may need to be carefully handled.

8.5 Summary of pedagogical potentials

The images shared during Twitter conversations among professionals may be conceived of as a constantly regenerated resource, reflecting current trends and concerns. However, the images were also identified by the educator professionals I spoke to as posing risks. In particular, the educator professionals worried that the images might produce student professionals who measure themselves against unreal ideals; embrace questionable practices and notions of good practice; or become

demoralized and alienated. Thus the images and chats may not only be potentially useful – it may be important that they are included in pre-service curricula, so that such issues can be explicitly identified and challenged.

It seemed that the images allow student professionals (and their educators) to plug into desiring machines that include aspects of practice outside their direct experience. The mutability of meanings associated with images allows for a multiplicity of interpretations, a multiplicity that may go unnoticed if not elicited through group discussions. In addition, responses to such images are in part generated by the synthesis of repeated series of experience. Students' experiences of practice situations are almost inevitably more limited than those of professionals, providing a possible explanation of their tendency to respond to the images as concrete individuals and specific moments in time, and to relate them to specific, single instances from their own experiences, rather than drawing general conclusions about practice and contexts of practice. Discussion of the type held in the group interviews allows for exposure to multiple perspectives, and thus expands the virtual space to which the students have access; if *agencements machiniques* such as these also included experienced educator (and perhaps practitioner) professionals, the virtual to which the students connect could be expanded still further.

Chapter 9 – Out of the water

This is the final chapter of this thesis. It has the usual, serious purposes: to summarize the findings, to demonstrate their potential impact, and to make suggestions for future research directions. However, it also has another, more personal, purpose: to provide the cut to the series of repetitions of academic writing that are the preceding chapters, to enact the radical change that differentiates what went before (writing) and what comes next (unknown future). As such, it contains what might seem to be a reversal of the change in voice that developed during the first chapter of this thesis.

9.1 Summary of main findings

This thesis has explored the pedagogical potential of images shared during two intra-professional Twitter chats. I set out to work out what was in the chats that might be used as pedagogical resources in formal education. While addressing this question, I saw aspects of how images are involved in informal professional learning within the chats themselves.

The sociomaterial sensibility I brought to my research led me to develop ways of visualizing the chats that highlighted the fact that participants connect with tweets, including tweeted images, rather than directly with other twitter users. These visualizations foregrounded the relations and interactions between Twitter users and images, and suggested that images have a role in structuring the conversations. They also facilitated identification of both images that appeared to elicit strong responses, and chat participants who interacted with images in varying ways.

By combining Deleuze's notion of the actual as a contraction of the virtual with ideas from visual social semiotics, I developed a way of describing and analysing the responses produced in encounters with images. I showed how this helped understand differences in actualized responses generated with practitioner, educator and student professionals, and also myself.

My conceptualization of the both the chats themselves and encounters with images during interviews as *agencements machiniques* drew attention to the importance of desire in mobilizing flows of knowledge and affect that might lead to professional learning. This approach also led me to look for forces and intensities that shape those flows, and thus contribute to the development of new forms of perceived professionalism needed to operate in the online space, as well as to the spread of practice and affect. I identified three such forces: the technical affordances offered by the platform, participants' own notions of good practice, and participants' sense of purpose for the existence of (and their participation in) the chats. These interacted and shifted to produce lines of flight and articulation, including norms such as those around sharing photographs of third parties and the importance attached to acknowledgement. This analysis resulted in the extension and adaption of the Deleuzian ideas underpinning it with the identification of different types of interaction as twists, braids and knots.

Finally, I used the lens of a pedagogy of desire (Zembylas 2007a; Zembylas 2007b) to suggest that a Deleuze-inspired pedagogy could aim to develop a desiring criticality. I used excerpts from interviews with educator professionals and students to show how

images from the Twitter conversations might contribute to such a project. I also suggested that the kind of criticality that seeks to identify forces and intensities shaping practice in both the workplace and the online environment might need to be prompted and facilitated by educators, and not left to arise spontaneously among student professionals.

9.2 Recommendations arising from this research

There are a range of different recommendations that arise from this research, relevant to different stakeholders in the pre-service and ongoing learning of professionals.

Recommendations for educator professionals

The analysis presented in the previous chapter suggests some ways in which educator professionals might make use of the images shared in intra-professional Twitter chats in their teaching. These fall into two broad categories: critiques of practice, and sensitivity to the power of images.

Critiques of practice

First, educator professionals could treat Twitter chats as sources of images that can be used to prompt productive critical discussion with students about the practices depicted in the images. This would be of benefit to students in that it might bring them into contact with a wider range of new ideas that they could adopt or adapt in future than they might encounter through placements alone. The multiplicity of potential uses of particular resources or practices that came through in my interviews would be

likely to be replicated in group discussion around many different images, helping student professionals to connect to more possibilities. Discussions around images could also be beneficial in providing opportunities to critique practices, so that perhaps students might be less likely to adopt doubtful or flawed approaches and activities.

Images from Twitter chats could also be used to prompt discussion about the values and risks associated with sharing particular pictures. If these discussions open up questions about the reasons why a professional might have chosen to share a particular image, they could lead to more sophisticated understandings of professional judgements. Student professionals who had considered the positive reasons a professional might have for sharing a particular image on social media might then be better prepared to make decisions of their own around the sharing of photographs of mothers and babies, or school children, or pupils' work. Similarly, concerns around anonymity and identifiability, that seemed so important and yet variously understood in the interviews I conducted with midwives, might be aired and clarified. By talking about concrete examples of images that have been shared, students might be equipped with the questions that they need to be able to ask of themselves and their peers about their own professional use of social media.

The images could also be used to prompt a further level of productive critique applied both to the depicted practices or messages and the intra-professional chats themselves. Students could be encouraged to consider what it is about the culture of the workplace, the pressures from external and internal sources, or the culture of the social media platform, that produces particular practices and norms of behaviour. That is, student

professionals could be encouraged to recognize that practitioner professionals do not have complete autonomy, and instead operate within a web of interacting and interfering (but often invisible or forgotten) forces and intensities.

These images, and the responses of chat participants to them, could also be used to draw attention to and question what has led to the norms of politeness and positivity that characterise the spaces. Not only might this better equip student professionals for future participation in these or similar chats, but they may also contribute to the development of new norms that perhaps do not always lead to flawed practices being ignored, rather than productively critiqued.

Visual practice

My analyses also suggest it may be necessary to consider explicitly educating professionals about *visual* practices. As argued in Chapter 1, the increasing ease with which images can be created, edited and circulated, combined with the screen-based interfaces of common digital devices, has led to an explosion in the use of images as forms of communication. Students are taught, through school and higher education, to communicate carefully with words, but it is (currently) rare for curricula to include consideration of the ways in which meanings are co-created by viewers and images. This may be an important omission in relation to the education of student professionals, who may need to be particularly concerned about being misunderstood on social media.

The fact that practitioner, educator and student professionals I interviewed responded to the images I showed them by offering differing interpretations, and in the case of the

student professionals invented sometimes quite extensive back stories for the characters or practices depicted in the images, is a powerful illustration of the difficulty in communicating a precise, deliberate message about practice with an image. The contingency of connection with personal stories cannot be avoided. However, an awareness that a multiplicity of responses and interpretations is not only possible but likely may be an important element in judgements about what images to tweet, and what accompanying text to use.

My analysis drew on visual social semiotics, which could perhaps be used to provide students with a language to talk about the construction, use and impact of images. A visual social semiotic description of an image highlights how dynamics and salience are created or lost as well as how they contribute to the construction of a narrative or meaning. This may help draw attention to features of images that can be deliberately included or avoided. This might be particularly useful for student teachers, who are likely to generate images to use in class as well as on social media. An awareness of the impact of details such as varying colours and fonts, the precise location of words in relation to images, or the attitude and direction of a depicted human's gaze may lead to more thoughtful and potentially higher impact image construction or selection practices.

Recommendations relating to continuing professional development

As well as having implications for the education of pre-service professionals, the findings in this thesis also lead to some recommendations in relation to continuing professional development.

One recommendation is essentially the same as the final recommendation in the previous section. Practising professionals are likely to use (share or encounter) images on social media. They may therefore find it useful to acquire a language to describe and understand the impact of images and the ways in which meanings are generated in interactions with them. For those professionals seeking to build their social media presence, an understanding of how the images they share may be read and interpreted will help them make decisions about what images to tweet, or whether to edit an image before sharing it. For those who are more likely to view than to share images, acquiring a language to describe their own responses, and to consider what might be deliberate or accidental about the construction of an image, may help them to engage in their own productive critique.

The findings also suggest that social media training for professionals could focus less on identity management and performance as a professional, foci which position professionals as broadcasters and objects of other people's attention. Instead, it may be beneficial to include training that describes the use of social media as participation in an *agencement machinique*, or a network of connected users, images and words. As with pre-service professionals, training that encourages professionals to develop a productive criticality towards both their work places and practices and the social media spheres they engage in may help them make more conscious decisions about their own adoption of or contribution to these practices.

Recommendations for re-drafting guidelines on social media use

My findings also have implications for those responsible for the commissioning and writing of guidelines relating to social media use. The two chats studied in this thesis, and particularly the sharing of images within them, play a positive role for participants. Guidelines need to recognize that images play an inevitable and important role in digital communication. They could recognize and describe the value of such exchanges, encouraging participation while still recommending thoughtfulness and caution. Images seem to have importance in both constructing notions of good practice and in remoralizing. Blanket bans on, for example, images of children, may not only be unenforceable but also unnecessary. Instead, it may be better to discuss images and perhaps give examples of more nuanced/ambiguous situations and show multiple sides of arguments for and against posting. Formal guidance and training need to equip professionals with the questions for ongoing thinking as they shift between evolving platforms, not a set of rules, and to enable them to make contextual, contingent judgements about their own and others' practices.

9.3 Suggestions for future research

While this work has addressed my initial research questions, it has generated many possibilities for further research.

One of these was raised by one of the interviewees: the nano level of communication that has remained inaccessible to the current research. M5 suggested that the Direct Messaging that goes on in private between chat participants might provide new

insights into what was going on in the conversations. The chats as a whole function to remoralize in a rather diffuse way, providing support at a communal or broadcast level. Given how important the exercise of compassion seemed to be to the midwives I interviewed, and the creation of a space to experience joy in teaching to the teachers I interviewed, the more personal communications going on in this hidden channel might reveal still more about the flows of affect and desire.

I have already noted that differences in the perceived purposes of the two chats studied here may reflect different preponderant conditions of and pressures faced by the two professions. This is despite certain similarities in terms of, for example, gender profiles and the public service nature of the two professions. It would be of great interest to compare chats held by professions in which some of these factors were varied, for example in the more male-dominated culture of paramedics, or of prison-based educators. It would also be interesting to compare the features of chats such as those studied here, which have community origins and apparently continued community ownership, with those that have more obvious authority figures.

To better understand the impact of the social media platform mediating the intra-professional communications, it would also be of interest to study groups of midwives or teachers on other platforms. For example, Facebook is widely used by midwives for professional networking, and as one of the midwives I interviewed suggested, it might be seen as a more effective environment for the advocacy which some midwives appear to value. Similarly, a comparison between the micro-blogging activities of teachers and their longer-form blogging (and commenting) on sites such as WordPress

could reveal more about both the circulation of practice knowledge within networks of teachers and the impact of different technical affordances.

There are also further developments that could be made on the methodological front. For example, the chat visualizations could be extended to include time-dependence. It would also be interesting to develop ways of comparing the more broadcast- and conversation-like aspects of chats. Some tweets (and tweeted images) are favoured or retweeted but not commented on or modified, while others generate sequences of related replies, more like a discussion forum. It may be that more can be learned about the dynamics of the chats and their contribution to professional learning by exploring these different patterns.

More broadly, the analytical approaches developed in this thesis could be applied in other contexts. For example, visualizations of online (and potentially offline) interaction data of the type developed here could be used to explore learning in other digital platforms, including school and university Learning Management Systems. The approach to analysing responses to images might shed light on the impact of (found) images in contexts beyond intra-professional social media interactions, or might be used to develop profession-specific visual literacies. Finally, as social media and digital technologies continue to evolve, new forms of professionalism and notions of good professional practice are likely to continue to emerge. Research into how professionals learn and adapt in such environments will therefore continue to be important in planning pre-service and ongoing professional learning.

Thus while, in reaching the conclusions and making the recommendations laid out in the first two sections of this chapter, this research has 'close[d] right up on itself like an egg,' it is also something that 'flies off in all directions' (Deleuze 1995, p. 14). Which is, perhaps, just as it should be.

9.4 Surfacing

Undertaking this doctorate, especially against the background of having gained a doctorate in physics almost exactly twenty years ago, has been a strange but wonderful experience. As I suspected at the outset, there was indeed a great deal below the surface that I was able to experience and begin to understand by plunging my hands a little deeper. And, now that I am in the twilight of this PhD research, I am indeed left staring somewhat obsessively into the basin, wondering what I have missed.

I am also left wondering what I will find in front of me when I eventually look up again. One thing I am sure of, though, is that the importance that crossing the old Forth Bridge at Stirling has developed for me will not fade.

*It was late, late in the evening,
The lovers they were gone;
The clocks had ceased their chiming,
And the deep river ran on.*

(From 'As I Walked out One Evening,' by W. H. Auden)

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