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Doing sociomaterial studies: the circuit of agency

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ABSTRACT

In recent sociomaterialist, materialist and post-human theorizing which foregrounds the importance of objects and bodies, ideas of consciousness and intentionality are seen as potentially tainted either with Cartesian mind-body splits or with subjectivities that are too discursively constructed. At the same time, new theories of affect as something pre-personal and corporeal further marginalize the notion of human agency. But could the pendulum have swung too far in outlawing the *human* in favour of the *pre-human* and *post-human*? How can sociomaterial theories be reconciled with educators' ongoing commitment to give their pupils voice and identify effective pedagogies for teaching digital media? This paper analyses data from a study of online multimodal writing practices in a London primary school to expand current theorizing about agency. It proposes the idea of a phenomenologically-inspired circuit of (sociomaterial) agency as a way to bring back the 'human' and incorporate the middle ranges of agency.

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Sociomateriality; affect; agency; reflexivity; circuit of culture

1. Introduction

But what if we loosed the tie between participation and human language use, encountering the world as a swarm of vibrant materials entering and leaving agentic assemblages? We might then entertain a set of crazy and not-so-crazy questions: ... Can an avian virus jump from birds to humans and create havoc for systems of health care and international trade and travel? (Bennett 2010, 107)

The agency of the natural and physical world has been brought vividly and starkly into focus over the past two years as Covid-19 has shown that Bennett's (2010) question about swarms of vibrant materials, far from being crazy, was urgent and prescient. Sociomaterialist, vital and new materialist theories such as Bennett's, which put non-human actants back into the frame, have provided a welcome rejoinder to anthropocentric accounts of agency. However, this paper will argue that the move away from human language-use is problematic for educators. Instead, it proposes using ideas from phenomenology to extend sociomaterial accounts of agency, allowing the teacher and student to 're-appear'.

Sociomaterial theory in education (Burnett and Merchant 2020; Fenwick and Edwards 2013) has rightly problematized the anthropocentrism of sociocultural accounts of learning and literacy by drawing attention to the way in which objects and technologies in classrooms are not fixed or neutral. Instead, they have agency that can contribute to disruption and unintended effects of the assemblages they are part of. Drawing on the ANT (Actor Network Theory) and post-ANT work of Law (2004) and Mol (2002), Burnett and Merchant (2020, 52) note how sociomaterialism

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complicates ‘readings of the social and cultural … by attending to fluidity, affect and emergence’. For them and for others such as Leander and Boldt (2013) who also draw on the assemblage theory of Deleuze and Guattari (1987) and Massumi (2002), the attention to materiality and corporeality allows us to focus on the unexpected and unpredictable as features of literacy learning. However, as the recent wishlist of this journal’s editors (Williamson, Potter, and Eynon 2019, 89) noted, the ‘human factor’ seems to be absent in the post-human and sociomaterial perspectives on digital literacies that have started to take root. This paper looks at whether it may be possible to bring it back into the frame.

The following account of digital literacy practices in an inner London primary school analyses the interplay between the social and material in children’s interactions with technology, developing theories of agency (Coole 2005; Archer 2000) which are underpinned by the work of phenomenologist Maurice Merleau-Ponty. The rationale for the empirical study was to examine the following research questions: how do the social and material become woven or imbricated to shape literacy practices when a wiki is integrated into classroom practice? How do children’s agency and voice emerge – in particular, what is the role of affect in the emergence of literacy practices and human agency? For Archer (2000), writing in the social realist tradition and following Merleau-Ponty, reflexivity, affect and agency are closely linked: we become active agents as a result of reflexive affective encounters with the natural world and the practical and discursive orders. Archer’s (2000) theory of agency is unequivocal in bringing back ‘real people’ from the brink of extinction in social theory, foregrounding affect as key to the emergence of agency. Her conceptualization of how human agency emerges as part of our embroilment with the world draws heavily on the idea of the ‘inner conversation’ we have with ourselves which characterizes our reflexivity. However various critiques (Caetano 2015; Vandenberghe 2005) have been levelled at Archer, in particular her failure to account for the role of conversations we have with *each other* on our reflexive deliberations.

This paper looks at how, in an ethno-case study (Parker-Jenkins 2018) of primary pupils’ digital literacy practices, agentic tendencies emerged that were both *corporeal* and *personal* in line with Archer’s theory, but also *intersubjective* such as those Coole (2005, 125) identifies in her phenomenologically-inspired agentic spectrum, ‘an ontology of agentic processes that can accommodate their diverse, partial and often haphazard manifestations’. Developing theory through empirical observation, it seeks to extend the discussion about sociomaterial agency in education by suggesting the following way to frame it: relationality is always key in understanding agency – objects and the natural world are ‘sticky’ and appropriate us just as much as we appropriate them. Using ideas from phenomenologists Heidegger (1969) and Merleau-Ponty (1962), we are characterized as always in reflection with the world, always appropriating it but also (crucially) able to appropriate *ourselves* because of our capacity for language and interpretation. Thus our relationship with the world is characterized not just by a *corporeal* or *carnal* reflexivity but also a *discursive* reflexivity as we inter-act and intra-act with the world and each other – intersubjectively and personally as well as intercorporeally and pre-personally (corporeally). In order to represent these ideas, this paper proposes visualizing intra-action as a circuit of agency (see Figure 1 below) which incorporates the ‘middle ranges of agency’ (Sedgwick 2003, 16), the personal and intersubjective, but always contingently and provisionally: both the social and the material have potentials and tendencies that may only be realized because of the reflexivity that arises through our embodied affective encounters with the world and each other.

Material agentic tendencies are always at the centre of the circuit and our reflexivity only arises because of our mutually appropriative entanglement with the world. Seeing this reflexivity as not just somatic, visceral and corporeal (the top half of the circuit) but also, building on phenomenological accounts of language, as discursive (bottom half of the circuit) helps us to unpick opportunities for agency at an individual and collective level as well as at the pre-personal

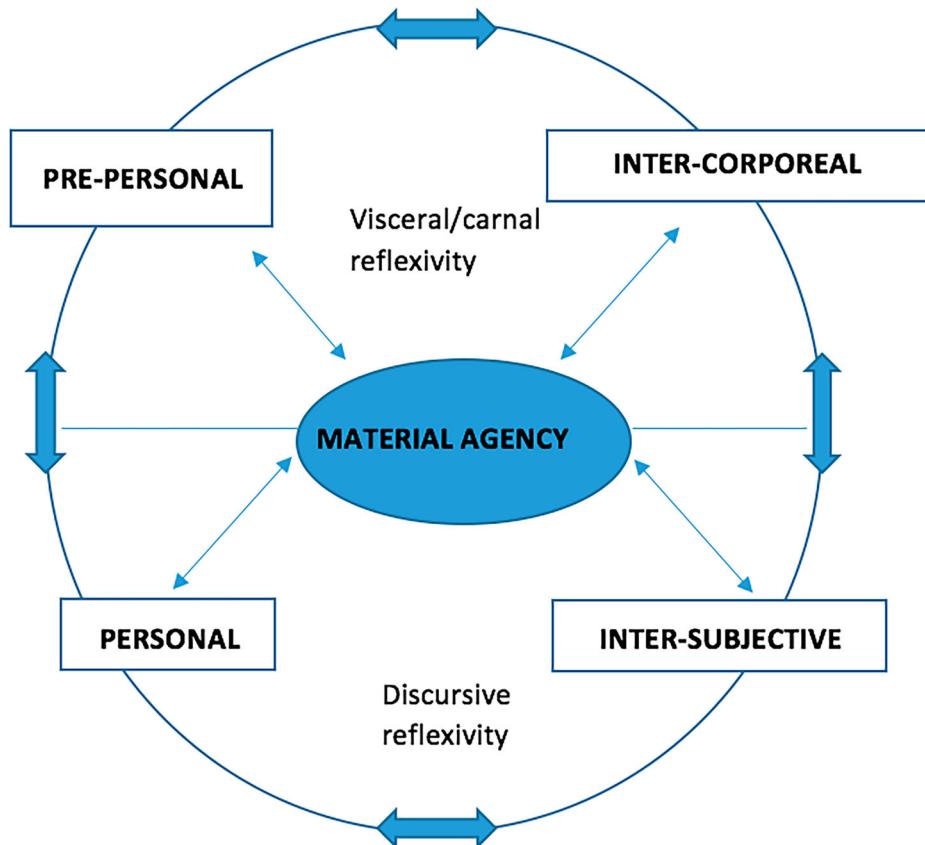


Figure 1. Circuit of sociomaterial agency.

(corporeal) and intercorporeal. We are always embroiled in the world and our language is part of that embroilment.

2. Sociomateriality and human agency: our reflective relationship with the world

Relational theorists often invoke metaphors of weaving, with Latour himself (1996, 235) in *On Interobjectivity* suggesting that objects can be ‘comrades, colleagues, partners, accomplices or associates in the weaving of social life’. Yet nagging doubts remain for some who cut their teeth on New Literacy Studies – sociocultural and ideological theories of literacy which foreground the development of identity and agency. Are objects really equal partners in any network or assemblage or should we pay more attention to the way that their agency (material agency) may be different from the agency we have as people (social agency)?

Materialist (Bennett 2010) and sociomaterialist accounts which draw on the work of Latour and Deleuze and Guattari (1987) have done a great deal in recent years to: (i) acknowledge recent advances in physics which incorporate post-Newtonian accounts of matter as something lively rather than inert with far more potential for agency than we may have previously considered; (ii) move beyond well-worn sociological debates about structure and agency, problematizing the reification of categories and critiquing the critiques which have often failed to deliver meaningful change (Latour 2004); (iii) unsettle the Enlightenment view of the atomistic individual (both as research subject and researcher). However, Fenwick and Edwards (2013, 59) note the problem which the concept of agency presents to

sociomaterial researchers: ‘Some refuse to use it altogether with its associations of human individuals’ intention, initiative and exercises of power. Others like Bennett (2010) ... write of agency as relational, possible only through assemblages’ with agency usually seen in terms of sedimentation or the effects of networks rather than inherent in people or objects’.

Developing alongside ANT and post-ANT traditions of sociomateriality are new theories of affect (Massumi [2002] based on Deleuze’s [1992] interpretation of Spinoza) which break from past ontological and epistemological commitments. As Wetherell (2012, 19) notes, these present ‘something unfamiliar in social science communities bored with at least 20–30 years of the “discursive turn” ... analyses of affect, such as Brian Massumi’s ..., split discourse and affect into tracks and privilege the track of the body’. Affect is seen not as something inside the head of the psychological subject but as *intensity* arising from sociomaterial relations and characterized as often chaotic and unpredictable. There is considerable synergy in these theories which foreground the post-human and seek to develop the idea of intra-activity of the pre-personal (or corporeal) and the trans-personal at an ontological level. Both theoretical camps mark a shift away from constructionism and positivism towards ontologies of emergence and becoming, a focus on the relational (between the social and material) and the sidelining if not ex-communication of the human subject. This poses some potential difficulties however for educators, in particular those working with literacy and new media who have for so long been accustomed to rallying cries of the importance of allowing children voice and agency and the need to devise new pedagogies which build on the potentials of digital technology to provide new spaces and ways of learning.

In much of Actor Network Theory and STS (Sociotechnical) Studies, human and non-human agency are considered symmetrical. However, the work of Suchman (2007) on human-computer interaction suggests an asymmetry or dissymmetry. She asks us to look at ways to ‘reconceptualize the granting of agency in a way that at once locates the particular accountabilities of human actors, while recognizing their inseparability from the sociomaterial networks through which they are constituted’ (2007, 270). As she notes, even if you believe in the mutual constitution of persons and artifacts, they ‘do not constitute each other *in the same way*’ (269) because ‘persons just are those actants who configure material-semiotic networks, however much we may be simultaneously incorporated into and through them’. (270). For Suchman, it is our ‘orientation to the contingent possibility that something might become relevant’ (250) that differentiates human agency. The new sociomaterial paradigm (whether in the assemblage theory or critical and social realist tradition) puts considerable focus on contingent possibilities and *potentials* for emergence. Postma (2012, 65) writing in the assemblage theory tradition, exhorts educators:

to establish what the actual and emergent effects of the sociomaterial arrangements are in order to define and establish their own agential role. It is also important for educators to imagine different realities that may be educationally more valuable and sound.

Yet the imagining of different realities may require a reflexivity such as the one Coole draws on in her (2005) spectrum of human agentic capacities – a reflexivity based on phenomenological accounts which, far from being solipsistic, derives from the lived body. For Merleau-Ponty (1962, 93), ‘The body catches itself from the outside engaged in a cognitive process; it tries to touch itself while being touched, and initiates “a kind of reflection” which is sufficient to distinguish it from objects’. Heidegger (1969) describes this relationship with the world as one of mutual appropriation using the German word *ereignis* which translates variously as ‘appropriation’ or ‘event’. The notion of appropriation implies activity and agency and the coming into their own of both human and non-human actants: ‘The event of appropriation is that realm, vibrating within itself, through which man and Being reach other in their nature, achieve their active nature by losing those qualities with which metaphysics has endowed them’ (Heidegger 1969, 37). But while we can appropriate our surroundings in a corporeal way just as they appropriate us, Heidegger’s notion of human appropriation also has a hermeneutical dimension. ‘In understanding, there lurks the

possibility of interpretation that is, of appropriating what is understood' (Heidegger 1962, 213). In this account, we are in an appropriative relationship with our embodied, interpretative selves.

Thus reflexivity can be carnal or visceral but, as both Heidegger and Merleau-Ponty point out, it can also be discursive – our capacity for reflection is 'enhanced immeasurably by the development of language ... since it is in language that the interiority associated with reflexivity acquires altogether greater powers of symbolic variation, communication and freedom. It allows singularities to turn back upon themselves more eloquently' (Coole 2005, 132–3). As Mertel (2020, 472) notes, this Heideggerian account of reflexivity is important for educators as it allows us to see 'education as a collaborative process of co-appropriation that enables students to "come into their own", to cultivate a "voice"', challenging discourses of technology which reify and glorify performative data-driven outcomes.

3. Methodology

This study was carried out in an inner London primary school, in a Year 4 class of which I was the teacher. The children were encouraged to generate their own multi-modal texts on a wiki from home as well completing some scaffolded homework and class-based tasks. Use of the wiki involved altering the physical spaces in which literacy practices took place; it also involved a revisionary pedagogical approach, potentially altering the relationships not just between teacher and pupils but between the children themselves as the software afforded them the opportunity to collaborate on texts. This approach was emergent from my own imbrication in sociomaterial contexts and political structures. It arose from my reflexivity about an increasingly traditional UK literacy curriculum, the proliferation of young people's digital literacy practices outside school and the affordances of the wiki which allowed children to communicate beyond the confines of the classroom and publish with and to each other as an audience. Inspired by metaphors of rhizomes (Deleuze and Guattari 1987), it involved invoking a pedagogy that stepped outside the cognitivist paradigm which frames the literacy curriculum and taking a less arboreal pedagogical approach which might be more inclusive and *productive*, in the sense of facilitating 'social justice ... to ensure learner agency, relevance and challenge' (Marsh 2009, 203). Thus children were encouraged to generate digital texts that related to their own interests, in response to the material agency of the wiki which allowed them to work asynchronously and collaborate, insert multi-modal elements (such as images and videos) and edit and revise their work multiple times. They were also encouraged to make positive comments about each others' wiki pages in the discussion section below these pages. Ethics approval for the research was sought and received through the Institute of Education's Ethics Review Procedures. Parental written approval was required for all children involved in the wiki project and further written consent was received for all children who took part in interviews and whose work was used as data.

The twelve-month intervention using a wiki as a space for online literacy practices was preceded by a pilot study which used a Managed Learning Environment, Fronter, as the software. At that time, Fronter was being promoted as a platform where students could upload homework produced on software such as Microsoft Word or Powerpoint. However, during this intervention, pupils were allowed to construct webpages about subjects of personal interest, in addition to pages where the topic was suggested and scaffolded in class. Interview and observation data from the pilot study showed the emergence of pupil voice and agency for some pupils. Building on the work of Margaret Archer, in particular her (2000) work, *Being Human: the Problem of Agency*, a theoretically-informed research design was then constructed that would afford insights into the way in which human agency emerges as the social and material are layered across online and offline spaces. The study involved being embedded in a context over a sustained period of time giving it some characteristics of an ethnography. However, it also involved some hypothesis-testing more common in case studies so could better be described as an ethno-case study (Parker-Jenkins 2018), one that was explanatory (Yin 2003) and critical in that it was addressing issues of power.

The children in the study were between 8 and 10 years old and consisted of 12 boys and 15 girls. The school has large numbers of children from different ethnicities, including recent refugees and the children of refugees. Almost three-quarters of children (74%) in the class spoke another language at home and were classified as having English as an Additional Language (EAL). Around two-thirds of pupils qualified or had qualified during their school career for Free School Meals (the measure used in the UK as an indicator of socio-economic deprivation). Data were collected from the 27 pupil participants and 5 of their parents during the 12-month wiki intervention and over the following year when I continued to teach the same children. Data collection methods chosen were participant observation, interviews with pupils, parents and teachers and analysis of documents and texts (online and offline texts created as well as scrutiny of conventional assessment data).

Observation took place both in the physical space of the classroom as well as of students' online behaviours and practices. Because I was also the teacher, I was 'participant as observer' rather than 'observer as participant' (Gold 1958). A research journal was kept throughout the data collection period, fleshing out notes taken while teaching and detailing observations of online participation. Semi-structured interviews (with children, parents and teachers) were a key part of the data collection process. In all, sixteen children (of the 27 in the class) took part in interviews (either individually, in a pair or in a larger focus group). In keeping with both the critical pedagogy and the theoretical focus of the study, the methods also attempted to value pupil voice (Bucknall 2014): for some children whose voices appeared muted in the larger group, individual interviews were conducted. The choice of children to interview was made using purposive sampling techniques. The children who were participating most enthusiastically in the wiki were the ones chosen for the initial rounds of focus group interviews. Subsequently, theoretical sampling was used to select the children for interview.

Data from interviews and observation were also triangulated with documents and written and multi-modal texts, both those produced during the intervention and those that were produced independent of it, 'found materials' (Hearn and Thomson 2014, 157) such as ongoing assessment data and contextual demographic data. The children's offline writing in their school books was also part of the data and was compared with writing produced online on the wiki. Texts and documents were analysed using qualitative content analysis. The data was analysed using a combination of NVivo software and manual colour coding. During analysis, the *social* and *material* were seen as analytically distinct categories as advised by Archer (2000) and Leonardi (2013). Further sub-categories *emergent properties/tendencies* branched off these categories in a mind-map which was drawn up to visualize connections between the categories (Hawley 2020). Coding and analysis of the data led to a focus on the theme of reflexivity, both at a visceral level and a discursive level, in the emergence of agency.

4. Results

While Archer's (2000) theory is nested and sequential with the corporeal coming first, the data in this study suggested something messier, with a variety of agentic potentials emerging at the same time, as Coole (2005) suggests in her spectrum of agentic capacities. Coole's account sees 'at one pole ... corporeal processes and at the other a transpersonal, intersubjective interworld' (2005, 124) while she locates 'individual or collective agents in the middle of the spectrum where they emerge as contingent singularities' (124). Following the phenomenological trail set up by both Archer (2000) and Coole (2005), this section will detail the way in which agentic capacities emerged as the children appropriated their surroundings as their surroundings appropriated them while the next part will consider how they appropriated themselves in the process.

4.1. Agency through appropriation with our surroundings – foregrounding the somatic

In terms of pedagogy, the sociomaterial positioning of bodies in the traditional classroom space, the *intercorporeal* processes, with many hands up vying for the teacher's attention, was replaced by a

freer, looser, more ‘fluid’ organization of space and time in the digital arena where pupils had the possibility of showing what they are capable of which the conventional classroom may shut down. The technology in this study afforded pupils the opportunity to work at their own pace in their own home space where there were potentially fewer distractions and the opportunity to take up more comfortable postures. The results showed how both visceral and discursive reflexivity contributed to the emergence of pupil agency as a result of children’s embroilment with the material. Pupils had a *pre-personal, corporeal* response to the changed environment but there was also a hermeneutical dimension as pupils interpreted and acted upon this. Thus agentic tendencies that were *pre-personal, personal* and *intersubjective* emerged as pupils intra-acted with the material agency of the wiki. The reflexivity of adults (teacher and parents) was also part of the sociomaterial entanglement as they interacted with the software and the children.

4.1.1. Pre-personal and personal agentic tendencies in response to the wiki

Not every child thrived in the online space of the wiki but this paper will focus on those who did, children like Vladimir and Finlay. For these two boys, their early experiences of classroom literacy were overwhelmingly negative. Their interactions with the material objects (pencils etc.) made literacy into something to hate (see Figure 2). To observe Vladimir in a traditional literacy lesson in Year 4 was to see someone involved in a struggle. For him, repeated interaction with pencil and paper had left him so frustrated that he had every intention of avoiding it when he could. This often involved absconding from class.

Children like Vladimir are ‘interpellated into a system in which they misrecognize themselves as learners’ (Potter and McDougall 2017, 18) not just because of narrow curricula or traditional pedagogy but because of their imbrications with the tools and spaces of the traditional classrooms. As the project progressed, Vladimir’s contributions both on and offline became longer and more confident until he was generating multi-modal texts (both solicited and unsolicited) in a variety of genres. By the end of the intervention, Vladimir had transformed into the highest achieving writer in the class, using conventional teacher assessment data.

For children like Vladimir and Finlay, the greater control over use of time and space which the software afforded them, combined with their sense of ‘less pain, more gain’ as they used the keyboard, created a virtuous circle. As Vladimir pointed out, ‘You can’t slouch and do some writing. You need to be on a table. With a computer, you can slouch as much as you want. Technology changed a lot of things’. Thus the affective dimensions were two-fold: firstly, they were about physical well-being, our somatic reaction to the environment we encounter. As the children’s bodies came into contact with the surface of objects, feelings were registered ‘viscerally’ (Archer 2000, 198) as children experienced pleasure rather than pain. The participants in the wiki revealed repeatedly in focus group interviews the importance of haptic and sensory paths to their writing praxis – the *pre-personal* – just as the participants in Merchant’s (2014) study of iPad use with young

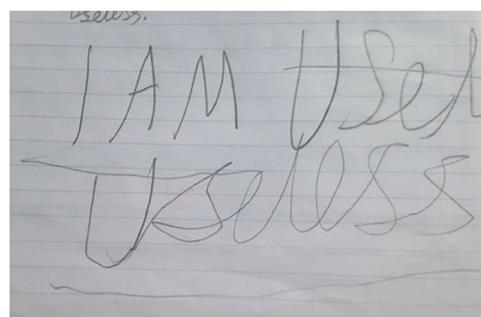


Figure 2. Written by Vladimir on his book during a writing lesson.

children did in multi-modal analysis of their reading praxis. The children referred to the ease of pressing the keys and ‘touch’ editing with the backspace key which generated less physical discomfort and avoided the ‘ache’ which often came with handwriting. The second affective dimension was in the practical order. As children repeatedly said, their imbrication with pen and paper often led to frustration, fatigue and ultimately boredom as they had ‘to write it out so many times just to make it make sense’. By contrast, when typing, they were able to generate something that ‘looks like a text’ much more quickly. Vladimir talked about how he could ‘improve something … with just a few clicks’. The wiki’s affordance of allowing multiple revisions without mess allowed children to develop feelings of competence as they achieved mastery. This led, for some of them, to a willingness to participate further as was evident from scrutiny of their texts on the wiki. As Archer (2000, 289) notes, our feelings of performative accomplishment emerge from our interaction with objects, with ‘competence reinforcing further practice and the frustrations of incompetence leading to abandonment’. What was felt at a *pre-personal* or corporeal level seemed to influence what happened at a *personal* level as children reflected on and interpreted affective experience.

4.1.2. Intersubjective agentic tendencies in response to the wiki

There was also a discursive and *intersubjective* element to their affective interactions with the software. Children repeatedly spoke about fun and enjoyment and their sense that whilst on the wiki they did not feel it was work. A child in the pilot commented, ‘It feels like I’m just talking to my friends online’. Peer-to-peer interaction was a key factor in the success of the wiki project. Vladimir and Finlay made progress not just because of the more positive experiences they had with the haptic interaction with the keyboard, the sense of performative accomplishment they felt using the hardware and software and their reflexive response to the pedagogy. Their reflexive interactions with each other both online and offline were also vital. They contributed enthusiastically to a collaborative Minecraft narrative, which Finlay had proposed, suggesting they write from the points of view of different characters in the game (see Figure 3).

In the discussion comment section below the main page (Figure 4), Vladimir urged Finlay to write more. ‘Make more of urs as u try to find me’.

Thus they inspired and goaded each other to do *better* – the very opposite of their behaviour often in class. They also built up technical expertise among themselves without the support of the teacher, with Finlay telling the other boys during one of the focus group interviews, ‘There is

The screenshot shows a wiki page titled "The story of an undead prince". The page content is as follows:

```

year45678901011121314151617181910212223242526272829

The story of an undead prince
Edit 0 5 ...

... you shall be doing Deadlox's point of view here is the beginning you have been called by me minecraft universe to help now the squids have tried to take over my home planet unville you meet sky along the way who has also been called you come just as you see mu junior come in. However when you see him come in there is an explosion which sends us flying down to minecraftia.

we separate to different corners of the earth you need to do your point of view your trying to find the undead god, your father.

Where am I this is not my home I have been transported to this weird place is that a cow of some sort and why is it red it looks like a game might have teleported me here so not cool at all. Why am I here anyway this place is cool but I got to get home now but how do I get there again? what is this red thing that is pouring I'll see if I can stand on it ow ow this is killing me ah what why is it saying deadlox tried to swim in lava. That hurt a lot so that was lava oh no this is blue and looks like lava save me.ls that sky and mu jr cool [ bang ].wow what was that bang where are sky and junior they just disappeared in the bang that is so frustrating.

Add Discussion
  
```

The sidebar on the right contains a navigation menu with the following items:

- Wiki Home
- Recent Changes
- Pages and Files +
- Members +
- Settings
- Search
- All Pages
- home
- A BUDDER prince
- A page on minecraft universe
- A Prince's Survival
- Birthday surprise
- Chat page
- micromon and pokemon
- pokemon
- starter page
- The story of an undead prince
- the story of the universesess king
- edit navigation

Figure 3. Start of collaborative Minecraft narrative.

The screenshot shows a comment section on a Minecraft wiki page. The first message is from 'ElderDoge' with the text 'More chapters'. The second message is from 'ElderDoge' with the text 'Imma do about 30 chapters? And more than 1 book. About...'. The third message is from 'ElderDoge' with the text 'AS MUCH AS I WANT'.

Figure 4. Vladimir's post in the comment section below the collaborative Minecraft narrative on the wiki.

a way to fix that' as they discussed layout issues. But this was more than a community of practice because it was about their socio-material imbrication with the technology both individually and collectively. The material agency of the software was important, allowing them to see and comment on each other's work as well as building texts together. The next section will look at how a pedagogy which opened up a less adversarial space between teacher and pupil also helped them expand their possibilities for action and views of what constitutes a learner.

4.2. Agency through appropriating the self – foregrounding the discursive

For Merleau-Ponty (2004, 61), our embodied interactions with the world resemble our experience with honey as we find ourselves 'embroiled in a sticky external object', both appropriated by and appropriating the world all at once. The phenomenological account also allows us, through language and interpretation, to appropriate **ourselves** (Heidegger 1962; Mertel 2020), developing our 'singularities' (Coole 2005, 133) through our discursive reflexivity. In this section, we will look at the way in which the online space allowed pupils to style or appropriate themselves in new ways, thus tapping into agentic potentials and tendencies at a *personal* and *intersubjective* level.

4.2.1. Personal and intersubjective agentic tendencies in response to new intercorporeal arrangements

Reflexivity about the physical and discursive arrangements in the traditional classroom, the intercorporeality of the teacher-directed space, often leads pupils either to cast themselves as passive individual learners or, for those who don't want to take up that role, stage opposition. Gutiérrez, Rymes, and Larson (1995, 447) note how

those who do not comply with the teacher's rules for participation form their own *counterscript*. In this context, members of the classroom community hold varied expertise in the form of local knowledge, but the inscribed knowledge of the teacher and classroom regularly displaces the local and culturally varied knowledge of the students. This displacement of student knowledge creates the space for student counterscript to develop.

The digital space in this study (without a corporeal synchronous teacher presence) allowed the expression and normalization of the counterscript. For instance, Vladimir made his own wiki describing and advocating trolling. Because a space had been opened up for dialogue through a less hierarchical pedagogy, it was possible to pull him aside to discuss this 'counterscript' rather than using the public platform of the class to reprimand, as would be the case in the physical space of the classroom.

Thus both the new *intercorporeal* arrangements and the pedagogy in this space allowed discourses and agentic capacities to emerge which may remain hidden in class and, through

Hope Ya Liked It
ElderDoge Jan 24, 2016

If you don't understand any words/things then just write them down here and I will tell you.

Figure 5. Vladimir's teacher-like script on the wiki.

negotiation, could transform them from something antagonistic to something more aligned with the norms and values of the classroom. In this negotiated space, children also saw the possibility of being the ones to deliver the *script* rather than the *counterscript*. For example, one child wrote in the comment section on the bottom of another's creative writing page: 'I like the language you used. I know the teacher normally says that but it's true'. This acknowledgement that sounding like the teacher could be perceived as 'lame' soon gave way to children delivering teacher-like scripts without batting an eyelid. Vladimir felt confident about suggesting that people ask him for help if stuck (see Figure 5).

Those who took up new roles as active learners did it because of their own reflection about the desirability of new roles both in the microcosm of the classroom and further afield. Here pupil reflexivity was more discursive than corporeal. When we are presented with new roles and the opportunity to take them on, we will ask ourselves, 'how much of myself am I prepared to invest in it?' (Archer 2000, 293). Pupils said to themselves and me: 'It's worth putting the effort in because it will affect how my peers think of me'. Or, 'It's worth taking up these roles because they will make me more like those I admire who have ownership and control'. As Finlay noted, working on the wiki made him more like the Youtubers he admired, shifting from being a passive consumer of content to actively creating it and hence have greater opportunities for action, owning and controlling the story: 'When we are writing this, we can imagine we are them and we can do what we think they would do, what they should do in this situation'.

The digital space of the wiki, both because of the technology and the pedagogical approach, allowed for the emergence of agentic capacities, both *personal* and *intersubjective*, because of a new choice of roles: from learner for whom chatting with friends is encouraged, to writer for whom *intermezzo*, or being in the middle of something, (Deleuze and Guattari 1987) is valued as much as polished performance, to someone who may have something to teach adults and peers. As children adopted new roles, their concerns became more aligned with those of the teacher. This generative scenario emerged both from teacher reflexivity about the material agency (or affordances) of the software and from pupil reflexivity in finding new ways to appropriate or style the self in response to the pedagogical arrangements.

4.2.2. Reflexivity about the transpersonal – the role of parents

If those pupils who developed as learners and writers in response to the wiki did so because of their corporeal and discursive reflexive response to the material agency of the software and hardware, what also became clear was the importance of the reflexivity of their parents. In cases of highly extensible literacy practices (such as those of Vladimir and Finlay which extended across time and space) the unboundedness of the wiki allowed offline relationships to be taken up online in a way which was linked to learning. Children moved between their online play on Minecraft to offline discussions about this at the playground in school, back online to the wiki where the narrative was composed collaboratively back to an offline discussion with parents where they were monitored and encouraged and to offline discussions with the teacher who praised and took notice.

For these parents, the material elements of the wiki, namely its affordance of making texts visible across time and space, provided them with an insight into what was going on at school, what was required in this project and what other children were capable of producing. This allowed them to spot opportunities to use their own experiences of literacy to support their children. Both Finlay

and Vladimir's mothers reflected on the uniqueness of this space to enhance communication. Vladimir's mother was delighted that it gave her child a place where he could 'apply himself, express himself in a way that he couldn't in offline spaces. For Finlay's mother, the space was important because it allowed communication and collaboration out of school hours:

The whole collaboration idea in their spare time, when they are all sitting at home at the end of the day ... is completely different from anything I have ever seen before. ... I think it was the first time he saw a purpose for the internet rather than playing games. It was a way of engaging, putting information over for his friends to be able to contribute with, using a medium he intuitively understands.

Finlay also invited his mum to comment on his written work for the first time ever. She was full of praise for what he had achieved but did not miss the chance to help him improve his work: 'Me being me helped him to punctuate it!'

However, to see literacy as emerging most effectively from encouraging play requires a reflexivity about one's child and the digital world that relies on something both hermeneutical and political – an understanding of the *transpersonal* (as Coole terms the structural), its potential generativity and the opportunity to change one's place in it. For Coole (2005, 135), 'the phenomenology of political agents has the same internal logic as that of agency per se – that is, they emerge as provisional concentrations of agentic capacities ... depending upon their context'. The wiki provided a space where Vladimir and Finlay could be autonomous and display competence. The material agency of the wiki allowed them to showcase their talents proudly and invite praise and commentary from their mothers. These mothers kept an eye on their sons' games playing and computer use and intervened and encouraged them to support their literacy development, allowing their children's sense of fun and enjoyment to flourish while also managing to introduce mentoring moments. This allowed the emergence of something dynamic and transformative: the imbrication of the social and the material and the reflexivity of the parents about the function of technology in their children's lives led to a positive feedback loop which was transferable across space and time back into the classroom.

5. Discussion

This study of pupils' online literacy practices has drawn attention to the way in which our embroilment with the world involves more than the focus on the corporeal, the *pre-personal*, foregrounded in affect theory based on the work of Massumi (2002). Wetherell (2012) argues that the focus on unpredictability in recent theorizing fails to acknowledge that affect can involve stabilized practices as well as upheavals. The findings in this study point to a way of bringing back the 'human' with a notion of subjectivities as she conceives them 'with a relational capacity, and tendencies towards figuring and gathering. These gain their textures, shapes, potentialities, repetitions, creativities and find their limits in relation to animate and inanimate others' (Wetherell 2012, 139).

Coole's (2005) spectrum of agentic capacities takes forward Archer's (2000) theory of agency by reinstating the intersubjective world. In this final section, the heuristic of the circuit of agency (see Figure 1) is developed as a way to extend this spectrum and incorporate our imbrication with material agency which, as Bennett (2010) notes, is absent from Coole's account, in line with what was observed in this study. The circuit of sociomaterial agency lets us visualize *pre-personal* (*corporeal*), *intercorporeal*, *personal* and *intersubjective* tendencies emerging simultaneously and recursively rather than being nested or layered (as they are in Archer's account). It seeks to avoid privileging any of these agentic capacities by acknowledging that they all act in concert as we intra-act with the agentic potentials of the natural and artifactual. It is inspired by Du Gay et al.'s (1997) famous 'circuit of culture' which was devised as a pedagogical tool during the 'cultural turn'. With this lineage, it is also an extension of Wetherell's (2012) sense that there is room for reconciliation between the discursive focus of that era and the current material, sociomaterial and affective turns. While the circuit of culture was devised as a framework for 'Doing Cultural Studies' of a cultural text or artefact, perhaps the circuit of agency could be seen as a useful

framework for ‘Doing Sociomaterial Studies’. Using the concept of the circuit of agency to characterize our affective practices in the classroom allows us to retain some of the ideas of fluidity and flow that have dominated recent accounts of sociomaterial relationality while bringing back ‘human’ agentic tendencies, those of the child, parent and teacher, but always contingently or provisionally.

So how could the idea of a circuit of agency support us with examining and developing digital media pedagogy? The answer is that it gives us four nodes through which to frame our analysis of learners’ use of spaces and artefacts (including digital ones). The circuit of agency allows us to see students as endowed with agentic tendencies which emerge constantly as they are immersed in a sociomaterial affective process of appropriation and self-appropriation. We can look at the material agency of digital media and examine pupils’ and our own agentive responses in four different but interconnected ways, the *pre-personal (corporeal)* and *intercorporeal* (which sociomaterial and affect theory in the ANT/post-ANT and assemblage theory traditions have focused on) but also the *personal* and *intersubjective*. In this way, we can both bring human agency back into the frame and continue to eschew deterministic and celebratory accounts of ed tech. As Mertel (2020) points out, the idea of mutual appropriation is key: if we are seen to appropriate the world without being appropriated, the account will be too anthropocentric. If we are appropriated without appropriating, the account will veer towards determinism.

6. Conclusion

The pendulum swing away from discursivity has neglected the role of language in differentiating us from objects and contributing to our development as reflexive beings. Yet this study brought out the importance of both visceral and discursive reflexivity in ‘switching on’ agentic potentials. Those pupils who most successfully developed as writers, extending affective practices across spaces were those who had both a positive somatic experience and discursive reflexivity about the opportunities on offer. In addition, they had parents who were also reflexive about the material agency of the software. These cases show that interpretations of and response to the technology by the human actors are key determinants in the outcomes.

This paper has sought to bring back the human actors on to the sociomaterial stage. The stress is still on contingency and provisionality just as it is in sociomaterial accounts which use assemblage theory. As Coole (2005, 124) notes, theorizing agency from a phenomenological perspective is only ‘contingently, not ontologically’ tied to humans as it always depends on our reflective entanglement with the world. However our capacity for language forms part of that reflective relationship. Heidegger’s notion of our mutual appropriation with the world includes a hermeneutical, interpretative and reflexive dimension that allows us as teachers to identify potentials for learner voice and agency to emerge. As Mertel (2020, 471) notes, appropriation is ‘associated with fulfilment, application or accomplishment: to successfully appropriate is to instantiate a possibility so that the appropriator and the appropriated are brought into their own’. This account thus allows us to imagine a digital media pedagogy in which we coax out agentive tendencies of both the human and the material through not only understanding the potential of the technology but also recognizing and acting on children’s corporeal reflexivity as they interact with it while encouraging in them a reflexivity about that interaction which is discursive.

If transformation relies on reflexivity, it may be necessary to scaffold and provide opportunities for reflexivity in and about online and offline spaces for some children. Could reflexivity be part of a teacher’s toolkit with teachers being taught how to recognize and scaffold it as part of their pedagogy? Reflexivity is not just about responding to the here and now but also about one’s place in society. If we want to open up spaces where real dialogue, might be possible, we need a ‘dialogic’ rather than ‘monologic’ (teacher script) pedagogy. But opening up a space for dialogue alone may not be enough. As Gutiérrez, Rymes, and Larson (1995, 453) pointed out, ‘dialogic pedagogy can only be transformative if dialogue means **more than** [my emphasis] “giving students voice”. It

may involve helping students ‘to develop … new understandings about themselves and their relations to the immediate and the larger social world’ (Gutiérrez 2008, 149) in order to reach their full potential.

Social theory makes much of the weaving metaphor. But if we foreground non-human material agency without paying sufficient attention to the asymmetry and range of human agentic capacities, are we in danger of weaving the Emperor’s New Clothes? For it is the weft of our continuous feelings, desires, reactions and reflections as we interact with the material world and each other that produces life’s rich tapestry. This paper has suggested that seeing agency as a circuit of human tendencies or potentials in constant intra-action with material agency may allow us to pinpoint seams of transformation and sew these into our pedagogy.

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