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ARTICLE

Breastmilk as Agentic Matter and the Distributed Agencies of Infant Feeding

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Introduction

Early motherhood is a relational practice that is achieved through engagements with human and non-human others.[1] Toward understanding these engagements better, this paper brings together concerns with: embodiment, materiality and maternal practice to consider the role of breastmilk and other intra-corporeal matter within breastfeeding assemblages. By making a cut through these concerns I seek to challenge commonly-held understandings about the amount of control mothers have over infant-feeding and breastfeeding by highlighting the role of bio-matter within mothers' bodies in practices of infant feeding. I suggest that we can extend our understanding of breastfeeding by approaching the breastfeeding body as an event which is both dynamic and interacting (Grosz 1994, 209). Employing this conceptual approach, I consider the role of bio-matter within mothers' bodies in cases in which breastfeeding does not go to plan as a way to explore the politics of breastmilk as agentic matter.

I explore the idea of breastmilk as lively matter through engagements with post-humanist, new materialist and Deleuzo-Guattarian theory in order to produce a conceptualization of motherhood and infant feeding in which agency is distributed. Such a conceptualization allows us to give greater credence to the myriad ways the universe (after Karen Barad) 'acts back' against the things parents do in raising

[1] This paper is based on work appearing in: Boyer, K (2018) *Spaces and Politics of Motherhood*, London: Rowman and Littlefield International (in press). I would like to thank Annmarie Mol for her useful comments on an earlier draft of this paper given at the Emotional Geographies Conference in Groningen, Netherlands in 2013.

children, and specifically to recognise Hannah Stark's observation that 'the materiality of the body needs to be understood as a force that [...] shapes how we live in the world' (Stark 2017, 66). Through this exploration I extend existing conceptual understandings of breastfeeding, carework and the more-than-human, and respond to Lisa Baraitser's call to attend to mothers' experiences of their own materiality (Baraitser 2008, 150). In addition to these objectives, I also seek to offer a critique of discourses which responsibalise and/or blame mothers for their supposed bodily 'inadequacies' in relation to their ability or non-ability to breastfed (Hays 1998; Warner 2006).

This paper has two parts. I first situate this investigation in relation to the relevant secondary literature and then trace out my conceptual framework. I then move on to consider some of the forces that breastmilk and other kinds of bio-matter can exert within mothers' bodies which can hinder breastfeeding. I do this by exploring instances in which mothers' bodies do not 'go along' with their plans for infant feeding, drawing on a selection of mothers' experiences with mastitis and blocked-ducts drawn from the UK parenting website *mumsnet* and a selection of parenting blogs from the US.

I make three arguments herein. First I argue that bio-matter and intra-corporeal relations can play an important role in the events through which women come to understand themselves as mothers in the weeks and months post-birth. Second, I argue that considering breastmilk as agentic matter usefully extends existing understandings of the concept of natureculture within and beyond parenting studies by approaching this concept through the intimate scale of the body. And third, I suggest that considering breastmilk as agentic matter helps destabilise discourses which cast infant feeding as a question of (maternal) 'choice'. Most UK mothers report that they do not breastfeed as long as they would like (McAndrew et al. 2012). While successful breastfeeding can be hampered by lack of cultural and professional support as Bartlett (2003) and Smith et al (2012) have argued, it can also (as I argue here) be constrained by intra-corporeal forces within mothers' own bodies. Because the inability to breastfed amongst mothers who desire to do so has been linked to increased risk of post-natal depression (Borra et al. 2015), this work thus adds to scholarship that seeks to 'shift blame off mothers' by highlighting the complex interplay of forces required to breastfed successfully. In sum, in this paper I argue that breastfeeding

is an instance of distributed agency across human and non-human actors; thereby extending conceptual understanding of the role of the more-than-human (and breastmilk specifically) within parenting and infant feeding practices, and making a political intervention in how both motherhood and infant feeding are understood.

Secondary literature and conceptual background

Considering breastmilk as agentic matter extends existing scholarship along a number of lines. These include work on embodiment (Colls 2007; Nast and Pile 1998) and maternal bodies in particular (Longhurst 2008). It also builds on the growing body of scholarship on the spatial, affective and material practices involved in the formation of parental and maternal identities (Aitken 2000; Boyer Dowling 2000; Holloway 1998; Luzia 2010; Madge and O'Connor 2005; Pain et al. 2001; Rose 2004), and the concept of breastfeeding as an assemblage composed of human and non-human components (Newell 2013). It also extends work on how parenting practice is shaped in and through engagements with the non-human, such as second-hand baby things (Waight 2014; Waight and Boyer 2018), 'family' cars (Waitt and Harada 2016); and prams and built form (Boyer and Spinney 2016).

Through its focus on the politics of bio-matter though, this work perhaps builds most directly on scholarship on the fleshy and fluidic geographies of materials that transgress and destabilise the body boundary as with blood donation, stem cell preservation and placentas (Boyer 2010; Copeman 2009; Longhurst 2001; Colls and Fannin 2013; Fannin 2013; Hall 2000; Waldby and Mitchell, 2006). This scholarship has highlighted a number of important findings. The work of Colls and Fannin has shown how the placenta destabilises taken-for-granted understandings of the body-boundary, exploring how this (temporary) organ allows us to think about bodies, relations between interior and interior and self and other in new ways (Colls and Fannin 2013), responding to Hannah Stark's call to attend to the 'forces […] which both form and undermine subjectivity and which occur at scales both larger and smaller than the human' (Stark 2017, 109). It has shown how bio-matter is capable of undergoing cultural re-classification from a low-value substance to a high-value one, as has happened with stem cells (Fannin 2013). It has shown how blood donation

can serve as a site of cultural transformation (Copeman 2009); and that expressed breastmilk can function as a means of 'extending the boundaries of the self' (Davidson and Milligan 2004, 524 in Boyer 2010, 8). Yet while generating a range of useful insights into how breastmilk and other forms of bio-matter can be understood, this body of scholarship does not consider breastmilk – or other bodily effluvia – as agentic matter in its own right, or examine the politics of how such an interpretation might re-frame discourses around motherhood and infant feeding.

Toward putting this discussion in a broader context it is also worth noting that breastmilk is a highly politicised form of matter about which there are divergent views. Similar to other bodily substances that transgress the body boundary, breastmilk is sometimes vilified. Building on Mary Douglas' thesis that matter which escapes the body is coded as unclean, offensive and dangerous (Douglas 1966), Aimee Grant has shown the disgust over breastmilk in the context of breastfeeding in public that has been expressed in reader-comments in the UKs most-read online newspaper, the tabloid *The Mail Online* (Grant 2016). Along similar lines Longhurst (2001), Grosz (1994) and Bartlett (2005) have argued that breastmilk is additionally problematic within misogynist cultures as it represents women's biological productivity.

Yet while breastmilk is sometimes vilified as a target of disgust, breastfeeding is also an iconic form of giving comfort, succor and nourishment (Hausman 2003). Breastmilk is at the heart of powerful messages about the preferred form of infant feeding and raising breastfeeding rates has been identified as a key step in reducing health inequalities in the UK. Amongst health professionals and advocates for women's and child's health breastmilk is the undisputed best form of infant feeding in terms of health benefits for mothers and children (Rollins et al. 2016; Victora et al. 2016). Breastmilk has been shown to reduce the risk of diarrhoea, allergies and sudden infant death syndrome (cot death) when babies are small; as well as reducing chances of getting, leukaemia, lymphoma, diabetes and asthma as children grow older (Goldman 2000). Julie Smith avers that: 'human milk should be viewed as 'broad-spectrum medicine as well as nutrition' (Smith 2004: 271) while Jacqueline Wolf has noted that 'few activities in life have the potential to contribute as much to the health of women and children as breastfeeding' (Wolf 2006, 387).

Breastmilk can only be produced by a small portion of the population for a limited amount of time, and includes antibodies, enzymes and hormones such as oxytocin which scientists do not yet know how to replicate.[2] Breastmilk thus delivers not only nutritional but immunological, affective, and other health benefits to both mothers and children in both rich and poor countries (Goldman 2000; Scariati et al. 1997; Victora et al. 2016). It lowers the risk of ear, lower-respiratory tract, urinary tract, and other kinds of infections in babies while reducing the risk of breast cancer later in life for mothers (Gartner et al. 2005).[3] It reduces instances of vomiting and the chances of catching pneumonia.[4] Indeed it is estimated that if breastfeeding rates were to increase to near-universal levels worldwide it would prevent 823,000 deaths of children under five annually and a reduction of 20,000 deaths due to breast cancer (Victora et al. 2016). Breastmilk is thus recognised as the ideal food for babies by every major health organisation worldwide,[5] and this is even recognised by the infant formula industry (Boyer, 2010).[6]

Nevertheless, views on breastmilk itself vary widely. Toward understanding these diverging views it is useful to refer to the work of Walby and Mitchell in their book *Tissue economies: blood, organs and cell lines in late capitalism* (2006). Walby and Mitchell argue that understandings of bio-substances such as blood, stem cells and organs shift between 'waste', 'gift' and 'commodity', sometimes reflecting mixtures of all three. (They further argue that it is through bio-matter that has gained value

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[2] American Academy of Pediatrics website: https://www.healthychildren.org/English/ages-stages/baby/breastfeeding/Pages/Breastfeeding-Benefits-Your-Babys-Immune-System.aspx Accessed 10/3/2017.

[3] For more information see also the US Department of Health and Human Services http://www.womenshealth.gov/breastfeeding Accessed 4/03/2017.

[4] American Academy of Pediatrics website: https://www.healthychildren.org/English/ages-stages/baby/breastfeeding/Pages/Breastfeeding-Benefits-Your-Babys-Immune-System.aspx Accessed 10/3/2017.

[5] NHS recommendations echo UNICEF and WHO guidelines which recommend that breastmilk should be the only food infants receive for the first six months of life. http://www.nhs.uk/Conditions/pregnancy-and-baby/Pages/why-breastfeed.aspx#close, Accessed 20/6/2014. See also: World Health Organization (2003) *Global strategy for infant and young child feeding* Geneva, Switzerland: World Health Organization, UNICEF ISBN 92-4-156221-8.

[6] Although formula companies also habitually undermine this message in their advertising and marketing.

within fields of disease treatment and experimentation that the framing of 'commodity' is most pronounced). Given breastmilk's disease-fighting properties, together with its imbrication within both systems of donation and bio-industry,[7] I suggest that Walby and Mitchell's analysis provides a useful framework to understand the varying and shiftable ways breastmilk is currently viewed throughout many parts of the industrialised West. At the same time I suggest my argument herein extends Walby and Mitchell's analysis by opening a space in which to consider bio-matter itself as an actor within the networks in which it circulates. Having outlined how this paper advances existing scholarship on breastmilk, I will now trace out my conceptual framework.

This paper will draw on scholarship from the new materialist as a way to highlight the role of material agency within maternal practice. After Deleuze I conceptualise the body as a series of ongoing events, and am guided by the question 'what can a body do?', rather than 'what it means?' (Braidotti 2002, 8; Bray and Colebrook 1998, 36; Deleuze and Guattari 2004). Within Deleuzian philosophy, 'bodies' do not necessarily refer (only) to human bodies, but rather to beings or entities coming together to achieve something. Such bodies are always constituted through the relations they form with others (Stark 2017, 71). This can mean human bodies in their interactions with one another and with the non-human, but it can also refer to machines. In this analysis it so happens that actual human bodies *are* the locus of analysis, but with a focus on intra-corporeal interactions and processes.

New materialist social theory seeks to analyse the politics of materiality and material agency together with the ways matter and systems of representation relate to one another (Alaimo and Hekman 2008; Braidotti 2002; Barad 2008; Colebrook 2008; Coole and Frost 2010). This body of work has come out of a wide-ranging multidisciplinary engagement across the humanities, social sciences and physical sciences to explore the politics of more-than-human agency and the effects of such agency on traditional understandings of humanism. New materialist philosophy seeks to

[7] For an example of an industry which uses human milk see Prolacta Bioscience at http://prolacta.uk.

deconstruct conceptual boundaries between subjects and objects, and between bodies and matter by attending to what Karan Barad calls 'agential intra-action' (Barad 2002, 132). This concept is the idea that entities make one another through their relations with each other: in other words, entities are not ontologically prior but rather are in a state of constant (co) becoming through their myriad relations with other entities.

Combining a Deleuzian approach to the body with a recognition of the role of the more-than-human in constituting (and destabilising the primacy of) human subjects, Bray and Colebrook suggest approaching the body as 'a negotiation with images, pleasures, pains, other bodies, space, visibility and medical practice' (Bray and Colebrook 1998, 43). In this way they highlight the ways bodies are both dynamic and constituted in relation to 'things' commonly thought of as either within or beyond them. In a related vein Rosi Braidotti suggests conceptualising the body as a 'field of intersecting material and symbolic forces' (Braidotti 2002, 25). Drawing on these frameworks, this analysis seeks to extend understandings of mothering and maternal subjects through a consideration of 'what breastmilk does', endeavouring, after Coole and Frost, to '(take) seriously the material intricacies of existence' (Coole and Frost 2010, 32).

The new materialist has been taken up by scholars across a range of fields both as a means of theorising more-than-human agency in the context of the anthropocene, as well as a way to destabilise natureculture binaries (Anderson and Perrin 2015; Castree and Nash 2006; Kirsch 2013; Tolia-Kelly 2013; Whatmore 2013). As Anderson and Perrin note, this turn has taken place in the context of a broader concern with post-humanism, i.e. the

> widespread, and now increasingly 'materialist' concern within the humanities (and social sciences) to move beyond the legacy of a narrow, humanist conception of culture as something separate from, and elevated above, the natural world. Countering the idea that humans occupy a separate and privileged place among other beings' (Anderson and Perrin 2015,1).

Put another way, as Castree and Nash note, the ways we now recognise human-nature inter-dependence have 'disturb(ed) an idealized definition of the human subject as separate and liberated from nature and fully in command of self and non-human others' (Castree and Nash 2006, 501). This turn has led to the emergence of the concept of 'natureculture' as a means of recognising both more-than-human agency and the lack of ontological distinction between the two concepts.

Some of the ways that agentic matter and more-than-human agency have been conceptualised to date (beyond those related to parenting practice noted earlier) include the way the environment acts back (Whatmore 2013); animals (Whatmore 2006); embodiment (Colls 2007); food and eating (Anderson 2014); and urban form (Latham and McCormack 2004; Simpson 2013). Tolia-Kelly has flagged up the importance of interrogating the political implications of our intra-actions with the more-than-human (Tolia-Kelly 2013), while Kirsch warns against making assumptions about which sort of more-than-human matter will play a key role in a given event (Kirsch 2013).

This paper furthers our understanding of what Braun has called our emerging 'modalities of posthumanism' (Braun 2004) by extending scholarship on the body and intra-corporeal matter as an important prism through which to explore the concept of natureculture. Building on Rachael Colls' exploration of body fat as agentic matter, I consider breastmilk as a means to advance understanding about the 'dynamism of bodily matter' (Colls 2007, 504). In the rest of this paper I analyse how breastmilk relates to the socially situated bodies in which it is made by examining the flows and blockages of breastmilk. In turn I explore the capacity of breastmilk itself as an agentic force within breastfeeding assemblages, and some of the kinds of intra-actions that occur between breastmilk and the lactating women in whose bodies it is produced. I explore the relationship between the desires of mothering subjects and those of the bio-material systems that produce breastmilk by exploring cases in which different 'parts' of maternal bodies essentially act against one other in cases of blocked ducts and mastitis. As such this paper directly responds to Colls and Fannin's call to consider the body as relational space (Colls and Fannin 2013).

Agentic breastmilk

Having outlined how this work builds on existing scholarship and traced out my conceptual framework, I will now explore 'what breastmilk does'. First, I will briefly outline the process by which breastmilk is produced and (normally) leaves the body once produced; and then turn to consider cases in which this event is interrupted. Taken together: breastmilk; hormones; muscles; nerves; other bio-matter within the mother's body; 'the (agentic) mother herself' and a nursing baby, babies, or young child constitutes an excellent example of agental intra-action between a range of bio-materially entangled and mutually-affecting phenomena. The process by which milk is produced in the body (lactogenesis) consists of several stages, beginning during pregnancy when mammary glands begin to release colostrum in preparation for breastfeeding (Edgar and Sebring 2005). After the placenta is delivered during birth, levels of progesterone (which inhibit the production of milk during pregnancy) drop suddenly, and at this point milk normally begins to be produced in the alveoli (tiny sacs in the breasts) (Edgar and Sebring 2005). In established breastfeeding (after the first few days) a baby's sucking stimulates nerves in the breast which signal the hypothalamus to release prolactin and oxcytocin from the pituitary gland. The release of oxcytocin causes the muscles surrounding the alveoli to contract, forcing milk from the alveoli through the milk ducts and out the nipple (this process is called the let-down reflex) (Edgar and Sebring 2005).[8]

In addition to these processes taking place inside the body breastmilk also intra-acts with forces outside the body in a number of ways. Not only is the let-down reflex activated in response to stimuli outside the body from the baby, but breastmilk also changes composition based on the health of the mother, for example delivering antibodies to the baby for any colds the mother catches.[9] Breastmilk carries with it the flavours of food the mother eats (Mennella and Beauchamp 1991); changes

[8] See also: http://www.kidsloverscenter.com/2015/10/31/how-to-increase-breast-milk-supply-at-home/ Accessed 3/3/2016.

[9] American Academy of Pediatrics website: https://www.healthychildren.org/English/ages-stages/baby/breastfeeding/Pages/Breastfeeding-Benefits-Your-Babys-Immune-System.aspx Accessed 10/3/2017.

composition based on local atmospheric conditions,[10] time of day and age of the baby; and delivers a different nutrient mix as babies age in response to what is needed at a given developmental stage (Brown, forthcoming; Prentice et al. 1981; Tomori, forthcoming). Breastmilk carries bio-markers of the woman producing it, and in turn its departure from the body (whether through breastfeeding or expressing) delivers a modicum of protection against breast cancer and osteoporosis for the woman in whose body it was produced. Breastfeeding can even shape the mood of mothers and babies as breastmilk contains oxcytocin, the hormone which produces feelings of trust and wellbeing (Lane et al. 2013; Ishak 2011).

Thinking more expansively, breastmilk also relates to public health campaigns which raise awareness about the benefits of breastfeeding, media representations and public discussion relating to breastfeeding, as well as artefacts/non-human actors such as nipple guards; nipple cream (in the case of cracked nipples); breast pads; nursing bras and breast pumps. It relates to bodily knowledge which mothers who seek to breastfed must acquire about how to put the baby to the breast so they will be able to successfully feed (latching-on); as well as to the health professionals, lactation consultants, friends, online videos, blogs, books or magazines which are used to gain this knowledge. Breastmilk can even be seen to relate to friends and family members of the breastfeeding mother in terms of how well (or poorly) they support her in her efforts to breastfed as long as she wants to; together with social mores about breastfeeding which may affect how comfortable mothers feel breastfeeding in different locales, or breastfeeding an older baby or young child.

In all of these respects breastfeeding (and maternal practice more generally) can be understood as an event or assemblage, involving multiple human actors and non-human actants. Breastfeeding draws together the bio-material; the symbolic; the cognitive (in terms of information about breastfeedings' benefits); the emotional and the bio-mechanical (both in terms of embodied learning on the part of the lactating mother about the logistics of latching-on; as well as the intra-corporeal

[10] For example breastmilk has lower fat content in summer months in order to deliver more hydration.

events required to breastfed). Breastfeeding is also an excellent example of the Deleuzian body marked by relationality in that breastfeeding assemblages are composed of corporeal, affective and material relations not only between mothers and babies and babies and breastmilk; but also between mothers and their milk in terms of changing milk composition in response to the mother's physical health, and between breastmilk, mothers and broader socio-technical, material-discursive and affective environments. In all these ways breastfeeding assemblages challenge binarised understandings of 'nature' and 'culture', showing how these elements are in no way distinguishable or mutually exclusive.

Within these assemblages I suggest that breastmilk functions as active, lively matter. I suggest that it can be seen to possess what Jane Bennett terms 'self-directing activeness' (Bennett 2010, 90) in that, barring complications, it 'wants' to leave the body: seeking to fulfil an objective outside the body in which it has been made and inside the body of another. Yet despite breastmilk's desire (if you will) to leave the body, it is not always able to. In cases where breastmilk is *not* able to traverse the body boundary, it can result in physical pain in the form of blocked ducts, in which milk effectively 'gets stuck' in the milk ducts causing engorgement and mastitis, which can be caused by milk seeping out from the ducts into the blood stream, causing infection. Let us now briefly turn to consider such cases as a means to 'see' breastmilks' agentic force.

Although for some breastfeeding can bring with it confidence and feelings of pride and accomplishment regarding what one's body can do (Dykes 2003), pain is also a feature of some mother's experiences of breastfeeding in the UK (and elsewhere). In fact pain is the third most common reason given amongst UK mothers who stop breastfeeding in the first few weeks post-birth (McAndrew et al. 2012, 106). And although most mothers in the UK stop breastfeeding within the first four weeks post birth, 60% of mothers who breastfed to 8 months or longer report experiencing breast or nipple pain at some point.[11] 26% of all UK mothers who breastfed at some point experience either blocked ducts or mastitis, bringing with it flu-like symptoms

[11] This rate is significantly below NHS guidelines.

that can include chills, fever, body-pain, nausea and fatigue in addition to breast-pain (McAndrew et al. 2012, 106).

As Williamson et al have shown (Williamson et al. 2012) problems with breast-feeding can come as a surprise to new mothers. While some mothers may begin to think about the practical aspects of breastfeeding before birth, many are so focused on getting through the birth itself that they do not spend significant amounts of time thinking about how they might respond to issues that might arise relating to infant feeding. As parenting blogger Meredith Band noted on her entry entitled 'Mastitis and Me' in the parenting blog *mommyish*:

> There are a lot of things to worry about when you're pregnant. Most of those in involve how the baby is going to leave your body. I didn't give a lot of thought to what would be going on with my body after giving birth.[12]

Some women are able to resolve physical problems related to breastfeeding by taking antibiotics (in the case of mastitis), or by learning different physical techniques to unblock ducts. NHS guidelines suggest using compresses, taking ibuprofen, massage and hot baths or showers and expressing milk regularly in order to alleviate the symptoms of engorged breasts and/or mastitis.[13]

We can gain further insight into mothers' experiences of mastitis from comments posted to the popular UK parenting website *mumsnet.*[14] As a review of anonymous posts on the non-password protected site between 2005 and 2018 (N:36)[15] together with selected parenting blogs reveals, some women also find techniques of 'combing' breasts with fingers or a wide-toothed comb along duct gland lines (to relieve blocked ducts) successful in alleviating breast pain. Mothers also 'act back' against breast pain by using microwavable flannel or cloth sacks filled with rice, or experiment with different

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[12] http://www.mommyish.com/2014/11/12/my-experience-with-mastitis/ Accessed 10/3/2017.

[13] http://www.nhs.uk/Conditions/Mastitis/Pages/Treatment.aspx Accessed 10/3/2017.

[14] To protect the privacy of posters I have removed post-dates, posters' names and obtained permission to reprint these posts from *mumsnet.*

[15] http://www.mumsnet.com/Talk/breast_and_bottle_feeding/73762-mastitis-experiences-please/AllOnOnePage, Accessed 11/03/2016.

feeding positions (including feeding lying down with the baby's legs up towards their shoulders positioning the baby's nose toward the sore area as a position that some found successful in relieving blocked ducts[16]).[17] These techniques are just some of the many forms of bodywork women must learn in order to manage their changing bodies through pregnancy and new motherhood, as Longhurst (2008) has noted.

However, as comments on the *mumsnet* bulletin board and other parenting blogs reveal, some mothers are not able to resolve pain related to breastfeeding in these ways. Some do not receive support (from lactation consultants, other health professionals or even knowledgeable friends) that might help them overcome physical barriers, and for others the physical pain itself is simply too overwhelming. Commentators describe mastitis as 'absolutely dreadful'. One contributor remarked that she felt like she had been 'set about with a baseball bat', while another observed simply: 'Oh my God, there's nothing like the pain of mastitis!'.[18] Similar sentiments are echoed in the American parenting blog *babycenter* in the comment: 'There was also a sudden onset of intense pain in the outer area/armpit area of my left breast. I didn't realise how bad it was until an hour later I was violently, uncontrollably shaking from the chills'.[19] Similarly, as American mum Tal Gooden noted in the *Huffington Post* of her experience with mastitis:

> I was terrified as I felt hard lumps in my right breast. The skin on my breast had red splotches and felt unusually warm to the touch. I could barely lift my arm or lie down without feeling excruciating pain. In addition to feeling sore, I also began to battle fatigue, fever, and nausea. I didn't know what was happening to me.[20]

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[16] http://www.mumsnet.com/Talk/breast_and_bottle_feeding/73762-mastitis-experiences-please/AllOnOnePage, Accessed 11/03/2016.

[17] https://blog.mothersboutique.com/experiences-of-mastitis/ Accesssed 10/3/2017.

[18] http://www.mumsnet.com/Talk/breast_and_bottle_feeding/73762-mastitis-experiences-please/AllOnOnePage, Accessed 11/03/2016.

[19] https://community.babycenter.com/post/a31797461/mastitis_experiences_at_6_weeks_pp_right_now Accessed 10/3/2017.

[20] http://www.huffingtonpost.com/tai-gooden/breastfeeding-woes-my-exp_b_5711979.html Accessed 12/3/2017.

Light-hearted quips notwithstanding, the general tenor of commentary on this *mumsnet* thread was summed up in the poignant observation that 'people underestimate how awful mastitis makes you feel'.[21] This sentiment is echoed in the broader parenting blogosphere, articulated by American mum Meredith Band in the blog *mommyish* of her experience with mastitis that 'trying to rub those knots out was, without a doubt, one of the most painful experiences of my life. It wasn't always easy to convince myself to do it while my body screamed 'Why are we doing this to us?!'[22] These comments resonate with Catherine Robinson's work on womens' experiences of pain during breastfeeding (and in turn feelings of loss and guilt) amongst mothers who want to breastfed but are unable, owing to the way breastfeeding is positioned as the ideal or aspirational feeding choice especially for middle-class mothers (Robinson 2016).[23]

Through these cases we can see how the process of lactogenesis, or the production of milk within the body, can lead to a range of different outcomes. It might lead to successful breastfeeding bringing comfort and satiation for baby and a sense of peace for the mother. Or it might lead to blocked ducts, engorgement or an infection bringing with it chills, fatigue and nausea and distress for the mother, as well as distress for the (hungry) baby. I suggest that through these cases we can see breastmilk as a form of matter which is dynamic with its own vital force, and which 'comes to matter' through its relations with other phenomena (such as milks ducts and the muscle that surrounds them, lactating mothers and their babies). In this way, through these cases we see breastmilk's liveliness, how it functions (after Colls) as a 'form of bodily matter that is not only impinged upon by outside forces but has its own capacities to act and be active' (Colls 2007, 358).

In turn, through the experiences of mastitis and blocked ducts considered here we are also able to see some of the ways bio-matter and intra-corporeal relations can shape the processes by which women come to understand themselves as mothers in the weeks and months post-birth (although not in a deterministic way). For some the

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[21] http://www.mumsnet.com/Talk/breast_and_bottle_feeding/73762-mastitis-experiences-please/AllOnOnePage, Accessed 11/03/2016.

[22] http://www.mommyish.com/2014/11/12/my-experience-with-mastitis/ Accessed 10/3/2017.

[23] Johnson's work also resonates with research showing a link between the incidence of post-natal depression and the inability to breastfed among mothers who want to (Borra et al. 2015).

experience of managing mastitis or blocked ducts leads to new forms of embodied knowledge, such as through learning the technique of breast-combing to break-up a block, or finding a new way to position one's baby to encourage milk to flow. For others however the physical pain of mastitis and/or blocked ducts may led to stopping breastfeeding and (for some) feelings of guilt or sadness about that eventuality, as Robinson has described (Robinson 2016).

Conclusion

In this paper I have put forward a conceptualisation of breastfeeding as an assemblage in which agency is diffused across different human and non-human actors. I have argued for an understanding of breastfeeding not only as a case of distributed agency, but a case of distributed *intra-corporeal* agency, thus responding to Colls and Fannin's provocation to consider the body as relational space. I have argued this through a consideration of cases of mastitis and blocked ducts as instances in which the different agential forces within breastfeeding assemblages are in conflict with one another. In such cases mothers' desire to breastfed is in tension with forces within her body which do not 'go along' with her wishes. As such this work challenges notions of the coherent enlightenment subject by showing how mothers' very bodies can be the site of multiple (sometimes conflicting) agencies. A given mother may want to breastfed, but her body may have (metaphorically speaking) other plans, showing how the body is, after Braidotti, 'an assemblage of forces' (Braidotti 2002, 104). In turn, a mother experiencing mastitis and/or blocked ducts may be able to resolve physical problems, or she may not. I therefore suggest that in addition to the ways in which womens' (would be) 'choice' to breastfed is constrained by social and cultural factors (such as lack of appropriate support and non-acceptance of breastfeeding in public) (Bartlett 2002; Smith et al. 2012), it can also be constrained by intra-corporeal forces within her own body.

Through this analysis I have sought to advance scholarship on embodiment, material agency, and human-non-human relations in experiences and practices of motherhood. I have considered some of the different kinds of body work and forms of embodied knowledge that emerge through bodily intra-actions for breastfeeding

women (such as breast combing and massage). Drawing on concepts from feminist and new materialist philosophy, I have argued that matter and events taking place within the body have an important role to play in processes by which mothers come to know themselves as such. I have advanced a consideration of breastmilk's agentic nature, and suggested a conceptualisation of breastfeeding as an achievement realised through ongoing negotiation with the non-human.

Through a focus on breastmilk inside the body I hope to have suggested that breastmilk and the women in whose bodies it is produced not only intra-act but literally co-make one another; with maternal health influencing the composition of breastmilk, and the production of breastmilk conferring health benefits – and sometimes pain – for the woman in whose body it is made. And following on from this, I suggest that attending to these kinds of bodily intra-actions helps advance our understanding of the concept of natureculture at the intimate scale of the body.

Finally, beyond these conceptual objectives I hope that a greater recognition of the myriad bodily forces and forms of agency involved in breastfeeding might also help mothers who find breastfeeding difficult or impossible. To return to mothers who stop breastfeeding sooner than they planned due to physical problems or pain, I hope that highlighting breastmilk's agentic nature might have a political dividend as a means to combat feelings of guilt or grief and help destabilise narratives which over-emphasise maternal choice in infant feeding decisions. And likewise, to governments which seek to raise their breastfeeding rates, I hope this analysis highlights one of the many dimensions in which mothers need more and better support in order to fulfil their own wishes regarding breastfeeding.

Competing Interests

The author has no competing interests to declare.

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