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Seeing the baby, doing family: commercial ultrasound as family practice?

ABSTRACT

Medical sociologists and anthropologists have studied the social significance of obstetric ultrasound for families but little is known about how women and families make use of commercially available ultrasound scans. This article draws on interviews with women who booked a scan with a commercial company in the UK. For some women, commercial ultrasound can be understood as a family practice. We investigate this theme by examining who accompanies women to commercial scan appointments, how scan images are shared and how sonograms are used as prompts to resemblance talk. We argue that commercial scans are more than an additional opportunity to acquire 'baby's first picture' and offer a flexible resource to do family, creating and affirming family relationships and rehearsing roles as parents, siblings and grandparents. Our findings confirm the importance of imagination in doing family and raise questions about the role of technology and commercial interests in shaping family practices.

Keywords

family; family practices; family display; pregnancy; ultrasound

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Introduction

Drawing on interviews with women before and after commercial scans, this article explores the experience of commercial ultrasound during pregnancy as an example of 'family practices' (Morgan, 2011a), of social actions that construct and affirm connections between family members. We draw on the work of Morgan (2011a, b), Finch (2007) and others to argue that commercial ultrasound services are an example of the ways in which technologies and services come into play and provide resources for 'doing family' in contemporary Britain. While the social significances of ultrasound examination and take-home sonograms have been broadly explored in the sociological and anthropological literatures, ultrasound has not so far been explored in relation to family practices and the associated concept of family display. We argue that these concepts help to make sense of

why women make use of commercial ultrasound services and what meaning the resulting images (and the uses to which they are put) might have beyond the scan room. We seek to extend the theorising of ultrasound in relation to family identities and meanings beyond the oft repeated claim that sonograms are 'baby's first picture' (Mitchell, 2001). Utilising the emphases within the family practices literature on active social processes and shared understanding in the making of family connections focuses attention anew on the agency of women and families in making use of this technology and extends Morgan's work to explore how family connections are affirmed and reconfigured before the birth of a new family member.

Routine and commercial ultrasound

Ultrasound has become a routine part of antenatal care in many parts of the world. In the UK, the National Health Service (NHS) provides routine ultrasound free at the point of access in line with clear guidance on how ultrasound should be used in low-risk pregnancy (NICE, 2008). All women are offered a scan around 12 weeks gestation, for dating the pregnancy, and with the option of Down's syndrome screening, and a mid-pregnancy scan at 18-21 weeks for anomaly screening. Uptake is very high (Redshaw and Heikkila, 2010, Coxon et al., 2012). Despite the formulation of clinical guidelines for use of ultrasound in pregnancy, Taylor has argued that ultrasound is a 'hybrid practice' (Taylor, 1998), in that its social meanings are accommodated within clinical practice to some extent. Taylor gives the example of the provision of an additional screen so that women can watch the scan, and the supply of take home images. The particular way in which ultrasound services operate in the UK, and how hybridity is operationalized, has relevance for the analysis below. Hospitals in the UK typically provide one or two take-home images on request and for a fee. Most have a policy of allowing only one additional person to attend the scan appointment, usually the woman's life partner or birth partner. The sex of the foetus is sometimes revealed at the mid-pregnancy scan on request but this is not given priority.

Feminists have argued that the routine use of ultrasound in maternity care is an exemplar of medicalisation (Oakley, 1984), as one of the tools by which normal pregnancy has become defined as a risky condition in need of technological monitoring (Lupton, 2012). It seems certain that women have internalised the medicalization of pregnancy to some extent (Rothman, 2014) and yet it is also clear that ultrasound has become a social landmark for women during pregnancy and is often anticipated with pleasure (Molander et al., 2010, Garcia et al., 2002). Scholars have pointed to the potential for tension between the social significance of ultrasound and its clinical aims, with each threatening to disrupt the other (Taylor, 1998) not least because ultrasound has the potential to

raise questions about the health of the pregnancy and the foetus, requiring women to make complex decisions based on probabilities and risk calculations (Williams et al., 2003, Mitchell, 2004).

Companies in the UK have offered ultrasound on a self-referred basis and for a fee since the late 1990s. The market has expanded rapidly since the 3/4D technology became available, with a large number of companies across the country now in operation. Some focus exclusively on what might be termed 'nondiagnostic' scans – thereby arguably changing the nature of the hybrid and privileging the social meaning of ultrasound – but others also offer scans with a clinical aim such as anomaly scans and nuchal translucency (NT) scans. Services offer a range of options including 2D and 3/4D ultrasound, still prints of the image, DVDs of moving 4D imagery and other 'souvenirs' such as key rings. There is rarely any limit on the number of people who can accompany the woman to her appointment. At the time of the study, commercial scans typically cost close to £100 and upwards, with discounts and gift vouchers sometimes available. Sidhu (cited by Watts, 2007) notes 'an overall sense of disapproval' amongst medical professionals in relation to commercial scans. Published critiques from professional groups have been characterised by attempts to redraw the lines between medical and social use of the technology and to de-legitimize the latter. They rely on an assumption that women misunderstand the true purpose of ultrasound in pregnancy and have yet to take into account how and why accessing commercial ultrasound might make sense to women and families within their social and cultural context (Roberts 2012a).

Ultrasound and the family

It has become a truism that a sonogram is baby's first picture. Lisa Mitchells' (2001) book of this name sought to make strange, problematise and explicate a cultural moment in which a 'grey-and-white blur' could be meaningful as an image of a new family member, to be shared, smiled at, and treasured. 'Seeing' the foetus on the screen, it is argued, makes the pregnancy 'real' for women - the foetus exists and is healthy - and perhaps especially for expectant-fathers who do not have the embodied experience of carrying the foetus (Draper, 2002b, Sandelowski, 1994, Mitchell, 2001). Beyond this, ultrasound has become a resource to begin to construct a social identity for the foetus – as a person, a gendered, characterful family member who bears the markers of family resemblance through behaviour or appearance (Mitchell, 2001, Roberts 2012b, Taylor, 2008). The role of foetal images in the public sphere in constructing foetal personhood has been much explored in the feminist literatures with particular reference to reproductive politics (Petchesky, 1987, Stabile, 1994, Berlant, 1994, Franklin, 1991, Palmer 2009). The wider familial implications for ultrasound have been less well explored although there are some indications in the literature that these may be significant. Kroløkke suggests that the scan room provides an arena in which expectant-parents, and

to a lesser extent grandparents and siblings, rehearse their new identities, often in a manner highly proscribed by convention (Kroløkke 2011). Duden (1993) and Han (2009) both briefly suggest that carrying, displaying and sharing sonograms may be a way of signalling one's new status as a mother and one's adequacy in that role. Although ultrasound has yet to be explored specifically in relation to the family practices literature, the existing literature suggests that family practices may be fundamental to the socio-cultural significance of ultrasound. Han sums this up when she argues that routine ultrasound has become 'a ritual practice of [American] kinship and family' (Han, 2009: 275).

Doing and displaying family

The term 'family practices' originates in the work of Morgan (Morgan, 1996, Morgan, 2011a, b) who proposed the term to conceptualise the flux and fluidity of family lives, recognising the importance of people's closest relationships while arguably avoiding the dangers of reification and normativity associated with 'the family'. The concept highlights the fluid nature of family relationships, emphasising that our understandings of our family might not conform to social norms and might change over time but are nonetheless significant and meaningful. The emphasis is on active processes, on social action, that is usually orientated to other family members (Cheal in Morgan, 2011b). We demonstrate to them, and to others, that they are part of our family, that our relationship with them is family-like, and in so doing create and reaffirm those connections. Family practices are 'social actors creatively constituting their own social world' (Finch, 2007: 66) although always within structuring conditions and discursive limitations. Building on the family practices literature, Finch suggests that family needs to be *seen to be done*, to be displayed (Finch, 2007). The meaning of social actions needs to be understood by others in order to effectively function as 'family practices'. They must make sense within the wider system of meanings that provides their context. Display allows family-like relationships to be recognised by others. They convey the message 'these are my family relationships and they work' (Finch, 2007: 77). Display can be verbal or visual, and often makes use of particular tools or artefacts such as photographs and other keepsakes (Finch, 2007).

The literature around family practices and family display has focused on those family relationships that have the most difficulty in being recognised as such yet all families engage in family practices. It is acknowledged that the need for display in particular varies in intensity at different times and in different circumstances. For example, lesbian couples having children may engage in display work as they negotiate new kin relationships for themselves and their children with their families of origin (Almack, 2008). Parents of stillborn babies may also feel a more intense need for family display because their identity as (bereaved) parents is not well recognised by those around them, especially

if they have no living children (Murphy and Thomas, 2013). In circumstances such as this, 'we need to explore those families and relationships which exist in our imaginations and memories, since these are just as real' (Smart, 2007: 3-4). This may equally apply to those not yet born.

If 'contemporary families are defined more by "doing" family things than by "being" a family' (Finch, 2007: 66) then in what way might an ultrasound examination be defined as a 'family thing'? What resources do ultrasound scans, and especially commercial ultrasound scans, provide for 'doing' and 'displaying' family? In asking these questions, what new light might be shed on theorising about the role of the prenatal within family practices and display work?

The study

Women making appointments with a commercial scan provider were invited to take part in a short pre-scan interview as well as a longer follow-up interview a few days after their scan. Two locations operated by a single company were selected for recruitment, both located in large cities with diverse populations in terms of ethnicity and socioeconomic status. Recruitment took place over a period of 11 months during 2012-13. A mix of weekday and weekend clinics was selected according to researcher availability. Recruitment continued until a diversity of women was recruited and data saturation reached. All clients booking pregnancy scans on recruitment days received the study information sheet via email from the scan company at the time of booking and were invited to arrive early for their appointment to discuss the study with the researcher and complete the interview. Every effort was made not to disrupt the working of the clinic or to delay appointment times and this meant that seven pre-scan interviews were completed immediately after the scan. Women who revealed that their pregnancy was considered high risk by their usual care providers were excluded from this study. Follow-up interviews took place a few days later at a location of the participants' choosing, usually their home. Eighty-eight clients received email invitations. Forty-eight participants were recruited giving a response rate of 55% for the pre-scan interviews. Of these, twenty-one participants completed the follow-up interview (response rate of 24%). All interviews were conducted by Julie Roberts and Alice Verran. All interviews were audio recorded with consent, and anonymised at transcription. The study was approved by Nottingham Research Ethics Committee 1.

Participants were between 8 and 37 weeks pregnant. Participants ranged in age from 18 years to 38 years, with an average of 28.5 years. Participants in the follow up interviews were slightly older (average 30.5 years). Most identified as white British (85%). Although the cost of commercial scans may be prohibitive to some, our participants were not all affluent and reported a full range of educational backgrounds and employment statuses. The most commonly booked scan was a two-dimensional scan for determining foetal sex (50%) followed by a four-dimensional scan (3D image,

rapidly updated to give an impression of movement) (31%). Among interviewees who were interviewed twice, the majority had booked a gender scan (38%) or a 4D scan (33%). The remaining participants had booked 2D scans to assess viability, foetal growth, to date the pregnancy or to determine foetal presentation. This was broadly reflective of the overall provision at these sites. The scan company provided 631 pregnancy scans at these two locations during the 11 months of the study. Of these, 47% were 2D scans to determine foetal sex and 21% were 4D scans. Participants are referred to in the text below by numbers, thus maintaining anonymity and demonstrating that illustrative examples are taken from across the sample.

Pre-scan interviews were brief but rich and focused on women's reasons for coming to the scan appointment. Post-scan interviews took place a few days later and were more detailed, lasting up to an hour, and explored women's experiences of pregnancy and antenatal care so far, their reasons for booking a commercial scan, their expectations and experiences of the scan, and what they had so far done with the take-home pictures and recordings.

Findings of the study in relation to the core research question 'why do women seek commercial ultrasound in pregnancy?' are reported elsewhere (Roberts, Griffiths, Verran and Ayre, forthcoming). During inductive thematic analysis of the whole dataset 'family' was identified as a theme worthy of further investigation. In this secondary analysis, interview excerpts coded as 'family' were then read alongside the family practices literature, each 'plugged into' the other (Jackson & Mezzei 2012). The pre- and post-scan interview data was interrogated for examples of 'doing' or 'displaying' family. The analysis is an exercise in 'thinking with theory' (Jackson & Mezzei 2012) in which both the phenomenon and the theoretical literature are interrogated together for new insights into both. We do not assume that the participants' stories are an accurate reflection of 'reality'. Rather we recognise that their stories are partial and shaped in the context of their telling. Nonetheless they reflect at least some of the ways in which participants make sense of the experience of commercial ultrasound scans.

Commercial ultrasound as family practice

A family occasion

Routine ultrasound scans have become experiences to be shared between expectant parents. Fathers-to-be in particular are expected to attend scan appointments and their attendance has become a sign of 'involved fathering' (Wall and Arnold, 2007). So too, with commercial scans, couples generally attend together. Although the woman's body is the object of visualisation, men's participation is also required to mark this as a family occasion.

‘He just held my hand and it was really really nice and he was smiling...’ (028)

This experience as a couple may be particularly important when earlier opportunities are perceived to have been missed:

‘Well it’s the first time he’s able to join me so that’s important for us’ (031)

‘I went for my 12 week scan and he couldn’t be there...I thought I’d bring him along and he can see it too’ (032)

These remarks suggest that, for women in a heterosexual relationship, there was a sense in which men’s absence from routine scans had to be explained and rectified if possible. A commercial scan, at a time and location of their choosing, offers an opportunity to make up for this missed experience and an opportunity to display a cohesive couple and an involved father

Companions are by no means limited to male partners and might also be any combination of mothers, sisters, children, nieces and nephews, expectant-grandparents and friends:

‘It’s just a nice sort of family occasion’ (027)

We just want to try and make it a bit more family orientated’ (002)

The routine practice of ultrasound within NHS antenatal care usually restricts family involvement to expectant-fathers or another birth partner and interviewees were aware of this. Hospital policy implies a fairly rigid definition of the dyadic family unit proper to pregnancy. However, the restriction on companions also helps to code routine scans as medical in focus. It is, we would argue, a means to define routine scans as diagnostic against the encroachment of, and tension with, the social significances of ultrasound. Commercial scans allow women and couples to share the scan with as many people as they choose: ‘everyone wanted to come, so I let them come’ (035).

The scan can take on the feel of a family outing, to be anticipated and enjoyed:

‘My niece didn’t even know where she was going until the morning when we got there. I told her we were going on a little day trip’ (010)

‘We make a day of it, don’t we? Go for lunch, see the baby and... ’ (015)

Stories of this particular day may be laid down in family history:

‘I remember saying to my daughter, “he’s waving at you”, and her little face just lit up and I thought...I don’t think I’ll ever forget that’ (047)

The significance of who attends scan appointments has so far received little critical or sociological attention. We suggest that bringing an extended group of friends and family members to the scan may be a way of 'doing' family, of constituting and displaying a family group of those closest to you and who you hope will be close to the new baby. Women talked about this in terms of 'involving' others with a vested interest in the pregnancy and it signals to others that their involvement in the pregnancy is welcome. For one participant, inviting her sister to her scan was a means of mending their relationship and of showing her sister (and herself) that the relationship was healing:

Me and my sister have always had quite a difficult relationship and I think we're now both at that stage where we're a bit older and a bit wiser and we've just really got the relationship back to how it used to be, you know, how close we were. So that [the scan] was like bonding for us as well, with me and my sister. (047)

Since commercial scan services do not restrict who can attend appointments, this opens up the possibility of utilising the scan as a way of doing and displaying family. It provides new flexibility in how invitations to observe the ultrasound examination might signify kin connections. Of course it could also open up women's bodies to unwelcome scrutiny. We found no evidence of this in our study, but without restrictions on who can accompany, women might feel pressure to allow family members to attend whom they would rather exclude. For one participant, taking scan footage home was a way of involving her children without bringing them into the private space of the scan:

I didn't want my children there on Saturday just in case there was anything highlighted. But it was nice that we could bring away the DVD and we can show them so they were involved in that way. (008)

For this mother, the possibility that ultrasound examination could reveal health problems with the pregnancy is present in her thinking. She wants to protect her children from what could, potentially, be a difficult experience, particularly to protect them from her own emotional reaction to bad news, but the take home images, which commercial companies put more emphasis on providing than NHS scans, provides a way of demonstrating to her children that they are involved in this family occasion. We consider sharing ultrasound images in more detail below.

Sharing sonograms

Compared to routine scan provision, commercial ultrasound is available at more time points in pregnancy, produces more images, and different types of images including 3D and moving 4D imagery. When women chose to buy these additional scans, they create more opportunities to share

the resultant images. When we asked our interviewees whether they had shown their take home images with anyone, almost everyone had shared them. Some gave the impression that sharing the images was almost indiscriminate:

‘Well I’ve showed them to everybody and now they are on my fridge’ (022)

‘I’ve got them in my handbag because I’ve been showing everyone’ (045)

Sharing the pictures in this way was a way of displaying their pregnancy, and their impending motherhood. It might also have been a way of displaying their consumption of ultrasound technology. It has been argued that consuming all available technologies during pregnancy is a sign of responsible mothering (Rothman, 2014) and that ultrasound use specifically may be a sign of ‘good’ and even ‘modern’ parenting (Mitchell and Georges, 1997).

Other participants were more selective about who they shared the images with. While selectively sharing pictures might serve similar functions of displaying pregnancy and (future) motherhood, choosing who was shown the ultrasound images constructed and affirmed how the family was defined and bounded:

‘I showed mum and dad and I showed my brother as well but I think it’s one of those things, I’m sure I kinda went., “oh” over someone’s picture before and thinking, oh it doesn’t really look like anything...we showed them to [parents in law] as well, but no, no one else. I don’t think I’d inflict that on anyone [laughs]’ (007)

The legibility of the image plays an intriguing role in constructing these relationships. In this example, the fact that the images are shared with someone, *despite* being illegible, is precisely what marks the audience as ‘family’. Showing incomprehensible pictures is something to be ‘inflicted’ only on those close to you.

A number of scholars have questioned how black-and-white, cloud-like pictures can function so effectively as baby pictures, and as images of personhood (Mitchell, 2001, Duden, 1993). Despite recent claims for the ever-increasing clarity and realism of ultrasound imagery, difficulties remain for the untrained eye. While technological advances and cultural familiarity with the iconic foetal image have arguably resulted in greater clarity, images nonetheless vary in legibility and if the latest 3/4D images are less cloud-like, they nonetheless remain semiotic objects that require interpretation to be meaningful (Roberts 2012a). A minority of participants expressed the view that 3D images could look ‘weird’ rather than cute and pleasing (Roberts, Griffiths, Verran and Ayre, forthcoming).

Therefore it seems clear that the meaning of sharing ultrasound images almost certainly lies outside the content of the images themselves, in the act of sharing as a form of doing family.

Sharing the pictures might be a one-off event, a prop to announce the pregnancy or the newly identified sex of the baby, or it may be a shared viewing experience to be repeated and used as a prompt to ongoing dialogue about the new family member:

‘the children, they’ve watched it [DVD] several times and it’s actually programmed into the telly....When they were first told it was a girl they were disappointed....not overly disappointed just like ‘oh I wanted a brother’. But when they saw the DVD they were just astounded, they loved it...now it’s their baby sister and we’re going to rule the house...and they talk about the DVD on a daily basis...I know we are going to be watching it again and again. (008)

For this mother, the DVD of moving 4D ultrasound imagery is a conduit to discussion with her children about the new baby, about having a new sister, about the new configuration of the household (four ‘girls’ and an ‘outnumbered’ father). The new family begins to come into existence, even before the baby is born, with the new sister having a virtual presence, programmed into the television. This visualised presence is seen as being more concrete, easier for the children to understand. It is also a means of overcoming the children’s ambivalence the baby’s gender, perhaps through rehearsing their relationship with the new baby. Before the DVD ‘they see mummy is just getting fatter really’ (008).

Sonograms are not only shown to other people but sometimes copies are provided for the other people to keep, look at, and display. Parent and parents-in-law are sometimes given to choice of images to keep, suggesting a comparison with photographs of a newborn or school portraits of an older child. Family members on both sides of the family need to be treated equally in the distribution of pictures:

‘We got quite a few pictures printed off so we could leave a picture with both sets of in-laws, and then we’ve got a picture for ourselves’ (041)

Remarks like this one suggest a sense of familial obligation, or at least a sense that gifting copies holds significance as a marker of connection and intimacy, and that it needs to be done equitably. This notion contains within it an assumption that sharing sonograms and providing copies will be understood by parents-in-law as a family practice, as a signifier of kin connection, and therefore that offence might be caused if each side is not treated similarly.

Although we only interviewed expectant-mothers, the data provides glimpses into the fate of ultrasound images after they are gifted to others:

‘Mum’s mega excited...she keeps the pictures on her bedside table and takes them to work with her’ (012)

Here, the sonogram becomes the signifier of a grandchild and is proudly displayed and carried by an expectant-grandmother as an outward sign of her changing and growing family. The picture by the bed plays a role in her own display work as she takes on a new family identity (as grandmother) in addition to her existing ones.

Talking about resemblance

Sharing ultrasound images can be a prompt to talking about family resemblances. Mitchell, describing how expectant-parents claimed to see family resemblances in 2D black-and-white sonograms, characterised this as one of the ways in which families begin the process of ‘weaving the fetus into a network of kinship relations and conventionalized roles’ (Mitchell, 2001: 134). Three-dimensional, surface-rendered ultrasound provides different kinds of foetal portraits and new resources for talking about resemblance. Facial features are visible in new detail. Commercial ultrasound offers the means to access this new technology for parents and families and for some participants seeing what the baby looks like is a motivation for booking the scan (Roberts, Griffiths, Verran and Ayre). Some of the women who participated in our study were struck by the detail with which they could see the facial features of the foetus in the womb:

‘I know what she’s going to look like now because you could see her nose, you could see her chin, her eyes, you could see everything. It was just like looking at you’ (010)

Family resemblances have recently received sociological attention, perhaps precisely because: ‘Family resemblances are in some ways deeply personal but are also publicly perceived, constructed, commented on and speculated about’ (Mason, 2008: 30). The fascination of resemblance, Mason argues, is in how resemblance speaks to biogenetic connectedness, without being a direct or predictable reflection of it. Rather resemblances ‘speak of the potential for affinity’ (Mason, 2008: 34). Therefore talking about resemblances becomes a resource to affirm connectedness or indeed distance (Becker et al., 2005, Nordqvist, 2010, Roberts 2012b) and therefore may also be a family practice.

Many saw resemblances between the foetus and themselves, their partners or their children, consistent with what Mason (2008) calls the ‘sport’ of spotting family resemblances:

‘She looked like her dad, she really did. My husband’s got a dimple here in his chin and you could see that. And you could see her nose was like quite a biggish nose really. You could see exactly what she looked like.’ (010)

For one participant, resemblance talk enacted interconnection with several members of her extended family:

Yes, it’s got my cheeks and my chin hasn’t it. And then it’s probably got my nose as well and your mouth...It just looks like me, yes. It looks like my nephew as well, my sister’s little boy... the first thing we both said was oh my god that looks like [name of nephew] did when he was a baby. And because my sister had had a scan, 4D scan with him it was really similar... But me and my sister and my mum and all that side we’re all really alike aren’t we? Must have strong genes or something because we all... like my sister’s little girl looks like she’s mine. Everybody thinks she’s mine because she looks more like me than my sister (012)

Here, the foetus is situated already within an extended family of people who all look alike.

Resemblance to the expectant-father is noted only very briefly: “...and your mouth”. Resemblance is seen as a marker of biological connectedness – “we must have strong genes or something” – but primarily for one side of the family. We do not know whether the expectant-father saw a different set of resemblances, but here talk of resemblance, weaves the foetus into the mother’s family.

Identifying family resemblances can be a collective activity. One woman described how, when she showed her scan pictures to her family, they speculated about who the baby looked like although she could not see a resemblance: ‘it doesn’t look like anybody’ (014). A couple describe showing a 3D scan picture to their 10 month old daughter. They describe the likeness to their daughter as ‘uncanny’ and describe a similar reaction from the infant: ‘she actually looked at it and she was shocked because she could see that resemblance’ (015). That a 10-month old infant can perceive a resemblance is offered as evidence of its reality.

Resemblances are both real and imagined. Notwithstanding the imaging capabilities of the latest ultrasound technology, features are selectively paid attention to, subjectively interpreted. If family practices rely on being recognised as such by others, they rely here not on the clarity of the image but on a shared understanding that ultrasound can demonstrate resemblance, and that resemblance is a marker of ‘family’ connection, biogenetic or otherwise. Resemblance talk is a way of recognising family connections, and of demonstrating to others that the connection is significant to you.

Resemblance talk is also a way of imagining who the baby will be like and how they will fit into the new family.

Conclusions

In this article we have explored the proposal that commercial ultrasound examination and the social interactions around them can be theorised as 'family practices'. This analysis helps us to understand why women might make use of commercial ultrasound services, providing an alternative, or a supplement to, the notion that ultrasound is primarily an extension of the medical gaze. We are mindful that ultrasound examination for many women is primarily a medical experience, often accompanied by considerable anxiety. Others will have some ambivalence about their pregnancy. The analysis presented here of commercial ultrasound as family practice may not resonate with these experiences. However, for many women and families, commercial ultrasound primarily holds social meanings, even if these are entangled with a desire for reassurance. Reassurance as a theme is explored in more detail in our other article relating to this project (Roberts, Griffiths, Verran and Ayre, forthcoming).

Our research is limited by a focus on women who have accessed commercial scans. More diversity of opinion might be expected if we had included women who had considered a commercial scan – or perhaps been prompted to consider it by a partner or family member – and rejected the idea. It may be that women booking a scan, in the second or third trimester of their pregnancies, may be those most interested in reifying and celebrating foetal personhood. However, previous research suggests that women who feel ambivalent about their pregnancy do also access commercial scan services (Palmer 2007). It may be that women who feel some degree of ambivalence about foetal personhood were less likely to participate in an interview study. The short time lapse between the first and second interviews is also a limitation. We were able to capture women's views before and after the scan, but with just a few days between interviews, participants had had relatively little time to share their images and talk about the scan. We might predict that the personal significance of sonograms will change or decline over time. Cohn's study of participants in a mental health research study who were given printed copies of their brain scans suggests that the significance of the images faded with time, as the interpretation given by the radiologist was lost to memory and as people who were shown the image questioned its meaning (Cohn, 2010). We might have observed a similar effect here over a longer time period, although in this context the conversational norms of responding to family sonograms are more clearly defined and so people are less likely to challenge their meaning, and as we have argued, the clarity of the image seems to be of little significance with

family practices of sharing sonograms. It is also unclear so far how the birth of the baby impacts on the significance of sonograms.

By asking how commercial ultrasound might be implicated in family practices, we have extended the notion of sonograms as 'baby's first picture' to consider a wider conceptualisation of how sharing the examination experience, the resulting pictures and resemblance talk might begin to construct a sense of how the family will be reconfigured with a new addition. With some exceptions (Draper, 2002b, Draper, 2002a, Harpel and Hertzog, 2009), the relationship between sonograms and fathers, siblings, grandparents and others have not yet been fully explored in the multi-disciplinary literature around ultrasound and this article contributes to this conceptual project. The role of commercial ultrasound in family practices is more than another opportunity to acquire 'baby's first picture'. Attending the appointment and sharing the pictures provide opportunities to imagine what the family will look like with the new addition. We have argued that inviting people to come to the scan, choosing who to show the pictures to, deciding who to make copies for, are all ways of signalling to oneself and to others who will be part of the new baby's family. Making these choices is also part of rehearsing the parent role; and those who share in these activities also practice their role as father, grandparent or sibling. This includes taking responsibility for managing who is invited and protecting others from potentially difficult experiences, for example in the event of a prenatal diagnosis. The presence of the images in the house – on the bedside, programmed into the television – provides a prompt to imagine the soon to be changed nature of the family. It is perhaps easy to treat these as fairly frivolous practices, but placing these actions within a framework of family practices encourages us to take them seriously as social actions with significance for individuals and family groups.

Smart (2007) suggests that we should take seriously those relationships and families that exist in our imaginations. In the spirit of this suggestion, we have explored the prenatal in the context of family practices. Han has argued that sonograms *replace* the imagined foetus as more tangible signs. However we take a different approach and argue that rather than replacing the imagined foetus, sonograms act as prompts to imagining the new baby and the new family. If sonograms are 'baby's first picture' (Mitchell, 2001), the argument can be made that, like photographs, they are 'invitations to deduction, speculation, and fantasy' (Sontag, 1979: 23). They invite us to imagine a new person who will join our family. This does not require us to conflate the developing foetus with the newborn baby but only to acknowledge the role of the visual and of keepsakes in family practices and family display. Positing a role for imagination serves to emphasise that family is constructed in social actions and that no easy boundary can be constructed to define 'the family'. It underscores the fact that individual's create their family through social action, even if their family is not easily recognised

as such by others. As such, imagination is critical to the progressive nature of 'family practices' as a concept and yet imagination has so far been underexplored in relation to family practices and indeed in relation to social life more broadly (Adams, 2004).

Commercial ultrasound provides resources for 'doing' family that are both similar to and distinct from routine care. In the commercial sector, women have more choice over when to have the scan(s), how many people to bring with them, how many images to take home, whether to view three-dimensional imagery, whether to take a DVD recording and so on. Women can choose the most pleasing images to take home, perhaps those that are most meaningful to them, because they demonstrate family resemblance or because they serve as reminders of meaningful moments, for example a waving foetus and a daughter's reaction to that. Commercial ultrasound practices provide a particularly fertile ground for explorations because there is more flexibility in their form and use, compared to NHS antenatal care. This flexibility is relevant because family practices are determined to some extent by dominant cultural scripts and norms and to some extent by individual circumstances. Medical discourse seeks to code ultrasound as a technology for clinical assessment of the foetus, and local and national policies limit who can attend scans, how often scans are performed, and how take-home pictures are provided. Women having ultrasound scans may find there is a script of 'good' mothering to adhere to that includes showing sufficient interest in the health of the foetus while not showing too much interest in the sex or in the take-home pictures (Mitchell, 2001). Arguably women have more choice about whether to engage with the technology at all in the commercial setting whereas the literature suggests that routine scans have become so accepted that they are rarely presented to women as a choice and women rarely exercise informed choice (Ockleford et al., 2003, Mitchell, 2004). This is not to argue that the meaning and significance of ultrasound examination in the commercial sector is infinitely flexible. Other cultural scripts will be at work here, for example those around 'involved fathering' (Wall and Arnold, 2007), around sonograms as 'baby's first picture' (Mitchell 2001) and family photography more broadly, around consumption and pregnancy (Taylor, 2000). We also wish to avoid suggesting that the flexibility to shape ultrasound practice is necessarily emancipatory. For example, as we suggested above, the removal of any limits on who can attend the scan could potentially open up women's bodies to unwelcome scrutiny. Although we found very little evidence of this in our sample, we know that the family is not always a place of safety.

Our analysis raises questions about the extent to which technological innovation and commercial interests might shape what counts as a family practice. For example, it has been suggested that Kodak's marketing in the late nineteenth and early twentieth centuries impacted on consumers'

ideas about how they could represent and remember their lives through snapshots (West, 2000). The UK market in commercial scans expanded rapidly as 3/4D technology became cheaper and smaller. While the services and products offered by commercial providers draw, to a greater or lesser extent, on norms of family photography and keepsakes, questions remain about how the availability of commercial scans may be shaping family practices. As much as the medical professions were reported ten years ago as disapproving of commercial ultrasound because they believed women are misunderstanding the 'proper' purpose of the technology, it seems clear now that it is not only medical discourses that shape how women engage with ultrasound but a much wider collection of ideas about how to 'do' family. In turn, how to 'do' and display family will be shaped by available technologies.

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