

Original article:

'What do *you* think?' The collaborative practices of choice and care in a Danish obstetric ultrasound unit

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Abstract

This paper is based on ethnographic fieldwork at an obstetric ultrasound unit in Denmark and explores the few, intense minutes of clinical interaction following a high-risk screening result for Down's syndrome. The category of high-risk transforms the routine ultrasound into a situation of inescapable choice, where the health of the fetus is questioned and decisions must be made. The clinical interactions following a high-risk result are investigated as processes of production, and the concepts of *logic of choice* and *the logic of care* are employed as analytical tools for identifying different rationales at play in the situation. The analysis shows that sonographers and women/couples collaboratively engage in logics of choice and care. Their mutual aim is to make the high-risk results meaningful and manageable so that a decision can be made. In this process initiative is shifted back and forth. Through a logic of care, complexity is reduced and statistics transformed by emphasising certain interpretations and leaving others unspoken. However, the logic of choice is also collectively maintained by positioning the women/couples as decision-makers. We argue that in the obstetric ultrasound unit, the logic of choice provides a powerful frame, with the logic of care filling in the gaps and discontinuities to facilitate decisions. In this context, the logics are complementary rather than competing, and thus our analysis add new perspectives to the original concepts. In sum, the logics of choice and care provide a valuable analytical tool for interpreting and understanding the complex and collaborative practices of clinical interaction.

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Prenatal screening; clinical encounter; decision-making; risk

Introduction

In this paper, we explore a few minutes of clinical interaction at an obstetric ultrasound unit in Denmark. The interaction takes place between sonographers and pregnant women following a high-risk screening result for Down's syndrome. It is an intense situation in which the health of the fetus is questioned and where decisions about how to respond to the risk must be made. We investigate this complex interaction by means of 'a close reading of practice' (Rhodes 1990) and argue that in this context decision-making is the result of a collaborative effort.

Denmark has a tax-financed, free-for-all health-care system through which all pregnant women are offered prenatal care, including a first-trimester risk screening (FTS) for Down's syndrome. The FTS is a combined screening (Petersen et al. 2014) that calculates a single risk estimate based on maternal age, serum markers (maternal blood test), and an ultrasound measurement of the fetal nuchal translucency. The nuchal translucency is measured at the first-trimester ultrasound scan, where a general examination of the fetus is also performed. If the woman/couple wish, the risk estimate is calculated by the attending sonographer (nurse or midwife) at the end of the scan. The FTS result is immediately available and presented in the form of a statistical risk figure. A risk higher than 1:300 is considered 'high risk' and generates an offer of invasive diagnostic testing (chorionic villus sample, CVS). The diagnostic testing provides a definitive answer regarding chromosomal abnormalities, but also involves a 1% risk of miscarriage due to the invasive procedure. Thus, the unsuspecting, worried woman/couple must weigh up concerns about the health of the baby against the risk of miscarriage and decide for or against diagnostic testing.

Women's reasons for and experiences with participating in screening are well-examined (Reid et al. 2009). Fewer studies explicitly address women's experiences of a high-risk screening result (Baillie et al. 2000; Heyman et al. 2006), and the vast majority of them are based on retrospective interviews. Consequently, they do not address the complexities and subtleties of actual clinical interactions following a high risk FTS result; nor do they include the perspectives

and experiences of partners and professionals. Despite some insightful exceptions (see Pilnick & Zayts 2012; 2014), the interactional processes through which high risk is communicated, negotiated and decided upon in remain to be substantially investigated. This paper is based on extensive fieldwork and detailed observations of first trimester ultrasound examinations ending in a high-risk FTS result. Our aim is to investigate the subtle and complex ways in which high-risk is moulded and managed by sonographers and high-risk women/couples. In the remainder of this introduction, we outline our approach to clinical interaction and the theoretical concepts used for analysing these interactions.

Several studies have documented pregnant how women/couples desire prenatal ultrasound to find reassurance that their pregnancy is developing as expected and that their baby is healthy (Rapp 1999; Reid et al. 2009). Within anthropological studies of reproduction, feminist scholars have been critical of the role of medico-technical interventions such as ultrasound imagery and prenatal diagnosis in the disruption of women's reproductive agency. The overall argument is that the biomedical technologies shift focus from women's embodied experience of pregnancy to doctors' biomedical evaluation (Rothman 1993; Davis-Floyd 1992; Han 2013). This approach has in general been very critical of Western biomedicine as a dominant system of knowledge. Critiques concern the biomedical construction of the female body, issues of medicalisation and surveillance, and the relations of power between patients and professionals (Lupton 2003). The strength of this perspective is the critical approach to modern medical knowledge, practice and institutions, showing its power in shaping lives and societies (Lock and Nguyen 2010). However, these studies also tend to represent biomedicine as a culturally coherent community with professionals positioned as authoritative and compliant representatives of this culture. Consequently, the clinical encounter is often analysed as a competition or struggle between different positions or contrasting cultures, where the patient's problem and position is reduced and appropriated by the professional to fit biomedical discourse and purposes.

However, in recent medical anthropology there has been increased focus on the eclectic and pragmatic diversity of biomedicine and biomedical practices (Atkinson 1995; Saunders 2008; Jutel 2011). What these approaches have in common, is an analytical approach to biomedical knowledge and practice as negotiated, locally accomplished and contextually embedded. This entails increased analytical focus on doctors as both individual persons and clinical experts, and on patients as both embodied and biological citizens (Rose & Novas 2005). Consequently, instead of approaching clinical encounters as exchange or competition, our analytical approach has been to analyse them as processes of production. Instead of investigating 'high risk' as a process where information is exchanged between sonographers and women/couples, our analytical focus is on 'high-risk' as an enacted, social construction, whose meaning, implication and reality is generated in the clinical interaction through practice.

In Denmark, as in many other countries, participation in prenatal screening is based on informed choice (Danish Board of Health 2004). The paradigm of informed choice serves as a model for the doctor-patient relationship where the role of the clinician is to provide adequate and non-directive information, free of professional and moral judgement. On the basis of this, the pregnant woman must make an autonomous choice, free of influence from potentially authoritative and paternalistic professionals (Beauchamp and Childress 1994; Petersen and Lupton 1996). Scholars have argued that the ideal of informed choice may be particularly predominant within prenatal screening, where practises of non-directiveness and patient autonomy are a safeguard against accusations of eugenics (Petersen 1999; Koch & Svendsen 2005)

Informed choice is also a prevailing topic in prenatal screening research where numerous studies have investigated women's level of informed consent prior to participating in prenatal screening (van den Berg et al. 2006), and their interpretation of the high-risk status (Baillie et al. 2000; Heyman et al. 2006). Others have investigated professionals' success and failure in delivering non-directive information (Williams et al. 2002; van den Berg et al. 2007). The

studies all document the difficulties of the everyday implementation of informed choice in prenatal screening, yet they maintain the assumption that non-directiveness and autonomous choice is a realistic and desirable goal (Koch & Svendsen 2005). However, as several scholars have argued, the ideal of informed choice and its underlying assumptions are deeply problematic (Petersen 1999; Koch & Svendsen 2005). Firstly, biomedical knowledge is not neutral but embedded in interaction and produced through interpretation and contextualisation. It is also argued that patients do not transcend their socialisation to make 'autonomous' choices (Mackenzie 2008), but are always making decisions in relation to their social and personal worlds. Nevertheless, despite scholarly critique, non-directiveness and autonomous choice remains an influential, clinical ideal for prenatal screening in Denmark as well as other industrialised countries.

In Denmark, more than 90 % of all pregnant women have FTS performed during their first trimester ultrasound scan, and approximately 5 % of them receive a high-risk FTS result (Danish national database of fetal medicine 2012). Studies have found that Danish women have a relatively high level of knowledge and predominantly positive attitudes towards FTS (Bangsgaard and Tabor 2013). Since the nationwide introduction of the FTS in 2004, the number of children born with Down's syndrome has dropped significantly. However, the FTS continues to generate popular and professional debates in Denmark. Newspaper headlines such as 'There are few children like Elliot left' and 'Children with Down's syndrome are widely deselected' reflect ambiguous societal values regarding selective abortion of fetuses with Down's syndrome. Often, doctors and the health care system are implicitly or explicitly accused of promoting eugenics and designer babies. These ongoing debates may reinforce clinical emphasis on non-directiveness as a safeguard against accusations of eugenics.

Dutch ethnographer and philosopher Annemarie Mol (2008), identifies the pervasive discourse of non-directiveness and informed choice as 'the logic of choice'; a result of the influential, neo-liberal emphasis on the patient as user and consumer in modern health care. However, by

observing the '*messiness of mundane practices*' (Mol 2008:43) in clinical interactions, Mol identifies 'the logic care' as an alternative, everyday approach to clinical interaction. Mol builds her argument on the case of a chronic illness – diabetes – which demands continuing collaboration between patient and health professionals and argues that the logic of care incorporates a collaborative, practical figuring out of what to do in the situation at hand. It incorporates both professional knowledge and patients' experiences – a 'shared doctoring' – where facts are not easily separated from values and interpretation. The logic of care is an attuned approach, where the professional is not an objective and neutral fact provider, and where the patient is not the only one who interprets the facts and makes choices. Mol identifies and articulates the logic of care through contrast and comparison with the logic of choice to distil the logics as theoretical concepts (Mol 2008:11). In real life, they may interfere and intermingle, but, as Mol mentions, more often they clash (Ibid:1). She invites us to investigate the possible interferences of choice and care in other contexts.

Care practices have been investigated in a number of contexts, including in prenatal care (Schwennesen & Koch 2012). However, in this analysis, we go beyond identifying 'care' practices only, and address the intermingling and overlapping of both care and choice in the context of prenatal screening and high risk results. Responding to Mol's call, our aim is to explore how high-risk screening results are practised, negotiated and decided upon in a context defined by the clinical ideals of informed choice and by the mundane messiness of everyday clinical interactions. We argue that in the ultrasound examination room, logics of choice and care are not so easily distinguished and that they are more complementary than clashing, more collaborative than interfering.

Method

The analysis draws upon a total of 5½ months of ethnographic fieldwork conducted between 2011 and 2013 at an obstetric ultrasound unit at a university hospital in Denmark. The

research explored the interactions and communication between pregnant women/couples and sonographers following a high-risk screening result. Data were primarily generated through participant observation, that is, by following the daily work of sonographers at the unit and participating in examinations, invasive procedures, genetic counselling and coffee-breaks. Central to the fieldwork was the opportunity to observe more than 400 FTSs of which 21 resulted in a high-risk result. SL followed 20 of these women/couples in their subsequent appointments at the ultrasound unit. The consent of the women/couples was renegotiated at each encounter. All 20 women/couples had participated in in-depth, qualitative interviews by mid-pregnancy and six of them were also interviewed after delivery. Furthermore, seven sonographers were interviewed. During interviews, having a common ground of shared experience from the ultrasound unit provided a valuable opportunity to discuss and reflect on specific situations and interactions. Insights from the formal interviews continuously informed the ongoing participant observations – and vice versa. Interviews were recorded and transcribed verbatim. Both interview transcripts and field notes were coded, and themes, patterns and connections between codes were identified, investigated and settled. The present analysis draws primarily on the field notes, and throughout the article, field note excerpts allow glimpses into the ultrasound examination room.

Merged agendas at the FTS

As the pregnant woman takes off her coat, Helen (the sonographer) explains the purpose of the examination and adds: 'I can see that your GP has indicated in the file that you want a risk assessment for Down's syndrome, is that correct?' The woman nods yes, and as she lies down on the bed, Helen explains that the outcome is a statistical number, not a definitive answer, and introduces the difference between normal risk and high risk saying: 'If you get a normal result,

then it's just "good-bye and see you later".' The couple chuckle. 'And if it's a high risk, well, then we will discuss the options available to you. We'll deal with that, if it becomes relevant, OK?'

This is the standard introduction used in various forms by all sonographers at the ultrasound unit because, as sonographer Ingrid explained, '*I have to make sure that this is what they (the couple) want. Once I've given them the risk assessment, I can't take back that knowledge*'. With the introduction, sonographers intentionally frame the situation in a logic of choice by repeating the couple's consent and by pointing to the potential future options in case of a high risk.

During the ultrasound examination, the sonographer guides the couple through the blurry black-and-white ultrasound images on the monitor: '*There's the little heart beating*', she says, while the couple smile and squeeze each other's hands. Several studies have documented how the fetal image on the screen generates a strong sense of pleasure and joy and has the potential to 'accelerate the pregnancy' (Lupton 2013; Mitchell and Georges 1998; Rapp 1999). The playful comments made by couples during the scan, such as '*honey, I think we have a future soccer player*' or '*look, it's gonna have your nose*' reveal how the ultrasound images of the fetus are infused with social meanings of an imagined and desired future as parents and as family (Mattingly 1998). Janelle Taylor (2008) identifies the sonogram as a 'hybrid practise' that straddles the needs of biomedicine with the wants of consumer society and point to the potential tension between those two. Similarly, in her analysis of men's empirical accounts of the prenatal ultrasound, Draper (2002) identifies a potential 'clashing of world views' (p. 787) between the pregnant couple's expectation of the ultrasound as a social event and the expert paradigm of the ultrasound as a diagnostic event. However, at the ultrasound unit, we see these 'views' merging rather than clashing. As sonographer Emma explained during a coffee-break, '*Yes, it's a fetus and we are here to examine it. But it is also their child. In a few months, it'll be living with them in their house. So the scan is also about creating*

that bond and recognising that it's a precious moment.' Similarly, the FTS is not merely a social event for the couples; they too have a biomedical agenda. They are 'biological citizens' (Rose & Novas, 2005) and prepared to enter and work with biomedical discourses. While adoring the future soccer player, they actively question, investigate and interact with the biomedical information produced by sonographers in order to obtain knowledge about the health of their baby. Thus, rather than clashing, sonographers and pregnant women/couples collaborate to mix biomedical purpose with social and personal concerns. The ultrasound scan is not only an exchange of information, but also a sharing of doctoring (Mol 2008) in which the standard expert/lay positions are reconfigured and the logics of choice (presenting knowledge in order to advance reproductive choice) and care (imagining future parenthood) are enacted by both sonographers and women/couples.

The turning point

OK, what I've seen today looks fine (smiles), but I'm just gonna calculate those numbers for you, says Meredith and turns to the computer in the corner of the room. Anna gets dressed, quietly whispering something to Jacob. Both are smiling. Anna sits down on the end of the bed, while Jacob gathers their bags and coats. Then, almost in slow motion, Meredith turns on her chair and rolls it close to the couple. Jacob sits down next to Anna. Meredith stretches her arm out to turn on the lights and then says in a quiet, serious voice: *'Well, Anna and Jacob, we need to have a little talk. Unfortunately, when I punch in the numbers you end up in "high risk" for Down's syndrome.'*

This last sentence marks a boundary. The classification as high-risk divides the ultrasound scan into a 'before' and 'after' (Jutel, 2011) as the situation is dramatically reshaped and new agendas are brought into play. Meredith gently strokes Anna's arm and asks, *'What do you think? Have you considered that this might happen?'* Evidently, sonographers have extensive experience with high-risk screening results and of the different responses of women/couples to

them. They have a repertoire of communications, interpretations and options at hand, and in order to decide which ones to bring into play in this particular interaction, the sonographers engage in a constant involvement with and adaptation to the couple, inviting them to share their perspectives and ask 'what are your feelings right now?', and 'have you thought about this?' This allows the sonographer to guide the interaction in accordance with the specific couple and walk down the paths to which they point. Meredith's question in the quote above enacts a logic of care, where she positions Anna and Jacob as knowledgeable interlocutors. Sonographers invite the women/couples to be the first to define this specific situation and thus initiate a situation of involvement and collaboration, where answers are not necessarily definitive or certain. This is a caring practice in which the unique history of the woman/couple is acknowledged as important; however, it is also a practice of choice in which the woman/couple can and should autonomously evaluate the risk presented to them. In Annemarie Mol's analysis of choice and care in the case of diabetes, she carves out the concept of care through comparison and contrast with choice (Mol 2008: 8). They represent two different (and often competing) ways of dealing with biomedical problems. In the case of prenatal screening, we see how care and choice sometimes overlap and support each other.

At this point, most women/couples are visibly confused and saddened, and their first concern is to understand the numbers. Consequently, the conversation swarms with statistics, for example, '1:213 risk figure, 1:300 cut-off, 1:100 risk of miscarriage, 1:625 age-related risk'. Often, both the sonographer and the woman/couple suggest different ways to contextualise the statistics; for example, the partner converts the risk figure to a percentage, the sonographer brings forth the image of tickets in a lottery, or the couple will compare 'their number' to the cut-off of 1:300.

Lilly: '1:244, I don't know... we just haven't...'

Stephen (partner) interrupts: 'so, 1:300, that's normal risk? Is there a 1:100?'

Helen (sonographer): 'Yes, and there is also 1:2 – that's a tough one. 1:244 – that's not so tough. The odds are good... 243 healthy children.'

On the one hand, Lilly and Stephen relates to the cut-off that officially categorises their result as high risk, which results in the offer of invasive diagnostics. On the other hand, they are invited to interpret the risk assessment: '*is 1:244 a high risk for you?*' (Helen, sonographer). So, women/couples have the choice to (and are invited to) override the cut-off and decide that 1:244 is not a high risk and that invasive diagnostics are needless. However, they cannot avoid the high-risk result as such or avoid making a decision about what to do. The high-risk result makes a situation of choice inescapable.

Along with the efforts to deal with the statistics, another question often arises: Why? Why did we end up as high risk? To answer this question, sonographers usually invoke the components in the risk algorithm: '*The blood test is a bit skewed, so that's what tips the scale*' (Meredith), or '*Your ultrasound and blood test are fine, so it's really your age that is the "villain" here*' (Rebecca). These are compelling and authoritative answers, pointing to the complicated biochemical lab results and the complex algorithm behind the risk figure. Most women/couples accept these explanations as sonographers chain the elusive statistics to something tangible, and convincingly link the uncertainty to unruly hormone levels and aged egg cells. However, some women continue to question whether the high-risk result could have been avoided if they had done something differently. Sonographers often terminate these inquiries by calling the result 'unfortunate' or even 'bad luck'. While 'bad luck' is virtually empty of explanatory content (Ramløv 1986), its contextual value lies in the framing of high risk as an unfortunate and unexplainable random event that the woman could not have prevented or averted. 'Bad luck' serves to alleviate women from feeling guilty or responsible for the high-risk outcome, but a reference to 'bad luck' also effectively shuts down other attempts to discuss or question the statistics. The risk figure is what Latour (1999) identifies as 'black box' of scientific knowledge; it can be interpreted and explained, but it cannot be eliminated, thus reinforcing

the situation of choice. Somatic explanations and fatalistic practical reasoning do not radically attune to the uncertainties of the women/couple but rather to their position as decision-makers.

Reducing complexity through collaboration

Decision-making is inescapable, but when weighing up the risk of miscarriage against the worries about the condition of the fetus, statistics do not provide the answer. In her investigation of the cultural dimensions of risk, Boholm (2003) remind us that there is no simple translation from epidemiologically identified risks and probabilities to 'situated risk', that is, the way risk estimates are actually understood and contextualised by people in social settings. In the ultrasound examination room, the numbers do not address in any satisfactory way what is at stake in this situation and/or give any directions for how to manage it.

In a logic of choice, the sonographers position the woman/couple as knowing subjects and autonomous decision-makers, however, being in charge in the unknown territory of risk figures and jeopardised future can be lonely and difficult (Mol 2008). Consequently, several of the women/couples turn to the sonographer and ask, '*What do you think? What is your advice?*' These questions challenge the logic of choice, in which giving direct advice is inappropriate, and concurrently demonstrate acknowledgement by the woman/couple of the sonographer's extensive professional knowledge and experience. Schwennesen and Koch (2012) find that 'authority is trustingly delegated' to the sonographer. Similarly, we find that the woman's/couple's request for guidance addressed the very knowledge differences that the logic of choice is intended to eliminate. However, we understand these requests as an *invitation to collaborate* rather than as a delegation of authority. Asking for advice shows how the logic of care is not only something health professionals use to engage with patients; it is also something patients enact and promote in their interactions with professionals, for example, when they position decision-making as a collaborative practice. In subsequent interviews, several women/couples explained that they did not want the sonographers to make choices *for* them, but to consider the situation *with* them. This highlights that patients also engage in both

logic of care and logic of choice; they expect and appreciate making their own decisions, but do not expect to make them in the vacuum sometimes implied by a strict logic-of-choice paradigm.

In responding to their invitation, sonographers walk a tight-rope in balancing the logics of care and choice: promoting autonomy and choice, while not leaving the woman/couple alone in unknown territory. By attuning to the cues of the woman/couple, sonographers emphasise certain meanings and interpretations while underplaying or silencing others. This is a process of reducing and transforming a complex situation into manageable platforms of meaning from which a decision can subsequently be made.

Following Lilly and Stephen's quiet discussion of the 1:244 risk figure, silence falls. When sonographer Helen asks for their thoughts, Lilly shrugs her shoulders and Stephen mentions that he actually thinks 1:300 (the cut-off) *is* a high risk. Helen offers an interpretation: 'I think, what you need to consider is the seed of uncertainty that we have planted with this risk figure, OK'.

Stephen mentions the cut-off and Helen shifts the attention to the category of high risk rather than the specific (abstract and debatable) risk figure. Similarly, in a subsequent interview, Nicolas (partner) recalled, '*What mattered most was that they pointed us out as high risk. We ended up in the bad group.*' Sonographers and women/couples collectively reproduce the high-risk category as authoritative and powerful, regardless of the specific statistical probability. This consequently reduces the complexity of the situation and condenses it to the main issue, namely that what needs to be dealt with by the couples is not necessarily the individual risk, but the fact of being 'pointed out' and the 'seed of worry' planted by the categorisation.

Another example of reducing complexity is to focus on the immediate future of the pregnancy. For example, when Anna and Jacob expressed uncertainty about what to do, the sonographer

(Meredith) responded, *'The most important thing is that you can reconcile to whatever decision you make. And that you can feel happy and safe throughout the pregnancy. That's the most important.'* Similar reflections are often initiated by the women/couples:

Katie is sitting on the hospital bed, 'what do you think?' she asks her husband, Ruben. 'It's pretty close...' Ruben responds and both of them look up at the sonographer, Ingrid. 'Maybe you should go home and digest this whole thing', she says, 'think it over. 1:297. We're not in a hurry'. Katie hesitates and Ingrid starts to explain the options of additional ultrasound, and maybe amniocentesis, if the couples should change their mind later. Katie interrupts: 'No, let's have it done. I just know I won't be able to leave this alone (Ruben: 'I know, you won't'). I'll spend all of this pregnancy thinking and worrying. I'll go crazy (Ruben: 'You'll drive me crazy!')'.

By accentuating the importance of having a happy and safe pregnancy (whether undergoing invasive diagnostics or not), sonographers and women/couples relate to the latter's immediate lived experiences. The temporal context is folded (Mattingly 1998) and the future towards which action must be directed is situated in the spheres of known, everyday life. The immediate future of the pregnancy is given primary concern, whereas more distant and uncertain futures, such as having a child with Down's syndrome, are only rarely and briefly addressed at this point. Sonographers and women/couples collectively negotiate the complex high-risk situation by simplifying and ascribing certain meanings (e.g., categorisation is powerful, uncertainty causes worry) while ignoring others (e.g., risk of miscarriage, disability).

As Pilnick and Zayts (2014) observe, the uncertainty of the risk figure allows for two simultaneous interpretations and two different rationales; it can be interpreted as a rationale for further testing (uncertain results must be confirmed) or for no further testing (uncertain results can be discounted). The examples above all speak in favour of further testing and

implicitly work to legitimise invasive diagnostics. Engaging a logic of care, the women/couples use feedback from the sonographer to test their personal reasons and the social acceptability of being willing to risk the pregnancy for a 1:297 risk of chromosomal abnormality.

The risk of miscarriage is the paramount concern for high-risk women/couples. To Anna and Jacob, the sonographer (Meredith) said, *'Yes, there is a risk. We are obliged to say that it's a half to one per cent. It's there. But our doctors are very good. They do this every day.'* First, by using 'obliged to say', Meredith points to some obscure authority beyond this particular examination room, and even beyond the ultrasound unit. This authority is challenged by reference to the sonographer's professional, everyday experiences of invasive diagnostics – discreetly suggesting an actual lower risk of procedure-related miscarriages. Second, she challenges the statistics by emphasising a local expertise that may (or may not) influence the risk of miscarriage: competent doctors who do this every day. With these comments, she localises the statistics and engages the trust of the woman/couple in the hospital in order to downplay the risk of miscarriage. This can be interpreted as nudging women towards the CVS, thereby neglecting non-directive information; however, it may also be construed as the logic of care, as sharing the burden and inducing hope without making promises.

In summary, sonographers and women/couples collectively attend to values and reduce complexity by emphasising certain interpretations and future scenarios, leaving others unspoken. This can potentially be construed as violating the ethics of autonomy and value-free information. However, in line with Schwennesen and Koch (2012), we found that these interpretations are exactly what make the random and meaningless situation of high risk meaningful and manageable. We add to this that the whole situation is directed towards a certain end, namely, taking a decision. From the standpoint of the sonographer and the woman/couple, they need to come to terms with the uncertain situation in a way that will allow them to make a decision to which they can commit.

Coming to a decision

Sonographer Julie has only just mentioned the 1:223 screening result when Sofia turns to her and says 'yeah, we want the CVS', then turns back to exchange a searching look with Mads to confirm. 'Don't we, babe?'. Julie smiles and says, 'that's fine, but let me just talk you through this, OK. So you know what you are getting into and what your options are'.

Observing the interactions at the ultrasound unit, it was apparent that decision-making does not necessarily follow from information; sometimes it is the other way round, and women/couples voice a decision only seconds after – or even before – the sonographer has fully explained the risk figure. Even though the high-risk situation is an unequalled situation in which most women/couples have no prior experience or established management strategies (Boholm 2003), and even if they initially need feedback to make the high-risk status meaningful and manageable, most still have a gut feeling, a spontaneous concern and/or a more or less explicit personal conviction about what to do in this situation, all of which results in 'prompt' decisions. Interestingly, these prompt (or 'default') responses are generally not supported by the sonographers, who often remind the woman/couple that this is a serious situation requiring contemplation of the understandings and alternatives at hand.

Sonographers thereby enact the logic of choice by which decision-making requires more than spontaneous gut feelings and rather a weighing up of the evidence to arrive at an informed choice. Consequently, they initiate a short dialogue about the risk assessment and the options available, of which some examples have been mentioned above. Only then, is the final decision established.

Of the 20 women/couples followed in this study, 17 decided to have invasive diagnostics and 12 of these requested to have it done immediately. Sonographers will often advocate for an appointment the following day; having time to 'digest' and 'talk it over' serves as their argument for this. In so doing, the sonographers enact the decision as an important one

requiring contemplation. Furthermore, they invoke the limits of the hospital setting and position 'home' and 'everyday life' as important factors when making important decisions. Finally, a night at home is introduced to the women/couples as an opportunity to 'calm down' and 'feel certain', resulting in a less stressful invasive procedure (for both professionals and women/couples).

Coming to a decision is the pinnacle of the interaction and represents an intermingling of both choice and care rationales. On the one hand, women/couples are given space to connect to lived experiences of everyday life – even if that is not their initial desire (they want to get it over with) – enacting a logic of care where the professional sometimes does know what is best for the patient. On the other hand, the sonographer's insistence on time to digest the information also enacts a logic of choice as a way to secure patient autonomy and reduce hospital influence on the woman's/couple's final decision. Going home serves both ends. In this example, care is not so easily distinguishable from choice, or vice versa.

In subsequent interviews, the women/couples generally express a high degree of satisfaction with the sonographers and the way the dialogue around high risk was conducted. They all felt that they had made their own decision and that alternatives were made available to them. They appreciated that the decision was theirs to make – even if a difficult one – and valued the opportunity to think the situation through with the sonographer. Both sonographers and women/couples reproduce the logic of choice, but it is not in any simple way disconnected from or in opposition to the logic of care that also flows through the clinical interactions that follow a high-risk screening result.

Concluding discussion

In this article, we have drawn on the logics of choice and care as analytical tools for illuminating the interactions between sonographers and pregnant women/couples following a high-risk screening result. This perspective brings to the fore some key points.

First, the logic of choice paradigm played a defining role in the way the FTS was framed and implemented in Denmark. Although we have identified care as continually running through the interaction, it is also evident that in this whole situation, a logic of choice is heavily scripted. In Mol's case of diabetes there is no ultimate solution or cure; however, in the context of FTS, the CVS promises a solution that will replace uncertainty and ambiguity with solid and definitive knowledge about the fetal chromosomes. In their analysis of 'social technologies', Jöhncke et al. (2004) show how solutions (specific technologies, interventions) actively produce problems by providing a frame within which a specific condition can be identified and formulated as a problem. Uncertainties in life (e.g. the risk of carrying a fetus with Down's syndrome) are considered inevitable circumstances until promises of change or solution reframe them as a 'problem' that demands attention and action. Thus, technologies are productive. Because the identification of the problem is intrinsically linked to its solution, the FTS technology creates and legitimises specific understandings (1:300 is a high risk) and choices (to (dis)confirm the identified risk). Like other surveillance and screening technologies, prenatal screening is based on an assumption that knowledge provides opportunities to act and control. Several studies have shown how the mere availability of risk information links to a moral imperative to prevent adverse outcomes and make choices towards control and elimination of risk (Petersen 1999; Svendsen 2005).

Thus, when 85 % of Danish high-risk women/couples decide to have the CVS (Petersen et al. 2014), we suggest that is it not due to biased information and paternalistic sonographers, but rather that the FTS technology and whole situation is 'biased'; embedded in specific and contingent social, historical, political and economical contexts and pointing towards the imperative of knowing through the technology of the CVS (Jöncke et al. 2004; Koch & Svendsen 2005).

However, our findings show how the clinical interactions works towards transcending this inherent bias to produce a situation where *not* agreeing with the high-risk status and *not* having a CVS are also a meaningful and legitimate choice. Sonographers and women/couples enact the risk figure as a neutral and inescapable fact open for interpretation; they exchange alternative interpretations and test different options. However, simultaneously, the weight and authority of the high-risk category is acknowledged when couples and sonographers refer to 'being in the bad group' or 'planting seeds of uncertainty.' In our specific context, logics of choice and care are not so easily distinguished, but continue to be valuable tools for bringing forth the detailed and subtle, conflicting and collaborative ways through which the FTS technology is appropriated and negotiated in clinical interaction.

Second, logics of care support and complement the logic of choice. Our findings show how the sonographer and the woman/couple organise their practices around and towards the logic of choice; they share information guided towards decision-making. In this process of coming to a decision, initiative and authority is shifted back and forth and interpretations are tested and shared; sonographer Meredith mentions competent doctors, and pregnant Katie suggests that the uncertainty will drive her crazy. In the ultrasound examination room uncertainties are addressed - not by intellectualised thinking, but through involvement, experiment and probing responses in order to gain the kind of understanding that is necessary to deal with problems as they arise (Dewey 1960). In the logic of choice, this may be construed as paternalistic authority, as a failure to live up to clinical ideals of neutral information and distanced professionals. In a logic of choice, the doctor provides the facts, while patients add values and personal interpretations (Mol 2008:439). However, we argue that these interpretive and collaborative practises of care are exactly what allow the women/couples to develop a situated and meaningful understanding of and response to the uncertainties generated by the high-risk FTS result.

Thus, we suggest that our findings add to Mol's original formulations by identifying a context where the logics actually complement each other rather than clash. Logic of care allows a dynamic, relational interaction and experimentation, and in this particular context care is not in opposition to the logic of choice, but supports and fills in the gaps that allow choice to be practised. The logic of care, enacted by both sonographers and women/couples, embraces the differences in knowledge and experience to establish a meaningful understanding from where decision can be made.

This finding has potentially important clinical implications. Within prenatal screening the ideal of informed choice is so strong that it almost functions according to an inverse logic as described by Høyer and Lynøe (2006:20): If clinicians do not support and provide a strictly non-directive approach, then they must be paternalistic, and vice versa. As a result, the messy and mundane everyday life, where sonographers balance informed choice while also taking care of worried and confused couples can be very difficult to address as other than failure and latent coercion (Williams et al. 2002). By carving out a language through, and for, caring practices, Mol attempts to contribute to healthcare by strengthening and revitalising the logic of care (Mol 2008: 92). We have shown how the logic of care runs through and is necessary in clinical interactions following a high-risk FTS result and we argue that this value-laden, experiential, collaborative approach does not contaminate or coerce, but promotes and allows good, situated decision-making. We propose that the logic of care – as theoretical approach and tool for clinical reflection - can provide a legitimate and meaningful way of speaking of practices that are not strictly non-directive and support further development of caring, clinical practices within and in dialogue with the clinical ideals of informed choice.

Third, we show how sonographers and women/couples practice both logics of care and choice during their interaction - working towards choice, and invoking care in the process. However, we also identify a small, interesting difference in their approaches. For the sonographer, who is professionally steeped in the logic of choice, the logic of care is a potentially sensitive matter,

because potential allegations (e.g., from patients, colleagues, management or the media) of coaxing patients towards certain (eugenic) decisions are always lurking. From a professional's perspective, engaging in values and sharing responsibilities with patients must be carried out with great consideration (Williams 2002), whereas the women/couples patients have fewer reservations and concerns; they actively promote feedback and involvement of a wider range of knowledge and experience (Carrol et al. 2012). In his discussion of non-directiveness in genetic counselling, Seymour Kessler (1997) reminds us that attempts to influence us are ubiquitous in everyday life. The family, our colleagues, the media and car salesmen all try to influence our attitudes and actions and we expect them to. We choose what to have for dinner, which party to vote for, and what car to buy without our autonomy or ability to evaluate suggestions and advice being compromised. Similarly, to the women/couples in our study, the involvement of professionals' experiences does not compromise their ability to make their own decision. Thus, the logic of choice is less precarious and consequently enacted less dogmatically by the women/couples, who are not subjected to clinical guidelines of non-directiveness. High-risk women/couples engage with the expert sonographer much like they engage with other trusted experts. Relations of trust are essential in this situation. Like other Scandinavian welfare systems, Denmark has a tradition of implied mutual responsibility within the health-care system and a cultural expectation that health care personnel can be trusted (Høyer & Lynøe, 2006). Also, the Danish health-care system is characterized by high patient-satisfaction, as well as a tradition for relatively non-hierarchical doctor-patient relations. This may explain why Danish pregnant women/couples enter the obstetric ultrasound unit with an expectation of both logics of choice and logics of care and thus promote their collaboration in the clinical interaction.

Our final point is less related to the logics of choice and care and more related to the value of fieldwork and focused attention on the complex, mundane and subtle details of everyday, clinical interaction. It is this approach that allows us to see how agendas are shared. Different ways of knowing merge at the initial ultrasound scan, as the woman/couple and sonographer

engage in enacting the fetus as a biomedical object and a social being. Scholars have convincingly argued for the authoritative ways in which ultrasound imagery potentially produce powerful and normalising knowledge about both the fetus and parents (Mitchell and Georges 1998; Lupton 2013). This potential should certainly be acknowledged; however, what the close reading of practice allows us to see in this specific context is the collaborative agenda and shared discourses of sonographers and women/couples, not just the reproduction of only one knowledge position. Lippmann (1999) and others (see for example Rapp 1999; Root & Browner 2001) have shown how pregnant women 'reconcile' various discourses and ways of knowing to create their own position, where statistical knowledge, clinical interactions and personal convictions are not competing sources of information, but different strands in the complex fabric that makes up women's responses to prenatal screening (Lippman 1999: 269). In the ultrasound examination room both sonographers and women/couples engage in a similar process of reconciliation and transformation of knowledge. The sonographer's enactment of the risk figure similarly interlaces with her personal and professional experience, social concerns and hopes for the future pregnancy of the woman/couple. Thus, in this particular context, women/couples and sonographers are positioned not as representatives of two different knowledge traditions, but as simultaneously engaged in a range of ways of knowing in the process of appropriating the risk figure to make it meaningful and manageable. We believe that continued empirical attention to shared experiences and collaborations practices in clinical interactions - alongside potential conflicts and differences - offers a fruitful analytical perspective able to move beyond the doctor-patient dichotomy.

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References

- Atkinson, P. (1995). *Medical talk and medical work: the liturgy of the clinic*. London: Sage.
- Bangsgaard L and Tabor A. (2013). Do pregnant women and their partners make an informed choice about first trimester risk assessment for Down syndrome, and are they satisfied with the choice?. *Prenatal Diagnosis* 33:146-52.
- Baillie, C., Smith, J., Hewisin, J. et al. (2000). Ultrasound screening for chromosomal abnormality: Women's reactions to false positive results. *British Journal of Health psychology*. 5:377-94.
- Beauchamp, T.L. and Childress, J.F. (1994). *Principles of biomedical ethics*. (4th. Ed.). New York: Oxford university press.
- Boholm, Å. (2003). The cultural nature of risk: Can there be an anthropology of uncertainty? *Ethnos: Journal of Anthropology*, 68;2:159-178.
- Danish Board of Health (2004) *Nye retningslinjer for fosterdiagnostik (New guidelines for prenatal testing)*. Copenhagen: Danish Board of Health.
- Danish national database of fetal medicine. Annual report. (2012) Copenhagen: Regionernes kliniske kvalitetsudviklingsprogram, 2012, http://www.dfms.dk/cms/images/F%C3%B8todatabasen/%C3%85rsrapport_F%C3%98TO_2012.pdf.
- Davis-Floyd, R.E. (1992), *Birth as an American rite of passage*. Berkeley: University of California Press.
- Dewey, J. (1960) *The quest for certainty: a study of the relation of knowledge and action*. New York: Minton Balch.
- Draper, J. (2002). 'It was a real good show': The ultrasound scan, fathers and the power of visual knowledge. *Sociology of health and illness*, 24;6:771-95.
- Han, S. (2001). *Pregnancy in practice. Expectation and experience in the contemporary US*. New York: Berghan Books.
- Hunt, L., Voogd, K.B. and Castañeda, H. (2005). The routine and the traumatic in prenatal genetic diagnosis: does clinical information inform patient decision-making? *Patient Education and Counseling* 56:302-312.
- Høyer, K. & Lynøe, N. (2006) Motivating donors to genetic research? Anthropological reasons to rethink the role of informed consent. *Medicine, health care, and philosophy* 9;1:13-23.
- Heyman, B., Hundt, G., Sandall, J. et al. (2006) On being at higher risk: A qualitative study of prenatal screening for chromosomal abnormalities. *Social science and medicine* 62:2360-72.
- Jöhncke, S., Svendsen, M.N. & Whyte, S.R. (2004). Løsningsmodeller. *Sociale teknologier som antropologisk arbejdsfelt*, in Hastrup, K. (ed.), *Viden om verden: en grundbog i antropologisk analyse*. Copenhagen: Hans Reitzel, pp.385-407.
- Jutel, A. (2011). *Putting a name to it: diagnosis in contemporary society*, Baltimore: John Hopkins University Press .

- Kessler, S. (1997). Psychological aspects of genetic counselling. XI. Nondirectiveness revisited. *American Journal of Medical Genetics* 72;164-171.
- Koch, L. & Svendsen, M:D: (2005). Providing solution-defining problems: the imperative of disease prevention in genetic counselling. *Social science and medicine* 60;823-832.
- Latour, B. (1999). *Pandora's Hope: Essays on the reality of science studies*. Cambridge, MA: Harvard University Press.
- Lippman, A. (1999). Embodied knowledge and making sense of prenatal diagnosis. *Journal of Genetic Counselling*, 8;5:255-274.
- Lupton, D. (2013). *The social worlds of the unborn*. London: Palgrave Macmillan.
- Mackenzie, C. (2008). Relational autonomy, normative authority and perfectionism. *Journal of social philosophy* 39;4:512-533.
- Mattingly, C. (1998). *Healing dramas and clinical plots. The narrative structure of experience*. Cambridge: Cambridge University Press.
- Mitchell, L.M. and Georges, E. (1998). Baby's first Picture. In Davis-Floyd, R. and Dumit, R. (Eds.), *Cyborg Babies*. New York: Routledge. pp. 105-124.
- Mol, A. (2008). *The Logic of Care: Health and the problem of patient choice*. London: Routledge.
- Petersen, A. (1999). Counselling the genetically 'at risk': The poetics and politics of non-directiveness. *Health, Risk & Society*, 1;3:253-265.
- Petersen, A. And Lupton, D. (1996). *The new public health*. London: Sage.
- Petersen OB, Vogel I, Ekelund C, et al.(2014) Potential diagnostic consequences of applying non-invasive prenatal testing: population-based study from a country with existing first-trimester screening. *Ultrasound in Obstetrics and Gynecology* 43;265-71.
- Pilnick, A. and Zayts, O. (2012) 'Let's have it tested first': Choice and circumstances in decision-making following positive antenatal screening in Hong Kong. *Sociology of Health and Illness* 34:2:266-282.
- Pilnick, A. and Zayts, O. (2014) "It's just a likelihood": Uncertainty as Topic and Resource in Conveying "Positive" Results in a Antenatal Screening Clinic. *Symbolic Interaction* 37:2:187-208.
- Ramløv, K. (1986). On the limits of Explanation. *Folk*, 28:125-140.
- Rapp, R. (1999) *Testing women. Testing the fetus: The social impact of amniocentesis in America*. New York and London: Routledge.
- Reid B., Sinclair, M., Barr, O. et al. (2009) A meta-synthesis of pregnant women's decision-making processes with regard to antenatal screening for Down syndrome. *Social Science & Medicine* 69:1561-73.
- Rhodes, L.A. (1990). Studying biomedicine as a cultural system" in Johnson, T.M., & Sargent, C.F., *Medical anthropology: a handbook of theory and method*. New York: Greenwood Press pp. 159-173.

- Root, R. & Browner, C.H. (2001). Practices of the pregnant self: compliance with and resistance to prenatal norms", *Culture, medicine and psychiatry*. 25;2:195-223.
- Rose, N. & Novas, C. (2005) Biological Citizenship" In Ong, A. & Collier, S.J. (eds.), *Global assemblages: technology, politics, and ethics as anthropological problems*, Malden, MA: Blackwell Publishing, pp. 439 – 463.
- Rothman, B.K. (1993). *The tentative pregnancy. How amniocentesis changes the experience of motherhood*. New York: Norton & Company.
- Saunders, B. (2008). *CT Suite: The work of diagnosis in the age of non-invasive cutting*. Durham: Duke University Press.
- Schwennesen, N. and Koch, L. (2012). Representing and intervening: 'doing' good care in first trimester prenatal knowledge production and decision-making. *Sociology of Health & Illness*, 34;2:283-298.
- Svendsen, M.N., (2005). Pursuing knowledge about genetic risk of cancer. In Jenkins, R., Jessen, H. and Steffen, V. (Eds.). *Managing Uncertainty. Ethnographic studies of Illness, Risk and the Struggle for control*. Copenhagen: Museum Tusculanum Press. Pp. 93-119.
- Taylor, J. (2008). *The public life of the fetal sonogram: Technology, consumption and the politics of reproduction*. New Brunswick, NJ: Rutgers University Press.
- Van Den Berg M, Timmermans DRM, Ten Kate LP, et al. (2006). Informed decision making in the context of prenatal screening. *Patient education and counselling* 63:110-17.
- Van Den Berg, M., Timmermans, D.R.M., Kleinveld, J.H. et al. (2007). Are counsellors' attitudes influencing pregnant women's attitudes and decisions on prenatal screening? *Prenatal diagnosis* 27; 6: 518-524.
- Williams, C., Alderson, P. and Farsides, B (2002). Is nondirectiveness possible within the context of antenatal screening and testing? *Social science and medicine* 54:339-347.