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Formats of responsibility: elective surgery in the era of evidence-based medicine

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Abstract This article illustrates what pragmatic sociology refers to as investments in form, by examining the formats created and used by a group of surgeons to determine when elective surgery for pelvic floor disorders could be responsibly undertaken. Drawing upon ethnographic observations of surgical consultations at an academic medical centre in Canada, we show how two specific formats – that the patient is sufficiently bothered and the patient accepts the risks of surgery – allow for justifiable action in conditions of uncertainty and contingency and in light of the demands of dominant imperatives in medicine and health care, especially evidence-based medicine (EBM). We argue that an analytic of justification is necessary for understanding when and how surgery is offered and elected for, and for considering how surgical consultations might be improved.

Keywords: surgery/surgeons, medical practice/medical work, evidence-based medicine, ethics/bioethics, women's health

In analyses of medical practice in the era of evidence-based medicine, an historically and culturally specific domain of medical action tends to be backgrounded: how medical action can be and is justified. In this article, we follow Moreira (2012) in analysing practices in health care using the pragmatic sociology of Boltanski and Thévenot (2006), who have emphasised the extent to which individuals not only must coordinate heterogeneous objects in the course of action (per actor network theory) and classify what is relevant and meaningful (per Bourdieu), but also justify and legitimise such coordination and classification (Thévenot 2007). The surgeons we observed at a clinic for the treatment of pelvic floor disorders generated two basic 'formats' to establish when and how surgery could be responsibly undertaken: botheredness and risk acceptance. These formats shaped which beings, objects, emotions, and experiences were relevant and how they were classified in the consultations, and facilitated the work of coordination. But in addition these formats were moral, justifying the inclusion and classification of those beings and objects by appeal to common orders of what is right and good (Dodier 1993).

Pragmatic sociology takes seriously actors' claims about why they organise their work the way they do (Dodier 1993, Moreira 2012, Wagner 1999): as a clinic nurse said to a patient, 'the whole rationale behind the clinic is based on how much patients are bothered'. As a surgeon said to another patient, the decision of 'where to go' is 'completely patient-driven, we do surgery when the patient thinks the benefits outweigh the risks'. These two ideas – the patient's condition must be sufficiently bothersome and the patient must understand the

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benefits and accept the risks of surgery – were necessary conditions of responsible surgical action. They are moral considerations, but not ethical principles. Neither are they measures of a patient's condition or attitude. They are investments in form (Thévenot 2002, 2006): conventions worked out in practice that make it possible to act responsibly in conditions of uncertainty and contingency and in light of the demands of dominant imperatives in medicine and health care (May *et al*. 2006), especially evidence-based medicine (EBM).

Background and literature review

Compelling descriptions of medical practice have resulted from the traditions of social studies of scientific knowledge (SSK) and actor network theory (ANT). Medical and surgical work is shown to entail the coordination of heterogeneous human and nonhuman actors (Mol 2002a, 2002b, Moreira 2001, Pope 2002). Medical knowledge, in the clinic and in research, is shown to necessarily intertwine what would have once been seen as separate entities – 'social' and 'clinical' factors (Berg 1992, Richards 1988, Silverman 1987). Pope (2002) emphasises that surgical practice is contingent, in that action is always conditional on a number of contextual factors (pertaining to the case at hand, the surgeon, and features of the environment surrounding surgical work). It is also contingent in that chance events are a regular part of the work (e.g. the withdrawal of a preferred surgical device from the market; or the discovery that a patient's ureters are not where expected). In such research, the frame of reference for medical action is shown not to be fixed, objective biomedical knowledge, but distinct ontologies (Mol 2002b), routines (Bloor 1976), or distributed protocols (Timmermans and Berg 1997) worked out in localised processes, allowing for pragmatic certainty (Atkinson 1994). Typically not explained, however, is why medical action varies in particular ways, for instance why one routine is adopted rather than another. When specific imperatives around the organisation of medical practice are studied, such as EBM or patient-centred care, the central contribution is to describe their variable deployment as tools and techniques (e.g. Timmermans and Berg 2003). The position of these imperatives as moral frameworks or as conceptual fields of struggle over legitimacy and professional power (see Armstrong 2007, Berg 1995, Lawrence 1985, Pope 2003, Schlich 2007, Whelan 2009) is not integrated with the analysis of practice.

On the other hand, the tradition of critical social scientific studies of medicine has focused on ideologies, economic interests, and social categories of domination as explaining why some ways of practicing medicine are rendered legitimate and responsible rather than others (classics include: Ehrenreich and English 1973, Waitzkin 1991, Zola 1972) – in short, on medicine and power. From this perspective, an organising impulse such as EBM is apt to be depicted as a fixed category or discourse (cf. Lambert 2006, Weisz 2005), an emanation of ideology to be assessed as good or bad (see Mykhalovskiy and Weir 2004), so that clinical practice is of interest primarily to learn how inequalities in power are reinforced or reproduced. Justificatory formats, however, are situated and mutable ways of rendering responsibility in light of the contingencies of practice and powerful organising impulses (May 2007), and which can perhaps explain with greater specificity who is and is not medically treated.

The formats of risk acceptance and botheredness therefore could be seen as elements of an 'indigenous morality' (Halpern 2004) in pelvic floor surgery, and our analysis highlights the moral dimensions of everyday practice and negotiations of responsibility (Kaufman 1997, Schlich 2007) that are not typically foregrounded in studies of contingent practice or medical ideologies. Sociologists have long examined the clinical encounter (Heritage and Maynard 2006), and there is a rich body of ethnographic work on surgery (including Bosk 1979, Cassell 1991, Fox 1991, Prentice 2012, Zetka 2003), which has also described moral and normative orders

generated in medical training and clinical encounters (Bosk 1979, Cassell 1991, Strong 1979) – as rituals, morality plays, or a collective conscience. While the formats used in pelvic floor surgery may be more or less indigenous and part of a culture of medicine or surgery, we emphasise that they are generated in relation to possibilities for defining what is right and good, of which EBM might be seen as one particular expression.

Particularly useful, then, is Moreira's (2012) schematic of three major 'modes of coordination' according to which action has been justified in modern, western health care in the last four decades: efficiency, effectiveness, and involvement. Each mode is supported by recourse to a larger set of ideals about what makes beings and objects worthy, akin to what Boltanski and Thévenot (2006) call orders of worth. Efforts to make healthcare more efficient are typically supported by recourse to the ideal of the market, which values productivity, monetary gain, and freedom of choice. Making health care more effective, for instance by using evidence of treatment outcomes to guide practice, is supported by the ideal of the laboratory as a site in which disputes can be settled through science and improved knowledge. Involvement, such as initiatives to enhance public or patient participation in healthcare decision-making, is aligned with the ideal of the forum, 'as a site where a reasoned, collective negotiation of moral principles should provide the basis of social and political consensus' (Moreira 2012: 10). Each mode enables 'articulation between different ways of knowing and moral conceptions of the role of healthcare in society' (Moreira 2012: 1), with differing implications for how medical professionals act and patients are treated. In this vein, Dodier (1994: 490) described the mobilisation of simultaneously cognitive and ethical 'frames' in occupational medicine, which differently commit the doctor to both forms of reasoning and 'to a manner of conceiving his or her place in an apparatus of social justice'. So too pertains Daston's (1995) idea of 'moral economies' in science, in which she identifies historically specific modes of objectivity that are inseparable from sanctioned values (see too Cambrosio *et al*. 2006), and comparative studies of models, cultural narratives, and logics as adapted in medicine (Harrison 2002, Gordon and Paci 1997, Mol 2008, Silverman 1987).

In addition, we suggest uncertainty, as distinct from contingency, retains special importance in relation to justification. Uncertainty is a classic topic in the sociology of medicine (Fox 2000) referring to situations in which it is not clear – for differing reasons – how to proceed. The existence of uncertainty makes physicians especially exposed to being judged. Elective surgery is by definition marked by the quality of uncertainty precisely because there is equivocality about whether, when and how it should be undertaken, in this case affecting the doctor-patient relationship (Calnan 1984). Therefore, to understand when and how elective surgery is undertaken requires understanding the formats of its justification.

This article does three things. First, we describe how a particular configuration of knowledge-values-emotions is enacted and deployed (as per Dussauge *et al*. 2015), attending to the inclusions and exclusions that make up a particular site of medicine (Hillman *et al*. 2009, Silverman 1987). Second, using pragmatic sociology, we examine how work in this site is brought into relation with modes of coordination through the formats of botheredness and risk acceptance. Third, we reflect upon the formats in light of the fear and insecurity sometimes apparent in the observed surgical consultations.

Research setting and methods

The clinic

This study was conducted at a clinic in an academic hospital in Canada. The clinic helped women with problems of 'leaks and bulges' – primarily stress urinary incontinence (SUI),

described as leaking urine under such stress as laughing, coughing, or sneezing; and prolapse, in which the bladder, uterus, or rectum press or bulge onto the vagina, sometimes resulting in a visible protrusion. The clinic provides a typical array of treatment options for these problems – pessaries (small flexible devices that sit in the vagina and support pelvic structures), physiotherapy, medication, and surgery. This article reports on the patient consultations of four surgeons – Adrienne, Steve, Lucy, and John – and other clinic staff observed in the course of shadowing the surgeons. For reasons of confidentiality, we omit professional and personal details about the surgeons. All names are pseudonyms.

Currently, the dominant procedure for surgical treatment of SUI is the tension-free vaginal tape (TVT) developed in the late 1990s, which involves placing a permanent synthetic mesh sling under the middle section of urethra to support it when under stress, via a vaginal incision and two small abdominal incisions. Some surgeons in the clinic also continued to offer the more laborious Burch colposuspension, the previous 'gold standard' treatment for SUI that involves an abdominal approach (open or laparoscopic) and suturing the anterior wall of the vagina to ligaments or fascia, thereby increasing pressure on the urethra. For prolapse, the surgeons generally considered two types of surgery. 'Native tissue repairs' or 'vault suspension' involve a vaginal surgical approach where the surgeon uses sutures to suspend and support the uterus or vagina by attaching existing tissues to other pelvic structures, usually ligaments. Sacrocolpopexy involves suturing synthetic mesh to the top of the vagina and sacrum, making a supporting bridge, through an abdominal (often laparoscopic) approach. We did not observe the surgeons offer transvaginal placement of synthetic mesh for the treatment of prolapse – a procedure for which numerous device-procedure kits were heavily marketed from about 2003–13, many of which are now the subject of extensive litigation, especially in the United States. Traces of the 'mesh mess', as one surgeon called it, were apparent in the consultations. In this discipline, the number of professionally accepted surgical options may be larger than in others because for many clinical scenarios the existing evidence is indeterminate, itself due in part to the large scope for surgical variation resulting from anatomical and physiological properties of the pelvic floor surgical space.

Data collection and analysis

The data were collected using ethnographic methodology – we went to the clinic, observed what happened, asked questions, and wrote fieldnotes. The fieldnotes were then analysed in a non-linear fashion typical of qualitative research (Lofland and Lofland 1995). We made observations of clinic staff for periods of three to five hours on 27 separate occasions, over the course of four weeks in the fall of 2013. We observed 80 surgical consultations, 17 cystoscopic and urodynamic tests, 10 pessary consultations, and a handful of physiotherapy sessions and consultations with patients with urgency. This article is based on 16 fieldwork sessions in which we observed surgical consultations.

During the fieldwork, we followed surgeons and other people working in the clinic into and out of examination rooms, offices, and cystoscopy and urodynamics suites. We carried small notepads in which we jotted *in situ* notes with attention to what participants, patients, and other people working in the clinic did and said (Emerson *et al*. 1995). When possible, we asked participants questions to learn what they oriented to, what they were thinking about, and how they reasoned through their work. Fieldnotes were usually prepared within six hours following each observation session and were written as a straightforward chronological narrative with rich descriptive detail and parenthetical initial analytic comments (Emerson *et al*. 1995).

SN analysed the fieldnotes using qualitative data analysis software (QSR NVivo, Brisbane). Codes were first of a 'housekeeping' style (Lofland and Lofland 1995), grouping fieldnotes by topic – discussions about patients' problems, treatment types, and examinations and testing.

These topics were broken down further to create more finely-grained 'types' of conversation or engagement. 'Housekeeping' codes were then organised into analytic codes, reflecting themes emerging during observation. The bulk of the analysis then took the form of memo writing. 'Housekeeping' or analytic codes were searched for confirming and disconfirming examples of analytic concepts from memos. As the volume of concepts and ideas grew, SN began diagramming the concepts as a 'concept chart' to identify relationships between concepts and themes (Lofland and Lofland 1995: 198).

The fieldwork, notes, and codes were oriented to contribute to a larger research study of moral economies in pelvic floor surgery led by AD, for which SN was also a research assistant, but SN's analysis isolated the importance and use of risk acceptance and botheredness as part of the 'cascades' of practices required for surgical action (Nikoo 2014). AD identified these conditions as particularly relevant to the negotiation of uncertainty and need for justification and extracted empirical examples and insights from SN's thesis and re-framed them somewhat in light of the literature engaged here, which required returning to the coded fieldnotes to capture some newly pertinent details and to identify additional confirming and disconfirming examples in light of the nascent argument. The article was written collaboratively through an exchange of memos and drafts. The University of Calgary Conjoint Health Ethics Research Board approved the research.

Findings

Botheredness

Ms. Cardiff was a 75-year-old woman referred to the clinic for prolapse. Anne, a medical student, performed the initial interview. As described in our fieldnotes:

> Anne confirms Ms. Cardiff's age and asks when she first noticed her prolapse … Ms. Cardiff can't remember exactly when it was, but says her doctor mentioned it to her in 2011, shortly before she moved to the city, and she noticed it herself after that. She says it has since come down to the vaginal opening. Anne asks if it's been getting worse, and Ms. Cardiff says she isn't sure – she pushes it back in and can't tell if it's been changing over time. Anne clarifies the patient pushes it up because it's uncomfortable and asks if it's painful. Ms. Cardiff pauses and says it isn't, it just feels like she's sitting on something.

Steve came out of another patient room and Anne described Ms. Cardiff to him, mentioning her doctor noticed the prolapse in 2011. Steve asked how she's affected by the prolapse; Anne said it makes her uncomfortable, and Steve said, 'Ok, so she does notice it and wasn't just told it's there'. For Steve to take surgical action, Ms. Cardiff should notice her prolapse herself – it must bother her.

However, the surgeons also required botheredness to be attributable to a clinically real anatomical or physiological problem. This seemed to be often easily achieved for prolapse – the surgeon had only to look or touch; sometimes the prolapse might extend beyond the hymen, becoming visible from the outside, other times it was detectable through digital examination or looking with a speculum. In cases of stress incontinence, the equivalent was seeing the patients leak urine. During the initial consultation, this might be achieved by having the patient, with a moderately full bladder, cough while lying in the lithotomy position, during which the surgeons would look for a leak. We also observed a surgeon ask a patient to do jumping jacks to see if she leaked. If a leak could not be produced in clinic, it would be checked for again during urodynamic testing or cystosocopy, generally required pre-surgical tests at this clinic. As Steve was

doing the physical exam of Ms. Cardiff, he commented to Anne, 'it comes all the way down'. The combination of Ms. Cardiff noticing the bulge and Steve's observations during the exam were enough to warrant moving on to a discussion of surgical options and risks.

In another case, a patient reported being bothered, but the surgeon and patient did not have the same view of the clinical cause of the botheredness. Ms. Fowler came to the clinic complaining of constipation and recurrent urinary tract infections (UTIs), which she said her referring doctor thought were related to her prolapse. This was a source of some consternation for the surgeon, Lucy:

> 'So, no prolapse surgery?' Ms. Fowler asks. 'Not unless the bulge sensation is bad enough that you want surgery to fix it', Lucy says. 'Surgery will only address the bulge; it won't help with your other symptoms'. She goes on to say Ms. Fowler's UTIs and constipation seem to be bigger issues ... Ms. Fowler again asks, 'So, the prolapse is not bad enough for surgery?' Lucy says it can be done, but the prolapse is a separate issue from the UTIs and constipation. She says she can do the surgery, but only if Ms. Fowler finds the bulge to be bothersome to justify it.

Insofar as Ms. Fowler connected her UTIs and constipation with her prolapse, it could be said her prolapse was bothersome, but Lucy asked Ms. Fowler to isolate the 'bulge sensation' from the other troubles and, in a sense, made her botheredness subject to negotiation. For Lucy, the clinical reality of prolapse – which here includes not only the extent of the prolapse but also Lucy's knowledge of the relation of prolapse to pelvic floor function – was not the certain cause of Ms. Fowler's botheredness.

When prolapse was quite advanced, surgeons might also impute botheredness:

> Adrienne walked into the room where the patient was already on the examining table with her feet in stirrups, saying, 'So, things are falling out? Can you see them? Feel them?' Ms. Prax is a younger woman, later I learn she is 49 years old, and she says no, not unless she coughs or sneezes. As she pulls back the sheet between the patient's legs, Adrienne says, 'Why did you wait so long?' Ms. Prax says she was able to keep it in for a while, but then when she decided to see someone first she had to wait on her doctor's list and then on Adrienne's list. Adrienne says seeing this makes her sad, that she should have been seen sooner.

Later, Adrienne told AD the patient's uterus was hanging out by 'this much' – holding her thumb and forefinger apart about 3 or 4 inches. Ms. Prax did not talk about her botheredness. As the cystoscopy continued, Adrienne asked questions not to assess botheredness, but to determine how to do surgery: she asked whether Ms. Prax lifted things at home and work, and about her flexibility and if she had had hernias in the past, both of which would suggest weak connective tissue and a higher risk of surgical failure. As the exam continued, Adrienne said, 'so I guess you're thinking about surgery?' Ms. Prax said yes and reported she used a pessary for a while but found it uncomfortable and malodorous.

In addition to clinical reality, additional contingencies of practice might make the report or imputation of botheredness an insufficient (though necessary) condition for surgical action. Ms. Sutherland, in her 40s, was also referred to the clinic for prolapse:

> She says she first noticed the prolapse in January, when she felt a bump. Steve asks if it is painful, if it interferes with her activity. Ms. Sutherland says she feels rubbing. He then asks about her bladder and bowel function, which she says are the same. Ms. Sutherland asks about a discharge she has noticed, Steve says the cervix is probably exposed and secreting.

Steve later described the prolapse to her, referring to a poster on the wall with images of types of prolapse, saying in her case the uterus is coming down and bringing the bladder down with it. Steve then discussed with Ms. Sutherland the options. One option is a pessary, which he said won't 'fix' the prolapse but holds it up, and the 'upside' is it's not surgery. The other option is surgery, and he described two types of surgery, as he did with Ms. Cardiff:

> Steve shows Ms. Sutherland a pessary; she says she's not sure about it. Ms. Sutherland asks if she'd be off work if she had the surgery, Steve says yes, for six weeks. She asks him if surgery is worth it, and Steve says how much the prolapse bothers you is the crucial factor. Ms. Sutherland asks if the prolapse can keep coming down, and 'am I worth surgery?' Steve says it can keep coming down, but again the issue is not the degree of prolapse 'I see', but 'how it affects you'. Ms. Sutherland then begins to ask a few more questions about pessaries, asking for instance if sex is allowed when you're wearing it, Steve says 'totally'. Ms. Sutherland says her prolapse does irritate a bit. Steve says she should think about it and he'll give her information on surgery. Ms. Sutherland then mentions her job to Steve, saying lifting a lot at work makes the prolapse worse. Steve then says, well, that kind of job increases the risk of recurrence after surgery. Steve then suggests Ms. Sutherland see the pessary nurses first, 'just to see', and indicates she's not committed to anything, but she should give it a try.

In Ms. Sutherland's situation, the prolapse seemed physically similar to Ms. Cardiff's: the prolapse descended far enough for Ms. Sutherland to feel 'a bump' and 'rubbing', but not pain, and Steve likewise presented surgery as an option. As the encounter progressed, however, he appeared to steer Ms. Sutherland toward a non-surgical treatment, at least at that stage. As the conversation about pessaries proceeded, Ms. Sutherland added her prolapse 'does irritate a bit' as if to steer Steve back toward surgery. Ms. Sutherland's work involved heavy lifting and she was younger – both of which were understood to increase her likelihood of needing repeat surgery down the road. The clinical reality of her prolapse was not under question, but her botheredness did not alone suffice to result in an offer of surgery.

Risk acceptance

In addition to botheredness, the other necessary condition for surgical actionability established in this clinic was risk acceptance – the patient's confirmation of having understood the risks of surgery and deciding those risks are worth taking. Lucy and Ms. Bear agreed she would have a TVT for urinary incontinence:

> Lucy tells Ms. Bear, '[the TVT] has an 80 to 90% cure rate; if asked subjectively, 90% of patients will say they're cured, and an objective test of pad weight shows 80% don't leak'. She explains how the procedure is done and says, 'the risks are small'. She describes possible bladder perforation during the procedure, calling it a 'bummer'. She says 1–10% develop urgency and 'no one knows why', and six months of medication is usually enough to 'calm the bladder down' in half of those women. She says one in three 'don't pee well', so they have them self-catheterise for two weeks; she says that is her 'limit' before she wants to 'go in and adjust the tape'. She mentions the mesh lawsuits advertised on TV, saying, 'You can't believe American TV'. She says the lawsuits are mostly from prolapse surgery, which has bigger pieces of mesh, and are because of either erosion or the mesh contracting. She says because the TVT is small, 1–2% will feel, or their partners will feel, the tape in the vagina, which can be treated either with oestrogen or by trimming 'the eroded bit of the tape'.

Lucy presented the risks through a detailed list of probabilities but her manner was also reassuring – as when she called the risks small, described bladder perforation as a 'bummer', and noted any resulting urgency can be calmed down by six months of medication. The uncertainty of whether Ms. Bear would experience any of these problems was smoothed over by Lucy's style and no doubt the configuration of the probabilities themselves: high success rates and low complication rates. Here the risks and benefits were presented as in reasonable balance.

Similarly, in Ms. Prax's case, in which the prolapse was clinically rendered as severe, the perceived balance between risks and benefits coloured the tone of risk communication. When Adrienne went through the risks and potential complications of each aspect of the more invasive and complex procedure, Ms. Prax responded by saying, 'it would just be different problems than I have now'. Adrienne said, 'you're a bit stuck, you shouldn't live the way you are'. Here as well the patient was informed of the risks, but the potential benefits of surgery were seen as in reasonable balance against them.

In other cases, routines for assessing the balance of risks and benefits were disrupted. John saw Ms. Michon, a patient seeking surgical treatment for stress incontinence, who had undergone a previous urodynamics test showing she retained urine after peeing.

> John explains to me [SN] a high residual would make her a bad candidate for surgery because, since she is already retaining urine and one of the complications of surgery is difficulty voiding, she would likely be 'catheter dependent' (would have to self-catheterise in order to void her bladder).

So in the consultation, now weeks later, John asked the nurse to measure how much residual urine was in her bladder after she pees, and the ultrasound test showed none. The measurement performed in the clinic did not match the test performed in the urodynamics suite; the testing practices produced conflicting realities of Ms. Michon's bladder:

> John tells Ms. Michon they have two options: They could go ahead with the surgery, though they wouldn't know how safe it is, or they can redo the urodynamic test. He adds it's always possible to have to catheterise after a sling; the real question is for how long after. He says usually one in a hundred women need to catheterise, but in her case, it might be more, but 'we don't know whether it'll be two in a hundred or five in a hundred for you'. He then says the urodynamics test isn't so accurate therefore he expects redoing it will change the decision … He says, 'So you have to make a fundamental decision about whether you're willing to accept the risks associated with the surgery'. After another pause, Ms. Michon says she came today to ask for the surgery and she still wants it. 'Even after everything I've said today?' 'Yeah', she says.

The discrepancy between the test results does not need to be resolved because Ms. Michon decides to accept the risks of surgery.

In other cases the risks were presented not as part of the process of going forward with surgery, but as part of the process of selecting a particular surgery. For instance, Lucy presented the two usual surgical options for prolapse to Ms. Cuthand, a 35-year-old woman:

> Lucy says they can remove the uterus and suture the vagina up 'so it doesn't fall down, like a stocking'. She says a good thing about this option is because it is done vaginally, it has fewer risks, but an 80% success rate. Because she's 'younger than most of my patients and will probably have to come back', Lucy describes a second procedure that uses mesh to

> hold things in place and has a 90% success rate. 'It's a choice; I'd never force one or the other on a patient, but it's worth considering'.

Finally, in some situations surgeons placed special emphasis on the risks of surgery in order to put the brakes on surgical actionability. Ms. Kim was seeing John about whether to go forward with surgery. He had done a physical examination and discussed her options in a previous visit, but a decision had apparently not been made. In the appointment Ms. Kim described a previous surgery that did not go as expected, and asked John:

> what her previous surgeon did to 'botch up' her surgery. He says her procedure was not 'botched up', instead, she experienced complications, which can happen to everyone ... 'I was the talk of the hospital', Ms. Kim says, 'he told me I looked like a mess, and I felt like one. It was not a good experience'. John says, 'I am not denying you had issues with your surgery; you definitely did'.

Ms. Kim saw her previous surgery as 'botched up' – her surgeon made some mistake, and Ms. Kim suffered for it. For John, however, complications are inevitable. They happen at predictable rates – rates knowable through textbooks, research, and experience – and will happen to some patients:

> John says if she wants no risks, he can't offer a surgical treatment – she can use a pessary or try physiotherapy, but surgery is inherently risky. In order to have surgery, he says, she needs to understand and accept, and convince him she understands and accepts, the risks. 'There is no way I will take you for any surgery if you don't accept the risks. All of the risks with this surgery are rare, but they could and do happen'. Ms. Kim says, 'Yeah, I'm scared'.

Accepting the risks, for John, requires Ms. Kim to understand complications as inevitable and recognise something bad might happen to her. The appointment ended without a decision.

Discussion

The power of the formats of botheredness and risk acceptance is their applicability across diverse clinical situations, their negotiability in light of contingencies and uncertainties, and their multiple ports for link-ins to modes of coordination. These examples from pelvic floor surgery reinforce that considerable work goes into making a patient's condition surgically actionable, and heterogeneous elements have to be brought into line for surgery to go forward (Moreira 2001), but botheredness and risk acceptance assure responsibility in doing so.

While moral, these formats are unlike ethical principles because they are modified, not applied, to adapt everyday practice in light of organising impulses; formats of responsibility relate to ethicality rather than Ethics (Latimer and Puig de la Bellacasa 2013). Likewise, these formats are not measures because they are adjustable and unfold situationally. In the case of botheredness, when the need for surgery is more obvious, such as in Ms. Prax's case, it may not be as imperative to elicit and assess botheredness. And both Ms. Cardiff and Ms. Sutherland seemed to present with similar stages of clinically-real prolapse and similar reports of botheredness, but at the single appointments we observed, only one was offered surgery.

The formats therefore function in relation to contingencies and to one another. Contingencies apparent in the cases above include: whether a patient lifts things at work, whether a

patient is likely to live long enough to experience surgical failure, whether a patient has a connective tissue disorder, which tests are most accurate, a patient's experience with prior treatments. The acceptance of risks is not enough to warrant surgery if botheredness and clinical objectivity have not also been established, and the nature of presenting and accepting risks can be adjusted in light of the latter. And in the case of elective surgery, in which the patients do not die from their conditions and surgery introduces new risks, botheredness and risk acceptance are essential to making surgery responsible.

Many contingencies are also uncertainties, in that their implications for surgical action and outcomes are not known. When the tests of Ms. Michon's bladder function conflicted and John could not set one aside and say definitively whether Ms. Michon was at a higher-than-average risk for difficulties voiding, the decision was shifted into Ms. Michon's hands – could she accept a possibility, framed as an uncertain (but low) chance of having to self-catheterise for an unknown period of time afterwards? If so, surgery could be responsibly undertaken. When Lucy could not be sure that the cause of Ms. Fowler's botheredness was her prolapse, she could subject botheredness to re-evaluation: it was negotiable. The formats of botheredness and risk acceptance are especially important in situations of uncertainty, when preferred routines or evidence-based protocols and decision-making tools are insufficient bases for responsible action.

'Risk acceptance' in this site seemed to be handled in ways that are consistent with EBM – through the recitation of research-derived probabilities. But as a format, risk acceptance is a practice-based and capacious entity, allowing for latitude while meeting the demands of justification. It has been noted that the EBM requirement to interpret and engage patients in population-derived probabilities introduces new uncertainty into medical practice (Armstrong 2007, Broom and Adams 2010, Timmermans and Angell 2001). In response, the surgeons we observed invariably inflected the probabilities through their tone and choice of words, in order to give them particular sense: as mere information or perhaps as a warning, as a way of facilitating surgical action or putting the brakes on it. They also sometimes directed patients in the interpretation of statistics, even while always adding the choice was the patient's. Adaptation of EBM principles in practice, as shown here, is not surprising (e.g. Timmermans and Berg 2003), but the particularities and elasticity of these adaptations are more fully explained when recognised as related to possibilities for justification.

These formats make it possible to work through a patient's situation in a way that links the process to larger modes of coordination as per Moreira (2012). The routine process of informing patients of their risks could be seen as consistent with a market ideal, in which patients are understood to be autonomous consumers – an ideal which places patients' 'choices' beyond question as long as they are based in sufficient information and rational assessment. Through the presentation of risks and probability of success, surgeons also align their actions with the ideals of the laboratory: it displays their knowledge of the scientific literature and their commitment to practice that is evidence-based and effective. So too 'informing patients' seems to respond to an imperative of patient involvement and the demands for a non-paternalistic medicine in addition to medico-legal imperatives. When surgeons turn over the question of whether to go forward with surgery to patients – 'it is not what I see, but how much you are bothered', and 'I have laid out the risks of surgery, now it is your choice about whether to undertake it' – patients can be seen as involved in the decision-making. Notably absent was a mode of coordination to support the management of uncertainty through paternalism and non-disclosure (see Calnan 1984, Gordon and Paci 1997).

We also showed that a patient's trouble always had to be plausibly attributable to a condition the surgeon made clinically real, which warrants comment. The surgeons' clinical criteria for leaks and bulges seemed agreed upon and stable during our fieldwork, but decision rules around what counts as clinical data have been shown to vary (Bloor 1976) and might at this

site as well under closer scrutiny. Furthermore, investments in form undoubtedly shape what constitutes clinical reality. Modes of coordination entail specific ways of knowing. Because the TVT made incontinence surgery easier, less invasive, and by some measures safer, its introduction drastically increased 'demand' and how much incontinence surgery health care systems could be expected to fund. In some places in Canada, this prompted a cap on how many TVT procedures could be performed, leading to stringent clinical assessments of leakage and botheredness. In healthcare systems with multiple private payers and fewer constraints on profit-making, however, the development of the TVT and successor device-kits may have resulted in a loosening of the clinical assessment of leakage and bulging, or of patients' botheredness in relation to clinical reality. The 'clinical' too is therefore an object made relevant in medical practice in relation to existing regimes of justification about what healthcare should do and how it functions.

Conclusion

The formats considered here bridge contingency or uncertainty and accepted modes of coordination; they can function in a healthcare system oriented towards the ideals of the forum, the market, or science. Yet the orders of worth and modes of coordination dominant in medicine arguably have quite different implications for physicians' sense of responsibility and when and how patients are treated (see Kaufman 1997). EBM, for instance, can be mobilised for effectiveness or efficiency, which would not always dictate the same treatment – sometimes the more effective surgery takes longer or requires longer hospital stays. We did not observe conflicts between orders of worth as such; it seemed the formats of botheredness and risk acceptance successfully facilitated the coexistence of several versions of medicine, perhaps because elective surgery in particular, carried out in a public healthcare system premised on patients' rights and freedoms, requires justification in terms of all three modes of coordination – efficiency, effectiveness, and involvement. But the recourse to these particular modes of coordination, or perhaps what is necessitated of formats responding to all three modes, may have a cost: insufficient reckoning with the unresolved (unresolvable?) fears and insecurities that accompany a 'decision' to elect for surgery. When does botheredness warrant surgery? Ms. Prax had a severe case of prolapse, but was reluctant to say it bothered her or to pursue medical care. Ms. Sutherland's unanswered question – 'am I worth surgery?' – points to an emotional dimension that is related to perception of botheredness and reasoning about treatment. Ms. Kim's comment, 'Yeah, I'm scared', is arguably an unsurprising response to being asked to accept all possible futures. How does one decide between two different procedures which both have high rates of success? What does 80% versus 90% mean? Or, how can Ms. Michon calculate the risk/benefit ratio of surgery on the basis of a probability, even if small, of having to self-catheterise and for an unknown period of time? The formats are compatible with narrow notions of reason (Hoffmaster and Hooker 2009).

Sometimes surgeons seemed to offer the aid of their own expertise and experience by communicating what they thought was the best course of action, but their qualifications suggested hesitancy to do so: at other times, or in the next moment, they would say, 'it's a choice; I'd never force one or the other on a patient', or 'it's just my opinion'. Current organising impulses of medicine arguably work against efforts surgeons may make to find alternative formats for communicating what they do and do not know, what they themselves may be afraid of, what grounds the patient can have for trusting them. The formats are consistent with the widespread but perhaps nominal emphasis on patient involvement (see Entwistle & Watt 2006), but as technologies of governance they obscure certain affective difficulties of the

encounter (May *et al*. 2006). These affective domains are increasingly recognised as crucial for both patients and surgeons to avoid self-blame when things do not go as planned (Doherty & Saunders 2013), to leave fewer pieces to be picked up by others (Broom and Adams 2010), and to lessen the chances of incidents and accidents (Iedema *et al*. 2009).

Perhaps this is because care is still not an organising impulse in much of medicine (see Mol 2008). It would be certainly be incorrect to posit a deficit of normativity in this healthcare setting (Zuiderent-Jerak 2007) or an absence of concern and creativity on the surgeons' part. The surgeons often saw patients multiple times before pursuing surgery. They talked to patients about how they lived, how their condition affected them, and what kinds of risks they might accept to maintain their own sense of a good life. The surgeons we observed made space for patient experience when they also had to remain accountable to powerful imperatives that downplay uncertainty and emotions altogether. And as Moreira (2001) argues, the range of relevant events and objects is necessarily reduced to make surgery possible. Commitment to any order of worth requires sacrifice of other possible modes of action and relevant objects or persons or emotions. Yet the formats of botheredness and risk acceptance were fully adaptable not only to a register of justification, but to the consultation as engagement in a plan, premised upon 'autonomy, project, choice and enlightened consent' (Thévenot 2011: 53) and 'an individual capable of projecting oneself into the future' (Thévenot 2007: 417). The orientation toward a plan may become a kind of 'tyranny' stifling other kinds of engagement, such as trust, familiarity, and critical questions about the adequacy of existing orders of worth (as per Thévenot 2011). Now, we can turn back to pragmatic sociology and observe as well that it has thus far reduced care to familiar engagement and subsumed it in a domestic order of worth, neither of which are obvious templates for improved surgical consultations.

This analysis reinforces the importance of attending to justification in medical treatment and recognising clinical decisions as simultaneously moral. What happens in medical care will not be fully understood when accounts of the ubiquity of contingency and its management by routines, or of the formation of collective morality in medicine, are separate from those of the ideals or movements driving medical reform. Healthcare providers and patients are continuously generating and adapting formats that allow not just for action, but justifiable action. These formats are not only a matter of representation; they affect who is and is not surgically treated.

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References

Armstrong, D. (2007) Professionalism, indeterminacy and the EBM project, *BioSocieties*, 2, 1, 73–84.

Atkinson, P. (1984) Training for certainty, *Social Science and Medicine*, 19, 9, 949–56.

Berg, M. (1992) The construction of medical disposals: Medical sociology and medical problem solving in clinical practice, *Sociology of Health & Illness*, 14, 2, 151–80.

Berg, M. (1995) Turning a practice into a science: Reconceptualizing medical practice, *Social Studies of Science*, 25, 437–76.

Bloor, M. (1976) Bishop Berkeley and the adenotonsillectomy enigma: An exploration of variation in the social construction of medical disposals, *Sociology*, 10, 1, 43–61.

Boltanski, L. and Thévenot, L. (2006) *On Justification: Economies of Worth* (C. Porter trans). Princeton, NJ: Princeton University Press.

Bosk, C.L. (1979) *Forgive and Remember: Managing Medical Failure*. Chicago: University of Chicago Press.

Broom, A. and Adams, J. (2010) The reconfiguration of expertise in oncology: The practice of prediction and articulation of indeterminacy in medical consultations, *Qualitative Health Research*, 20, 10, 1433–45.

Calnan, M. (1984) Clinical uncertainty: Is it a problem in the doctor–patient relationship? *Sociology of Health & Illness*, 6, 1, 74–84.

Cambrosio, A., Keating, P., Schlich, T. and Weisz, G. (2006) Regulatory objectivity and the generation and management of evidence in medicine, *Social Science and Medicine*, 63, 1, 189–99.

Cassell, J. (1991) *Expected Miracles: Surgeons at Work*. Philadelphia: Temple University Press.

Daston, L. (1995) The moral economy of science, *Osiris*, 10, 1, 2–24.

Dodier, N. (1993) Review article: Action as a combination of 'common worlds', *The Sociological Review*, 41, 3, 556–71.

Dodier, N. (1994) Expert medical decisions in occupational medicine: A sociological analysis of medical judgment, *Sociology of Health & Illness*, 16, 4, 489–514.

Doherty, C. and Saunders, M. (2013) Elective surgical patients' narratives of hospitalization: The co-construction of safety, *Social Science and Medicine*, 98, 1, 29–36.

Dussauge, I., Helgesson, C., Lee, F. and Woolgar, S. (2015) On the omnipresence, diversity, and elusiveness of values in the life sciences and medicine. In Dussauge, I., Helgesson, C. and Lee, F. (eds) *Value Practices in the Life Sciences and Medicine*. Oxford: Oxford University Press.

Ehrenreich, B. and English, D. (1973) *Complaints and Disorders: The Sexual Politics of Sickness*. City University of New York, Feminist Press.

Emerson, R.M., Fretz, R.I. and Shaw, L.L. (1995) *Writing Ethnographic Fieldnotes*. Chicago: Chicago University Press.

Entwistle, V. and Watt, I. (2006) Patient involvement in treatment decision-making: The case for a broader conceptual framework, *Patient Education and Counseling*, 63, 3, 268–78.

Fox, N. (1991) *Social Meaning of Surgery*. Milton Keynes: Open University Press.

Fox, R. (2000) Medical uncertainty revisited. In Albrecht, G., Fitzpatrick, R. and Scrimshaw, S. (eds) *Handbook of Social Studies in Health and Medicine*. London: Sage.

Gordon, D.R. and Paci, E. (1997) Disclosure practices and cultural narratives: Understanding concealment and silence around cancer in Tuscany, Italy, *Social Science and Medicine*, 44, 10, 1433–52.

Halpern, S. (2004) *Lesser Harms: The Morality of Risk in Medical Research*. Chicago: University of Chicago Press.

Harrison, S. (2002) New labour, modernisation, and the medical labour process, *Journal of Social Policy*, 31, 3, 465–85.

Heritage, J. and Maynard, D. (2006) Problems and prospects in the study of physician–patient interaction: 30 years of research, *Annual Review of Sociology*, 32, 351–74.

Hillman, A., Latimer, J. and White, P. (2009) Accessing care: Technology and the management of the clinic. In Schillmeier, M. and Domènech, M. (eds) *New Technologies and Emerging Spaces of Care*. Aldetrshot: Ashgate.

Hoffmaster, B. and Hooker, C. (2009) How experience confronts ethics, *Bioethics*, 23, 4, 214–25.

Iedema, R., Jorm, C. and Lum, M. (2009) Affect is central to patient safety: The horror stories of young anaesthetists, *Social Science and Medicine*, 69, 12, 1750–6.

Kaufman, S.R. (1997) Construction and practice of medical responsibility: Dilemmas and narratives from geriatrics, *Culture, Medicine and Psychiatry*, 21, 1, 1–26.

Lambert, H. (2006) Accounting for EBM: Notions of evidence in medicine, *Social Science and Medicine*, 62, 2633–45.

Latimer, J. and Puig de la Bellacasa, M. (2013) Re-thinking the ethical: Everyday shifts of care in biogerontology. In Priaulx, N. and Wrigley, A. (eds) *Ethics, Law, and Society*. Aldershot: Ashgate.

Lawrence, C. (1985) Incommunicable knowledge: science, technology and the clinical art in Britain 1850–1914, *Journal of Contemporary History*, 20, 4, 503–20.

Lofland, J. and Lofland, L. (1995) Developing Analysis, Ch. 9 in *Analysing Social Settings: A Guide to Qualitative Observations and Analysis*. Belmont: Wadsworth Publishing.

May, C. (2007) The clinical encounter and the problem of context, *Sociology*, 41, 1, 29–45.

May, C., Rapley, T., Moreira, T., Finch, T., *et al.* (2006) Technogovernance: Evidence, subjectivity, and the clinical encounter in primary care medicine, *Social Science and Medicine*, 62, 4, 1022–30.

Mol, A. (2002a) Cutting surgeons, walking patients: Some complexities involved in comparing. In Law, J. and Mol, A. (eds) *Complexities: Social Studies of Knowledge Practices*. Durham: Duke University Press.

Mol, A. (2002b) *The Body Multiple*. Durham: Duke University Press.

Mol, A. (2008) *The Logic of Care: Health and the Problem of Patient Choice*. London: Routledge.

Moreira, T. (2001) Involvement and constraint in a surgical consultation room, *Bulletin Suisse de Linguistique Appliquée*, 74, 1, 13–32.

Moreira, T. (2012) *Transformation of Contemporary Health Care: The Market, the Laboratory, and the Forum*. New York: Routledge.

Mykhalovskiy, E. and Weir, L. (2004) The problem of evidence-based medicine: Directions for social science, *Social Science and Medicine*, 59, 5, 1059–69.

Nikoo, S. (2014) *Decision-making in Practice: Surgical Actionability and Consent in Pelvic Floor Medicine*. Master's thesis, Department of Sociology, University of Calgary, Canada.

Pope, C. (2002) Contingency in everyday surgical work, *Sociology of Health & Illness*, 24, 4, 369–84.

Pope, C. (2003) Resisting evidence: The study of evidence-based medicine as a contemporary social movement, *Health*, 7, 3, 267–82.

Prentice, R. (2012) *Bodies in Formation: An Ethnography of Anatomy and Surgery Education*. Durham: Duke University Press.

Richards, E. (1988) The politics of therapeutic evaluation: The vitamin C and cancer controversy, *Social Studies of Science*, 18, 4, 653–701.

Schlich, T. (2007) The art and science of surgery: Innovation and concepts of medical practice in operative fracture care: 1960s–1970s, *Science, Technology and Human Values*, 32, 1, 65–87.

Silverman, D. (1987) *Communication and Medical Practice: Social Relations in the Clinic*. London: Sage.

Strong, P.M. (1979) *The Ceremonial Order of the Clinic*. London: Routledge & Kegan Paul.

Thévenot, L. (2002) Conventions of co-ordination and the framing of uncertainty. In Fullbrook, E. (ed) *Intersubjectivity in Economics*. London: Routledge.

Thévenot, L. (2006) Convention school. In Beckert, J. and Zafirovski, M. (eds) *International Encyclopedia of Economic Sociology*. London: Routledge.

Thévenot, L. (2007) The plurality of cognitive formats and engagements: Moving between the familiar and the public, *European Journal of Social Theory*, 10, 3, 409–23.

Thévenot, L. (2011) Power and oppression from the perspective of the sociology of engagements: A comparison with Bourdieu's and Dewey's critical approaches to practical activities, *Irish Journal of Sociology*, 19, 1, 35–67.

Timmermans, S. and Angell, A. (2001) Evidence-based medicine, clinical uncertainty, and learning to doctor, *Journal of Health and Social Behavior*, 42, 4, 342–59.

Timmermans, S. and Berg, M. (1997) Standardization in action: Achieving local universality through medical protocols, *Social Studies of Science*, 27, 2, 273–305.

Timmermans, S. and Berg, M. (2003) *The Gold Standard: The Challenge of Evidence-Based Medicine and Standardization in Health Care*. Philadelphia: Temple University Press.

Traynor, Michael (2000) Purity, conversion and the evidence based movements, *Health*, 4, 2, 139–58.

Wagner, P. (1999) After Justification: Repertoires of evaluation and the sociology of modernity, *European Journal of Social Theory*, 2, 3, 341–57.

Waitzkin, H. (1991) *The Politics of Medical Encounters*. New Haven: Yale University Press.

Weisz, G. (2005) From clinical counting to evidence-based medicine. In Jorland, G., Opinel, A. and Weisz, G. (eds) *Body Counts: Medical Quantification in Historical and Sociological Perspective*. Montreal: McGill-Queen's University Press.

Whelan, E. (2009) Negotiating science and experience in medical knowledge: Gynaecologists on endometriosis, *Social Science and Medicine*, 68, 8, 1489–97.

Zetka, J. (2003) *Surgeons and the Scope*. Ithaca: Cornell University Press.

Zola, I.K. (1972) Medicine as an institution of social control, *Sociological Review*, 20, 4, 487–504.

Zuiderent-Jerak, T. (2007) Preventing implementation: Exploring interventions with standardization in healthcare, *Science as Culture*, 16, 3, 311–29.