

3 Representations and realities

Re-positioning documents

In the previous two chapters, we set out an approach to the study of management which comprised an analytic stance and a general formulation of the domain, namely modalities of the common sense construct of management. At several points in that introduction, we were at pains to emphasise how different as an articulation of the ethnomethodological gaze, third person phenomenology is to conventional Sociology. In this chapter, we give a relatively straightforward illustration of that difference in orientation and interest by looking at how the idea of ‘documentary representation’ has been applied in Sociology. We will do so by considering Louis Bucciarelli’s (1994) reflections on engineering pedagogy and textbooks and John Law’s (2011) deconstruction of a social survey. The purpose is not to offer a deep critique of either analysis but rather to put our finger on just how these fairly conventional (at least these days) analyses construe the representations they describe as opposed to own interests.

Having marked the contrast in this way, we use the next chapter to home in on the phenomena we take as the theme of our analysis: senior management’s reasoning about and with documents, schedules, charts, schemas and other depictions of organisational activities. The majority of management work is carried out in, around and through these kinds of ‘management objects’. In our studies, we anchor depictions of the ramified complexities of managerial realities in the details of a range of examples. To paraphrase a term very familiar from elsewhere in Sociology, our focus is on documentary and other methods of order construction. The objects we will use are from the more formal class of ‘inscriptions’ strewn desks and floors, heaped on shelves and arranged in drawers, pinned to walls and stuck on screens – in fact, found everywhere in organisations. They make up one category of ‘the missing masses’ of mundane artefacts (Latour 1992) constituting the materials of managerial life.

Except, of course, they haven’t really been missing. As Matthew Hull’s (2012) extensive review reveals, even if we narrow the scope to bureaucratic or formal documents, the social sciences have had an abiding (if not actually very focused) interest in them as signals, symbols and cyphers of a vast array of features of organisational life. Documents have been studied for how they reflect

organisational form, the distribution of power, organisational culture, and so on. Only recently, Lindsay Prior (2008) exhorted the social science disciplines to shift their interest. Using a phrase for which we have a somewhat nostalgic affection, he urged us to take documents as a topic for analysis rather than a resource.¹ The kind of shift Prior had in mind was away from seeing documents as objects for ‘secondary research’ where, as passive records, they are counted and summarised, and towards addressing what Actor Network Theory (ANT) calls their ‘performativity’. The questions to be asked were about the role particular documents play in the networks of ‘actants’ engaged in organisational or other courses of action. Such a repositioning would force attention to the ways in which documents express or ‘enact’ particular perspectively organised readings or representations rather than simply being information carriers. By deconstructing documents, analysts would be able to demonstrate their role in creating and sustaining generalised metaphysical outlooks, perspectives, or world views attributable to various cultural practices and how these outlooks reinforce the dominant structures of power and authority within the cultures in which they are found.

In a previous discussion (Anderson and Sharrock 2012), we argued at some length that ANT often begins with an interestingly formulated investigative proposition and somehow, step by step, becomes embroiled in needless controversialising. What seems to engender this slide is a predisposition to view social phenomena solely as exemplifying some sociological (and, in the case of representations, often philosophical too) puzzle or contention. As a result, what the phenomenon might be to those immersed in the social context in which it is found becomes displaced by the significance it has for the sociologist. Whilst we applaud Prior’s call for a re-thinking of the sociological possibilities of documents, we do not think he has exorcised this predisposition. Instead, we believe blandly heeding his suggestion is likely to lead, indeed already has led, to much the same strategy of displacement – a displacement of the uses that documents have for participants in the settings to one where the documents are assessed in terms of the sociologist’s interest in the correspondence between representations presented in documents and the realities those documents purportedly represent or surreptitiously insinuate. The point of this chapter is to show this substitution does not involve a legitimate alternation of one point of reference for another, but involves, rather, the elaboration of the sociologists’ interests *at the expense* of those of the participants. In the next, we will set out an alternative way of starting from this re-positioning, one which uses the approach described in the first two chapters.

What engineers don’t learn about engineering

In *Designing Engineers*, Louis Bucciarelli (1994) tells the story of Beth, a young and presumably recent engineering graduate. Beth is attempting to solve an ongoing problem with a desalination plant installed in a Middle Eastern country. Beth herself is at her desk at a US site of the engineering company. She is working under conditions which are not really favourable for getting on with the desalination plant job because she has more than one project on the go at

the same time. She is constantly interrupted and is called upon to move from one to another by the demands of her colleagues and clients. She cannot make up the time she loses to these distractions during the day by working longer hours because of her domestic commitments. The computing resources and data available were not created by her to deal with the task, but have been supplied 'by the field'. This is 'real life' engineering carried out on a serious project (i.e. not a practice or rehearsal one) and is just how any experienced engineer might recognise their working life to be. The trouble is Beth's working life is nothing like the accounts of engineering which Beth will have encountered during her formal training. For Bucciarelli, this means there must be something wrong with engineering schooling. So, Bucciarelli asks, how on earth could Beth learn to operate as a competent practising engineer under conditions like this? It can't be that Beth is unique. Her education has been much the same as other engineers and they too have learned to cope with the fragmentation and messiness of their working lives. The one thing Bucciarelli is sure is wrong about engineering schooling is that it doesn't teach engineers their work will be messy in the way that Beth's work has been shown to be. Beth is having to work in messy circumstances, but on her engineering courses she didn't learn ~~that~~ this is how it would be. In fact, for Bucciarelli, she learned the exact opposite. Engineering texts and curricula provide a picture of engineering at odds with Beth's experience. Bucciarelli's view is that in engineering, trainees aren't taught a realistic idea of their eventual work. Instead, they are taught how to operate in an 'object world' which is very different to the practical reality they are notionally being trained for.

Bucciarelli argues that the way the engineering design process is taught involves presenting engineering work as if it takes place in an 'object world', an abstract environment which includes only the abstract objects with which engineers are concerned and pays no attention to the working relations amongst the engineers doing the work. The object world is a place where everything is neat, tidy and precise, and can be depicted in the terms provided by mathematics and formal diagrams. Bucciarelli asserts this can be shown in the materials, such as textbook imagery, used in the training of engineers. Textbook diagrams like the one shown below, set out a standard schematic (standard to the ways of engineering education, that is) of the end-to-end steps of the design and implementation process.

In Bucciarelli's eyes, this diagram shows what sort of environment 'the object world' of engineering is, one which shows design and implementation as a *neat and tidy*, smoothly continuous and peacefully *deliberative process* (seemingly very different from the harassed, perturbed and impromptu state of Beth's situation). In Bucciarelli's eyes, the textbook diagram is misleading since it projects an image of what engineering work that is not true to its realities. Thus,

We might conclude that design practice is an extremely orderly, rational process in which creative thought can be contained in a single box that yields a conceptual design or designs, which after detailed evaluation and analysis within some more boxes can be given real substance, tested, put into production, and then marketed for the profit and the benefit of all humankind.

(Bucciarelli 1994: 111)

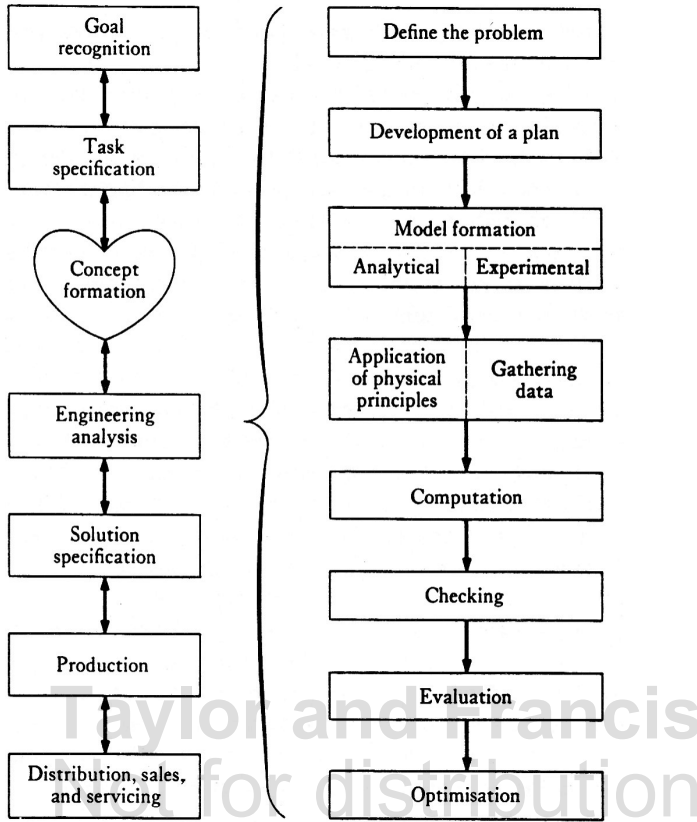


Figure 3.1 The design process (Bucciarelli 1994: 112)

Moreover, the diagram gives the impression that the whole process of design and development is almost an automatic process:

a halting flow, a chaining of cause and effect; it might even be viewed as a conveyor belt, a machine through which the design is moved and acted upon, transformed and embellished at each stop. The only suggestion of possible messiness comes in the looping of some of the lines around the blocks. This indicates *feedback* and makes *designing* an iterative process.

(Bucciarelli 1994: 111; emphasis in original)

Moreover, he continues:

A prerequisite to talk about feedback or interaction is the temporal ordering of the segmented states of design. This entails definition of a clear beginning and end – the top and bottom if the figure in this case. The object as design

process is then closed and bounded. Time, though not explicitly shown, is implied; it starts at the top and extends downward. We might even assume that each block ought to be allotted an equivalent amount of time. The orderly segmenting of process, with the design proceeding down (falling) through this linear sequence of stages, suggests a form of determinism.

(Bucciarelli 1994: 111)

The misleading picture of engineering is supposedly manifest in the details of the diagram. What is allegedly wrong with it is that it depicts the *social reality* of projects in line with the structure of the engineer's object world and not in terms of Bucciarelli's sociological viewpoint. The significance of the diagram is set by its ontological implications.

Bucciarelli picks out three ways in which we are potentially misled.

Time: The diagram is not explicit about time though time is implied by the serial organisation of the process boxes. The worry seems to be that the diagram's normative structures, for example, standardised measures of time, are not specified. The diagram gives no way to set our expectations about the length of steps in the process. If readers are not told how long the respective steps are, won't they nonetheless default to supplying timings to the diagram for themselves and thus tend to assume that elapsed time (however measured) for each stage or box must be the same? Such an assumption would 'fill in' the normative gap. The trouble is that making that assumption would be at odds with what all engineers know about the process the diagram depicts. For example, it would imply that project scale and complexity have no effects on the pacing of the process and hence not only can the design of a drone and the Dreamliner be depicted in the same general form, but each step in any development process must take the same amount of time. We think it is Bucciarelli, not the diagram that is doing the misleading here – there being no reason to think that the temporal features of the diagram relate to fixed periods of time. Assuming that each stage in the process takes the same time would be as foolish as taking the scale conventions of a spatial map to apply to the walls of houses shown in the map just as they do to the distances between topological features and the lengths of paths. As Roy Turner once pointed out, it would be naïve to imagine that an icon on a map implied the walls of suburban houses were 22 feet thick. It is not a cartographical convention that all features on a map are drawn to the same scale. Many do not apply to the legends that picture the conventions of the map. Readers of maps and engineering diagrams – perhaps even engineering trainees – know this, and it would be at least as (we think more) reasonable to assume that the absence of time-scales indicates that the diagram carries no implications about the time a given step in an engineering design process takes.

Structure: Bucciarelli complains 'the only suggestion of possible messiness' seems to come with the 'looping of some lines around the blocks'

(1994: 111). Somewhat grudgingly, this is accepted as identifying two crucial and emphasised features of the design process; iteration and feedback. Both can be seen in the diagram, but simple illustration of a possibility is not enough for Bucciarelli. He sees the comparative thinness of the lines making the loops as downplaying their importance. Moreover, the inconsistency between the presence of iteration and the implication that each block might be given the same amount of time is disregarded by Bucciarelli. Since iteration is a repetitive process, the loops show only the presence of iterations and nothing of the number of iterations there might be, nor of the clock-time any single iteration might take.

Determinism: The diagram expresses a regimented order to design tasks. Bucciarelli prefers to read this as portraying those working through the process as being compelled to follow the steps as laid out. But, if we see the diagram as a general schematic designed to have as wide an application as possible then it could equally be said to identify an extensive, if not comprehensive, range of *engineering* activities that may be involved in any engineering project and differentiated into separate phases in some of them. The sequencing might then illustrate dependency not control. Being able to start on a given kind of task might be dependent upon having already begun or even completed a prior task. The succession of tasks and their dependency may reside in the kinds of tasks they are. For example, the ability to carry out some tasks may depend upon having something to work with. Testing prototypes is dependent upon the availability of prototypes to be tested. The work of running paper through a photocopier to determine the rate of failure for that type of machine and the quality of the images being produced cannot begin until prototype machines have been produced. Rather than intimating any kind of determinism, the diagram could be seen as an aid to decision making. It offers a categorisation of the kinds of activities which need to be planned for in carrying through a design project. It acts as an aid against overlooking the need to provide for what will, at some point, become a necessary activity, and may suggest answers as to where in the sequence that might be placed. At what point, for example, will it be necessary to start producing prototypes if testing operations are to start on time? Answering that question presupposes answering another question, namely what other design tasks will need to be completed before prototype construction can start?

For us, what Bucciarelli see as inadequate and hence misleading features of the process diagram could just as easily be described as the sort of characteristics a general introductory text commonly show, and should be understood as offering a (comparatively) simple and abstract characterisation of the main constituents of the standard design process. Since it wasn't offered as a sociological description of the concrete social organisation of complex projects, why should we expect it to give an adequate description in those terms? This is what we mean by the

substitution effect. Actually, though, it goes much deeper. In a later discussion, Bucciarelli and Kroes (2014) argue not only do descriptions of engineering processes give a false view of what Engineering is like, but, as we have already noted, also that the whole curriculum which trainee engineers follow constantly reinforces a particular view of Engineering and engineering practice. This view depicts Engineering as a body of

discipline specific ways of modeling [*sic*] a product's behaviour, with special methods developed for problem solving and established notions about what constitutes a robust solution, with their own body of codes for use in what constitutes a robust solution, with their own body of codes for use in design, with their own forms of prototypical hardware and supplier's catalogues – all the resources an engineer has to call upon in practice – to constitute what we label an object world.

(Bucciarelli and Kroes 2014: 188)

Such a view does not offer students

a realistic picture of engineering practice – in particular with regard to the role of social features and social values. These values enter engineering practice because engineering work nowadays requires ongoing teamwork – a mode in which engineers with different disciplinary backgrounds, responsibilities and interests (from different object worlds) – must work together. This gives engineering work a social dimension because negotiations between engineers then becomes an unavoidable aspect of their work.

(Bucciarelli and Kroes 2014: 190)

On Bucciarelli and Kroes' rendering, then, what the engineering object world expresses is the false view that Engineering is an instrumental, rational, not to say ratiocinative, convergent enterprise; when looked at 'sociologically', any engineering effort is essentially a locally contexted negotiation featuring compromise across an array of multi-valued, multi-cultural and multi-faceted perspectives. The importance that Bucciarelli attaches to the diagram is as an articulation of an erroneous metaphysics.

Given what we have just said, we should not be surprised at the way actual learning materials themselves are viewed. For example, Bucciarelli and Kroes cite this from a textbook:

The main objective of a basic mechanics course should be to develop in the engineering student the ability to analyse a given problem in a simple and logical manner and to apply to its solutions a few fundamental and well-understood principles.

(Beer et al. 2006: xiii, quoted in Bucciarelli and Kroes 2014: 191)

The interpretation Bucciarelli and Kroes give of this statement is that:

The mechanics problem is given – not to be formulated by the student; it demands a simple and logical analysis – not a conjectural, inferential thinking up and about; and it is to be solved using a few fundamental and well-understood principles – not trying several, alternative, perhaps conflicting approaches and perspectives. The working life of an engineering student, hence graduate, from this perspective is neat, well posed, deductive, and principled.

(Bucciarelli and Kroes 2014: 191–192)

Once again, substitution is at work. That the word ‘basic’ might be key is overlooked, with basic considerations often being uncomplicated versions of advanced ones, along with the possibility that being basic is an important part of its design as a text for beginners. Rather than taking the text on its own terms, Bucciarelli and Kroes are more interested in extrapolating from it toward what they see as a general mind set, one which defined by ‘object world thinking’ or an ‘engineering mentality’.

Unlike novels, textbooks are not generally designed to be read from beginning to end. Rather they are to be used piecemeal, perhaps in conjunction with taught courses. As a consequence, they embody the underlying idea of an orderly learning progression. Dependencies can be assumed in the sequencing of learning; there are things which one learns first (which is what ‘basic’ perhaps intends) and other things which one learns later. A Mechanics textbook is unlikely to claim it shows students how to solve tough, unsolved, multi-dimensional engineering problems right from the start. Instead, its expressed purpose is to enable students to see connections between Mechanics and Engineering (and assess their own grasp on these simplified matters by tackling interesting though simple problems). ‘Time’, ‘timing’ and ‘timeliness’ are not elements in the organisation of teaching and learning that Bucciarelli and Kroes seem to think relevant to construing teaching materials.

We don’t say that texts don’t portray Engineering as a neat and orderly process. But, for us, this is part of their ostensible purpose as an aide to training. Our question would be not about the sociological implications of the ontologies we can see in them, but how they have been designed to enable *students* (which is ~~whom~~ its intended audience ~~is~~) to learn to operate some previously unfamiliar tools of the trade, among which, presumably, are some principles and some of the mathematics of Mechanics. On this view, much of what is presented in the texts is about what can be done in and with Mechanics. What is being learned under the title of ‘problem solving’ is how to use Mechanics to work out solutions to calculable problems. This is not about how to generate and solve complex engineering problems, but more how to use Mechanics to solve the kind of problems which can routinely be solved by calculation. What is being learned is to do for yourself what those competent in Mechanics can already do.

The worry sociologists like Bucciarelli and Kroes have is not that the Engineering profession is in general crisis because no one knows how to organise

large projects or deliver them on time and to budget as a result of their having been trained to think of Engineering in a way which is at odds with the way Engineering really is. Rather, it is that although engineers obviously can and do manage these things (i.e. a proportion of engineering projects get completed), their education has given them a false and thus inappropriate 'model' of Engineering, one that has somehow had to be unlearned and replaced by a viewpoint in which Engineering is a socially organised practice (which, in Beth's case, seems to mean that tasks are worked on in fragmented ways). For us, there seem three pretty obvious responses to this concern:

- 1 Perhaps what Bucciarelli and Kroes have in mind is what most professions call the accumulation of experience and so does not take place during university training but is acquired afterwards in and through engaging in real world engineering.
- 2 Alternatively, perhaps it does take place during training, for an educational process can be instructive about many matters that are not specifically taught. There is much which is taken in *along with* what is specifically taught. So, perhaps there are opportunities within and alongside the training process to gain these understandings.
- 3 Or again, perhaps acquiring the skills, competences and understandings required happens at innumerable junctures in the training process rather than by undertaking specific learning tasks at specific points. In that sense, engineers might learn these things everywhere and nowhere.

There is also a fourth possibility. Perhaps Bucciarelli and Kroes are simply looking in the wrong place. The 'turn to the social' in much professional education has often involved inserting Sociology into courses in Medicine, Engineering, Accountancy, Architecture and so on. These interjections have by no means been universally welcomed or successful. Certainly, there is no evidence that knowing about the sociology of accountancy makes anyone any more competent in the practice of accountancy or, in the case of Engineering, being taught about social institutions, social groups, cultures, identities, norms and values (and thereby about the negotiated character of engineering projects) makes anyone any more capable as a member of an engineering project team.² Bucciarelli and Kroes presume that if something is not being taught in so many words, it cannot be being learned. But engineers must have learned some things they weren't taught in so many words, for, as Bucciarelli and Kroes argue, those words are kept out of training materials so as to perpetuate the illusion that engineering work is done under 'object world' conditions. Perhaps it is that, whatever Bucciarelli and Kroes think should be taught, is actually being learnt in and through all the other parts of the student's non-engineering ordinary life, as well, of course, through engaging in group exercises, personal projects, assignments, reading the newspaper and the like. This leads us to the suggestion that perhaps the object world of Engineering is not as hermetically sealed as we are being led to believe. The claim that it is begs the question of how over several years in the classroom, at

the lab bench, using textbooks, solving problems and undertaking projects engineering students actually do learn how 'to engineer'. Rather than asking about the metaphysics of engineering education, this question focuses on the actualities of learning to be an engineer.

The metaphysics of surveys

John Law is not as puzzled as Bucciarelli and Kroes, but he is similarly impressed by the idea that representations (mis)represent an essentially untidy social reality as if it were a neat and tidy one. He knows how people acquire their 'object worlds' and other conceptual frameworks. These are conveyed in and reinforced by ordinary, routine activities – what Law calls 'practices'. This acquisition and reinforcement is mostly done by stealth. In the nations of the developed 'North', the dominant conceptual framework is a 'one world metaphysics' associated with the natural and mathematical sciences. The ways we find out about the social, physical and natural worlds around us through our participation in everyday affairs all reinforce this one world metaphysics. On Law's estimation, we are being inveigled – by diffuse effects – into thinking that this one world metaphysics is mandatory.

Take a publication as pedestrian as the *Eurobarometer*, a bi-annual report devoted to surveys of opinion among citizens of EU member states (Law 2011). Each report deals with a distinct theme or topic. Law asks us to look at one report on attitudes to farm animal welfare in different parts of Europe. In it we find statements such as '58% of EU citizens want to be better informed about farming conditions.' The map given with this statement shows how the 58% is distributed among the member states. Through this data, Law says, 'We are being told explicitly about how people think, and about country differences' (2011: 8).

That much seems fairly obvious. But now comes the critical shift: 'There is also a bunch of hidden assumptions embedded in these results and in the survey more generally, and it is these that are interesting in the present context' (Law 2011: 8)

We've used the word 'inveigled' advisedly, for Law worries that these 'hidden' assumptions are being passed off on the readers of the *Eurobarometer*. The idea seems to be that if the reliance on these assumptions in the interviewing were pointed out, people might then question, even reject, the 'one world' assumption along with (presumably) the whole business of social surveying.

For Law, it is not what the survey reports about concern for farm animal well-being that is of any significance to his analysis. What matters is only that the assumptions surreptitiously reproduce through communication the standard 'one world' conception of reality. This is the same substitution of sociological import for concern about the ostensible uses of the document that we saw with Bucciarelli and Engineering education.

So, just what are these 'hidden' assumptions about the how the interviewing was done which Law derives from the published report of the interviewing results?

It's being assumed, one, that the person speaks an *appropriate national language*; its being assumed, two, that she knows what an *interview* is (and please don't make the mistake of thinking that this is self-evident. The 'interviewee' is a twentieth century invention); its being assumed, three, that she's *arithmetically competent* (she can, for instance, answer "seven" on a scale from one to ten, with some idea what this might imply); its being assumed, though, that she possesses some more or less *stable attitudes* which influence her behaviour; and its being assumed, five, that those attitudes intersect with information which further influences her behaviour.

(Law 2011: 8–9; emphases in original)

Law admits that his own claim these "assumptions" are 'hidden' seems pretty fatuous since they are blindingly obvious. However, their importance to him lies in the fact these matters are assumed rather than being individually enumerated in the text that assumes them.³ This means that they are, rather, 'at work under the radar'. What they are at work on is reinforcing assumptions readers are to make about the character of the survey respondents talked about in the findings:

This is *how the person is being enacted in the survey*. Let me put that more strongly. It is how the survey person is being *done*. It is what the survey person is made to be. And other kinds of people aren't getting into the survey at all.

(Law 2011: 9; emphases in original)

The bundle of properties identified defines what 'a respondent' is for the survey. We could grant this much and still be nonplussed about the point being made. Where does the one world metaphysics come in?

The answer is: they [the one world metaphysics] are being done by stealth in the survey. They are taking the form of what we might think of as blank realism. In surveys nation states are containers filled with people. So the UK becomes a space with 48 million people in it. Not *terra nullius* but *terra plenus*. The space isn't empty. It is filled with people. But it's the same metaphysics. And here's what's interesting. No one noticed or commented on the fact that the collectivity is being created in this way. Which, surely, is precisely the art of the whole mechanism.

(Law 2011: 9; emphases in original)

Here we have it. Just as (so Law seems to believe) the ontology of the natural sciences is a material world full of individual fundamental particles, the *EuroBarometer* creates an analogous world of social individuals. These individuals are the basic component of the social world. As a result, what to all intents and purposes looks to be a bureaucratic compendium of summarised views and opinions about animal welfare is *actually* a mechanism for reproducing the one

world metaphysics of Western Science as expressed in the territorial possessiveness that is at the core of our political consciousness. Once grafted on in this way, it defines the reality of the political environment in which we live (which is that of populations distributed amongst national territories) as the *only proper way* of organising things.

What is most notable in Law's reflections is the attenuated character of the 'reality' at issue here. The very conception of metaphysics by stealth makes it sound as if what people might take to be novel, obscure, difficult, or unattractive ideas are somehow being smuggled into their conceptual frameworks. This overlooks the rather obvious fact that for Law to extract those assumptions, they have to be recognisable *from the Eurobarometer presentation* in the first place and, indeed, recognisable as 'the same — and therefore unremarkable — assumptions again' (for example, that UK territory is populated is not an assumption specific to the *Eurobarometer*). The 'covert' assumptions are transmuted into the blatantly obvious simply because Law must employ those very assumptions in his reading of his illustrative text and he relies upon his readers to recognise these assumptions about the European Union being a multilingual organisation, interviews as oral transactions done in some national language(s), by persons who have commonplace elementary numerical skills (an assumption which, of course goes unremarked when Law repeats the interview findings in terms of numerical percentages) without Law needing to explain to his readers how he has managed to find these assumptions in his source materials even though they are 'hidden' and 'under the radar'.

That these 'obvious' matters are so is not something established or asserted in addition to reporting that the *Eurobarometer* is a product of multi-national interviewing (of what are, after all, identified as 'citizens' of the EU and its constituent nations), but something which is included in it. These things characteristically go without saying in the sense that they don't need to be announced to be present or to be specified in 'so many words' (one doesn't necessarily have to be told something to understand that it is relevant). Law declares 'No one noticed or commented on the fact that the collectivity is being created in this way' and that is 'what's interesting' about this 'doing of reality'. It is this which 'surely, is precisely the art of the whole mechanism' (2011: 9). It appears that what is being done by stealth, then, is the creation of a trans-European political collection of individuals whose views are set out in the report. The trouble for Law's stealth argument is that the authors of the report are quite clear that this is what they are doing. They state what the objectives and procedures of their report are (in their descriptions of the nature of the *Eurobarometer* as an EU-sponsored operation and in their presentation of the latest round of findings) and make a rather extensive series of comments on the fact that the collectivity – at least, cross-national and national levels of public opinion within the collectivity – are constructed in this way.

Let's be charitable and assume Law's point is not the enunciation of the obvious. What, then, could it be? Mike Lynch describes what Mel Pollner has called 'the ontologically fatal insight' (Lynch 2013, citing Pollner 1987: 88) as follows:

an insight sometimes arrived at in a moment of heady delight, but often as a horrifying realization – that the world we take for granted as an independent environment of action is not what it seems; instead, it is a product of our own constitutive practices and ‘it could be otherwise’.

(Lynch 2013: 449)

Perhaps what Law wants to identify is what he imagines those who read the *Eurobarometer* reports, both the politicians in Brussels and the odd commuter on the bus from Didsbury, will find to be a destabilising revelation, namely that our cultural practices and the way we view the world might have been different – indeed, they have been different in that ‘other people’ have lived on the basis of different assumptions to those ‘we’ live by, with us being, perhaps, entirely oblivious to their assumptions. The trouble is they are the least likely people to read his description and his actual readership will find the suggestion hardly surprising, let alone horrifying. They well enough know that the emergence and dominance of modern natural science was a deeply contingent historical matter. It is not the interests of the readers of the *Eurobarometer*, the politicians in Brussels or even our Didsbury commuter that Law has in mind, but those of his fellow sociologists. What he does is replace what, for the sake of simplicity, we will call the practical relevances of the readers of the survey with sociological ones. In so doing, the phenomena found in the survey report are transformed. It is not the ‘facts’ presented in the findings nor even the one world metaphysical reality which those facts might be said to depict, but the role of practices – the practices of carrying out and reporting a survey – in constituting that reality which he wants us to attend to. The point he is stressing is not that realities could have been different, but that practices are. And if practices embed, convey and instil realities then won’t the empirical existence of multiple practices mean the existence of multiple realities? This is the ontological horror Law is waving in front of us. If we accept that distinct multiple practices produce distinct multiple realities, how do we choose among practices and their realities? Since, as a society we don’t have any sort of open and democratic procedure for schema selection, the chaos of relativism must only be being held at bay by the stealthy enforcement of a uniform acceptance of the one world metaphysics. It turns out Law isn’t really interested in the *Eurobarometer* at all. What he is interested in is the possibility of metaphysical implosion and where that might leave the politics of knowledge in science and, by extension, Sociology as well.⁴

Conclusion

The line we have taken in this chapter has been deliberately simple. When sociologists take an interest in representations of any kind, what happens is the substitution of extrinsic sociological interests for the intrinsic concerns of users of those representations. We have shown how this often leads to sociological critique by deconstruction wherein the ‘immediate’, ‘surface’, or ‘obvious’ characteristics of the representation are interpreted as conveying subliminal,

hidden, or otherwise covert systems of 'social' meanings. For the sociologist, the purpose seems revelatory; to show that users, Bucciarelli's engineers, or Law's readers of the survey 'know not what they do'. They think they are learning the basics of Engineering or the opinions of a sample of people across Europe, whereas 'in reality' they are acquiring a particular 'object world' or a 'one world metaphysics'.

This substitution effect is one of the features (or even symptoms) of deep problems in Sociology's mode of reasoning, especially about other modes of reasoning. We are well aware we have done no more than touch on the most superficial aspects of these problems and have by no means given sufficient space and consideration to all the ramifying entanglements in this conceptual and methodological mare's nest. We have used the substitution effect as a way of marking difference (especially with respect to the casual treatment given to the use that documents have for their users), no more. We have no space here to do otherwise. In future discussions, though, we intend to return to the broader, more fundamental questions. For the moment, our marking of difference does all the work we need it to do. We have shown what we mean by it, that's all. We now need to show what we mean by doing things differently.

Notes

- 1 The length of tooth of this phrase (it was the theme around which Don Zimmerman and Mel Pollner arranged their (1971) introduction to ethnomethodology's sociological reasoning) hints at just how late on the scene Prior was. As we will shortly see, the interest in documents he was pressing on colleagues was already well under way in some parts of the sociological world.
- 2 The history of 'sociological studies of science and technology' suggests that applying such ideas causes confusion and conflict amongst social scientists.
- 3 'Assumed' in this case does not mean 'absent from the text' but, rather, manifested in the text without being specified as assumptions – for example, the assumption that people are at least basically numerate is manifested in the fact that they are being asked to give numerical rankings on a scale.
- 4 There is a much tighter double bind here, of which Law is well aware (Law 2004). Law takes the work of Anne Marie Mohl to show multiple practices across disciplines produce multiple realities. This is the original stimulus for the *Eurobarometer* example. But so do multiple practices within disciplines. Steve Woolgar (1998) once called reflexivity a 'methodological horror' to which, since it could not be resisted, Science and Sociology must succumb. Law's worry is that the problem of multiple ontologies looks like the reincarnation of reflexivity. As with Woolgar, it seems for him all we can do is acquiesce.

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