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On qualculation, agency, and otherness

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Abstract.

In this paper we explore the boundary between calculative and noncalculative action by arguing that these are separate but mutually constitutive. By using the notion of qualculation, a neologism coined by Cochoy, we redefine the notion of calculation to include judgment. We then argue that making qualculability is not trivial: that it takes effort to create calculation and judgment. But it also takes effort to consider nonqualculability. Two strategies for achieving nonqualculability are identified, those of rarefaction and proliferation. Rarefaction, illustrated by the cases of Quaker worship and selfless love or *agapè*, works by withdrawing all qualculative resources. Conversely, proliferation, illustrated by the attribution of cause and responsibility after railway accidents, and by a major television fund-raiser, the 'Téléthon', works to impede calculation by an overload of qualculative resources.

Introduction

How should we think about agency? How should we think about different forms of agency? How, in particular, should we think of the difference between action that appears to be rational and that which does not? Social science has wrestled with this last issue since its inception. Sometimes the distinction has been treated as a boundary, tout court. It has been assumed that rational and irrational are different in kind, irreconcilably opposed to one another, and mutually exclusive. Usually, however, the approach has been more nuanced. For instance, as is well known, Weber explored what he took to be the elective affinity between ascetic Protestantism and the spirit of capitalism, and more generally distinguished four ideal types of action (1930; 1978). This classification, though more complex and contingent, nevertheless distinguishes action that is rational and self-reflexive from its more mechanical, nonrational variants. And his general approach if not its specifics has been picked up, developed, and reworked by most of the more recent writers on agency (for instance, Giddens, 1984). Thus agency is typically seen to be complex in practice, but reflexivity is taken to be central to rational action. In this approach, which is compatible with many versions of the philosophy of the subject including those of Kant and Bergson, agency is treated as the capacity to resist causality and initiate new lines of action. This means that, however sophisticated and nuanced it may be, there is still a distinction in kind between rational and nonrational action. The two belong to two distinct universes—even if they combine in practice to produce a range of hybrid forms.

There are, however, other ways of imagining agency. For instance, Dupuy (1997) shows that *zweckrational* action implies the definition of goals and issues to do with reciprocity that belong to other forms of action. Foucault can be read as insisting on the simultaneously dependent and mutually exclusive character of

reason and nonreason¹. Again, it has often been argued that rational evaluation is inextricably linked with emotions. In this way of thinking the distinction between rational and irrational is not one of kind. Any division between the two is likely to be complex, contingent, variable, semipermeable, and perhaps, like the infamous coastline of Brittany, fractal like and filled with outliers and mutual inclusions. And such, indeed, is our position.

In what follows we develop our argument by talking not about rationality but about calculation. However, the arguments are similar in form. Some authors assume that calculation is a universal characteristic of human action. Others take it that both calculation and noncalculation can be found in all human conduct. We try to bypass these debates, and in particular the idea that calculation and noncalculation belong to different universes. Instead, like Foucault we suggest that they are mutually constitutive: that all calculation builds itself with and against noncalculation—and vice versa. We also argue, as a part of this, that calculation and noncalculation reside not primarily within human subjects but in material arrangements, systems of measurement, and methods of displacement—or their absence. This in turn means that calculation and noncalculation come in indefinitely many variants. This approach suggests that they are Other to each other—indeed, separate but also mutually implicated. The implication is that if there is a boundary between them then it is complex. Straightforward geographical metaphors will not work: more complex versions of spatiality are needed.

We start by redefining the notion of calculation, broadening it to include categories of action such as judgment with which it is usually contrasted. To catch this broadened sense of calculation we follow Cochoy and talk of *qualculation*. We argue that making qualculabilities is not trivial: that it takes material and social effort to produce spatial practices appropriate to qualculation. Then we turn to the main topic of our paper: the business of *making incalculabilities*. Incalculabilities, we argue, are enacted just as much as calculabilities.² Like calculabilities, we suggest that they are specific in character. And then we argue that they are created in two contrasting strategies which we call *rarefaction* and *proliferation*. By using the cases of the Quaker meeting for worship, and *agapè* (selfless action on the basis of unconditional love), we suggest that rarefaction works by removing the resources or relations needed for calculability. Then, with the help of two further examples (the attribution of cause and responsibility after railway accidents, and a major television fund-raiser, the 'Téléthon'), we argue that proliferation works the other way round to impede calculation by providing an overload of calculative resources.

Calculation

John Law (JL) So you've been writing about markets and calculation. Can you fill us in?

Michael Callon (MC) If we look at the etymology, then this tends to blur the divide between calculation and 'mere judgment', between accounting and estimating. As Benveniste has shown, in Latin computing and judging (or estimating) are closely related. *Putare*, the root of the term 'computing', refers to a literal process of detaching (cutting) and reattaching that leads to a result. In the phrase '*rationem ducere*', *ducere* (the root of the word 'judgment') means to lead (or conduct) a count, or to arrive at a conclusion having reviewed the elements of the problem.

JL This helps?

MC Well, I hope so, because I want to say that calculation can be understood as a three-stage process. This, at any rate, is what Fabian Muniesa and I have tried to argue.³ First, the relevant entities are sorted out, detached, and displayed within a single space. Note that the space may come in a wide variety of forms or shapes: a sheet of paper, a spreadsheet, a supermarket shelf, or a court of law—all of these and many more are possibilities. Second, those entities are manipulated and transformed. Relations are created between them, again in a range of forms and shapes: movements up and down lines; from one place to another; scrolling; pushing a trolley; summing up the evidence. And, third, a result is extracted. A new entity is produced. A ranking, a sum, a decision. A judgment. A calculation. And this new entity corresponds precisely to—is nothing other than—the relations and manipulations that have been performed along the way.

JL I've got some reservations about this. For instance, do we really want to call all versions of this process 'calculation'? This is a term that implies enumeration, and it carries a sizable quantitative baggage. But if I let that pass then I guess what you're going to say is that in this way we can think in the same terms about (quantitative) calculations and (qualitative) judgments. That they are all about arraying and manipulating entities in a space in order to achieve an outcome, a conclusion.

MC Yes. Precisely so. Quantitatively, in one way or another. Qualitatively, again in one way or another. Or anything in between. This is the important point. And since you're worried about the terminology perhaps I should mention that Cochoy talks of 'qualculation'.⁴ By this he means calculation, whether arithmetical in form or not, the manipulation of objects within a single spatiotemporal frame—which can be done in indefinitely many ways.

JL I tend to think we have introduced too many neologisms into social theory, but this is one that I like. It nicely collapses the distinction between the quantitative and the qualitative. So let's thank Cochoy and make use of his term. Though I'd add, and this surely is important, that the objects that end up in a spatiotemporal frame don't preexist it in that form. They are also being made by it, made into a shape that fits.

MC Yes. Precisely so. Qualculation implies qualification. Things have to qualify before they can enter a process of qualculation. More work. Though, to press the point again, this can be—this is—done in an endless number of ways. With an endless range of mechanisms and devices.

JL Yes. And this is an STS [science, technology, and society] point. It is necessary to attend to the materialities, the role of material devices. Qualculation is impossible without material arrangements: paper and pencil; the benches in a court of law; a system for tallying arrivals and departures; a supermarket. Qualculation is a material process, a material set of practices. But all this makes me want to raise a question about a term you've smuggled in along the way.

MC Which is?

JL The idea of the *spatiotemporal frame*. In your paper with Muniesa you write:

The entities taken into consideration are sorted out: they are detached and displayed in a single space (and here we have to make the effort of imagining all the possible forms of this single space: from a sheet of paper to a caddy at the supermarket, from a simple slate to the input band of a Turing machine)."⁵

But what *is* it to display in a single space, in a single spatiotemporal frame? What does this mean? I can see that you are imagining all sorts of possibilities. But I want to add

that the notion of spatiality itself deserves—and has been the object of—considerable theorising. This isn't the moment to go into it, but it doesn't take too much effort of imagination to think, for example, of versions of the spatial—and therefore of spatial relations, ranking, and all the rest that have little to do with geographical space.

MC For instance?

JL Well, for instance, there are network comparabilities, similarities, and differences. In these, comparability would be an effect of configurational stability. Or fluid forms, where comparabilities would become possible as a consequence of slowly changing configurations. Or fire forms, where they might have to do with productive oscillations between absence and presence. And no doubt there are endless others.

MC You've lost me.

JL Well, I'm referring to 'after-ANT' [actor-network theory] work on the character of objects and sociotechnical topologies.⁶ But the specifics don't matter. What is important is that we make sure that qualculation does not get itself attached to a narrow understanding of space-time framing. The character of comparability, and manipulability, this needs to be left open. At a guess, for instance, judgment is often distributed across time and geographical space. It flows, unfolds, and reflects local specificities. It cannot be drawn together at a single commonsense space and time.

MC No problem. No doubt there are different spatial and temporal versions of qualculation. Common to them all, however, is that they take effort. Supermarkets, legal systems, and pocket calculators don't grow on trees. They take time and money to organise. Time, money, and effort. The elements on which they work need to be disentangled from wherever they were before. From whatever form it was that they took. There is nothing natural about qualculation. But then neither is there anything natural about the absence of qualculation. Making and unmaking relations—both of these take effort.

JL Okay, so let me summarise. With Muniesa you've created a broader definition of calculation—or qualculation. And now the most important boundary is no longer between judgment and calculation, but between arrangements that allow qualculation and those that make it impossible.

MC Yes. But let me add one last thought before we move on. Because if we think in this way then we also have a way of thinking about the *power* of qualculation and nonqualculation. The power of a qualculation depends on the number of entities that can be added to a list, to the number of relations between those entities, and the quality of the tools for classifying, manipulating, and ranking them.

JL Well, perhaps. I see the point of what you're saying. But it implies—hah—the capacity to count the number of entities and relations, and to rank them. That is, it implies a material apparatus of its own. Which is fine, is quite consistent with what you're arguing, but could no doubt be done in endless different ways!

MC Point taken. There is no view from nowhere. That's implicit in the commitment to materiality. But I made the argument because I want to say that it applies to nonqualculation as well. Methods of nonqualculation may also be more or less powerful. Be more or less effective. There is, as Luc Boltanski and Laurent Thévenot noted, 'grandeur' in noncalculation.⁷

JL Time to turn to noncalculation, then. To nonqualculation. Time to turn to an example.

Quaker worship

MC So tell me about Quaker worship.

JL Okay. But the point I need to make isn't specific to Quakerism. It's about certain kinds of sacred spaces. Anthropologists have written about places that are set aside to resist calculation as a part of religious experience. Here's a contemporary version taken from recent anthropological study of contemporary British paganism:

·For magicians, ritual is a space of resistance to the rationalism of the wider culture. Rituals are viewed as a space where a magician gains contact with the otherworld, a special 'place between the worlds', where magic transformations are said to occur."⁸

MC So you're saying we're interested in spaces of resistance?

JL That's a way of putting it. Resistance to calculation.

MC So what do the Quakers do?

JL Are you asking what it is they are trying to achieve, or how they go about enacting it?

MC Both. We need to know both why and how they resist 'the rationalism of the wider culture'.

JL Okay. On what they are trying to achieve. The answer is a loss of selfhood in a collective, a group, where mostly there is silence (the Quakers call this 'silent ministry') but sometimes someone speaks (this is 'spoken ministry'). Neither is about the actions of the people involved. Rather it is the Holy Spirit at work. The Holy Spirit only acts when you, the worshipper, do not act yourself, but let things go including your own desires, thoughts, reflections about the daily round. The advice is that if you find that you are thinking about daily things, or worrying about them, or deciding about them, then this is unlikely to be the Holy Spirit at work.

MC This sounds like hard work. The act of letting go is tough. It needs preparation. That's what Émilie Gomart and Antoine Hennion suggest in their work on the passions of drug users and musical amateurs.⁹

JL Yes. And Ingunn Moser has talked about this, too, in her work on disability where a discourse about what is 'lacking' for disabled people is in conflict with another discourse to do with letting go: for instance, in extreme sports such as downhill skiing or sky-diving.¹⁰ Like Gomart and Hennion, she shows that letting go is hard work. And her work also suggests that this is an issue that our contemporary discourses handle singularly badly: letting go as an act that is both active and passive. Except that I guess putting it that way, to talk of 'active' and 'passive', recreates the difficulty by reproducing the dualism. Perhaps we need to think about the old Christian term 'passion'.

MC Yes. This is largely lost to general use in its mediaeval meaning, except when we talk about 'the passion of Jesus on the Cross'. Passion, pain. Here it connotes a mixture of suffering (the original linguistic root of the term in Latin), of being acted upon or passive, *and* an emotion that seizes the person. This may be religious, or, perhaps more commonly in the contemporary Western world, in relation to romantic love, or some kind of other commitment. We are still (just about) able to say: 'I am passionate about my lover, about dance, or about socialism'. But the root point is that letting go is tough. Being taken over is tough. Being passionate is difficult.

JL Being passionate is difficult because it is to be both active and to be used. The Quakers are quite explicit about this:

·Each one of us must come expecting not only to receive but to be used."¹¹

'Used' doesn't sound good in most contemporary discourses. From managerialism through the 'third way' to feminism, these all tell us that passivity is a bad, that one should seek out active subject and agent positions. But passion is about *both* passivity and activity. And as a part of this it is about breaking down the divisions between the self and the Other. In Quakerism, for instance, between the self and the Holy Spirit.

MC You started off by talking about the *resistance* of a sacred space. Then you talked about the work involved in this, about how it's tough. I thought you were going to talk about the work of disentanglement, but now you sound as if you're also talking about entanglement. It sounds as if you're saying that passion is active-passive entanglement with other forces for instance, the Holy Spirit.

JL Yes. That's right. I don't see this too clearly, but I think disentanglement *implies* entanglement. They make each other and at the same time they are Other to each other. Perhaps you imply this in your own writing when you talk about overflowing. A boundary, so to speak, implies the cross-boundary work of making that boundary and putting things on the other side which then 'overflow' the division. The normal implies the abnormal. The garden implies the weeds.

MC Okay, but how does this help us to think about noncalculability?

JL It's going to depend on the character of the disentanglements. This is your second question—about how Quakers go about what they are trying to achieve. Your cases of market calculations are disentanglements that secure calculability. But, as we suggested above, there may also be disentanglements that secure uncalculability. And, indeed, though they don't use the language, this quite nicely catches what the Quakers are trying to do. We know from our STS that subjects or subject positions are enacted in heterogeneous relations. As we said earlier, relations are heterogeneous both discursively and materially. Well, the Quakers have a set of material and discursive practices for disentangling from calculability. For losing themselves in the passionate.

MC For instance?

JL Materially, people meet for an hour each Sunday in a simple room. They sit quietly in a circle of chairs. They try to ignore the sounds from outside. They pray silently, or they meditate, or perhaps they read the bible or some other significant text. What they are trying to do is quite active. They are trying to empty their minds of distractions. To become receptive to the workings of the Holy Spirit. Mostly they will sit there silently for the whole hour. That's the silent ministry I mentioned a moment ago. A few will feel moved to speak: that's the spoken ministry. And other people present will reflect on that ministry, sense, as they put it, whether or how it 'speaks to their condition.'

MC That's a nice phrase for the passionate, isn't it? If I've caught the English right, it implies nothing to do with deciding, with calculating, with qualculating. It is an active process of waiting to learn or appreciate.

JL Yes. That's right. And that is what many of the texts, the discursive components of Quakerism, are about. For instance, when you read these you learn that you should never involve yourself in debate in meeting for worship. If ministry speaks to your condition then good. If not, then you should allow it to wash over you, remembering that it may speak to the condition of others. In particular what you shouldn't do is get up and disagree. (Indeed, there are procedures for stopping debates on the rare occasions they do occur. If this happens then an elder, a senior member of the meeting, may rise and call for a period of quiet reflection.) And there are other forms of advice. For instance, it is suggested that when irrelevant thoughts stray into your mind you should not fight these but notice them and then let go of them. So the techniques of disentanglement are both active and passive. But they are all about letting go of the boundaries of the person. Of giving up, for the moment, the possibility of qualculation, of having an opinion, of making a consistent and centred position or argument on one's own behalf. All the Quaker advices point in

the same direction. If the voice of the Spirit is to speak, then the person needs to dissolve himself or herself as a separate calculative being. This is the disentanglement. Entanglement in the noncalculative, the distributed, the uncentred, requires first a disentanglement in the calculative. It is a strategy of *calculative rarefaction*.¹²

Agapè

MC All of this makes me think of agapè.

JL How so?

MC This is a Greek word that comes to us through Christian theology: it refers to the love of God for people. A love that is freely given without thought or expectation of return. A love that is prior.¹³ It isn't Eros, sexual love or desire. It isn't lust for something. It implies the abnegation of personal desire. Of means and ends. It is just love. By extension it is the love not only of God for people, but people for one another. Sometimes people talk about it as 'brotherly love'. Selfless love. Love without aim or ambition. All of this means that it is necessarily Other to calculation.

JL Other to calculation?

MC Yes, for here agapè needs to be distinguished from gift giving even if it is related to it. As you know Bronislaw Malinowski and Marcel Mauss tried to separate gift-giving and market transactions. N Thomas showed that this distinction, if right at a theoretical level, does not mean the existence of separate spheres: the two are always intertwined. They both imply calculation: gift-giving can be understood as a system of reciprocal transactions. In the case of the Kula ring, prestige is attached to particularly noteworthy arm shells and necklaces. It could, indeed, be seen as a system of trading in prestige. The gift may be reciprocal or agonistic; this is one of the reasons why the analysis of gift-giving is so complex. The other reason is that gift giving may also be close to agapè: purely altruistic.¹⁴ Here there is no calculation, no reciprocity, no agonistic trial. Size isn't being measured. Or 'grandeur', greatness. The calculations of self-interest disappear. The boundary between calculation and noncalculation is not between gift-giving and markets; it passes within gift-giving. Gift-giving mixes up, in variable proportions, calculation and noncalculation. That helps us to understand why Mauss's analysis is so fascinating: it shows that gift-giving is a nexus of tensions between two regimes.

JL Okay. But then it's a bit confusing to use the term 'gift' for both.

MC Agreed. But how would this work in English? Perhaps when we talk of noncalculation we shouldn't talk of 'the gift' but 'the present'. It's a play on words of course. Presents make present. They circulate to assure presence. They have nothing to do with returns or counter-gifts. What would a 'counterpresence' be?

JL Well, as we know, the antonym of presence is absence. Logically. It depends on—helps to create—absence.

MC That's right. The reciprocal gift is a poison. It poisons the recipient. Whereas the present is the refusal of absence: simply that. Its Othering.

JL I'll need to think about this. It sounds like a way of being in which Othering swallows up all the other versions of absence. All those versions of absence that might be acknowledged. All those absences that are manifest in presence.¹⁵ It sounds tough again.

MC Yes. The pure gift, the present, that excludes all possibility of return, is only possible within specific and rigorous conditions. The investments that it requires may be considerable. Its every trace must be erased. Any possibility of relating and ranking. Amnesia, Otherness, must be imposed, maintained, guaranteed. The right hand must forget, know nothing about, what the left hand is up to. If this amnesia is interrupted and calculation bursts in then agapè is undone. We are back in the realm of endless calculation (endless because one of the rules of reciprocity is that calculation never stops). Here we need empirical studies. How is amnesia constructed? What kinds of work does it take?

JL Okay. So I think you're saying several things. One is that agapè is not a natural state of being. It takes active *disentanglement* from calculation to create the possibility of agapè. A lot of effort in a process of rarefaction. The resources for calculation have to be taken away. A second is that agapè is its own set of entanglements. If I love my son, or my sister loves me, it is not that we are, so to speak, disentangled from one another. Rather it is that our entanglements refuse to be calculated or made explicit. They've been Othered. But then this makes me wonder about agency. About who or what is acting. On your account, originally it was God, though perhaps he or she is no longer in the picture. But, after the death of God, in agapè it still isn't me that is acting, is it? Because isn't this another case of the passionate? So the Quakers lose selfhood because they set aside calculative entanglements. But something similar is happening with agapè. It is a matter of passion, of suffering, being seized, taken, used. **MC** Okay.

JL But I've got a final point. Because if agapè is Other to calculation, then this makes me think that it is under threat.

MC How so?

JL Because calculation insists on its rights everywhere. You have written about markets, economic logics, and the construction of commercial relations. But of course calculation is linked both etymologically and historically with accountability. There is, I sometimes think, a fetish for accountability, at any rate in the places where I live. I have to be accountable in my job: the courses that I design, my mode of teaching, the effects of my teaching, I am now accountable in all of these in audits that determine how well or otherwise I am doing. But the power of accountability, the making explicit, reaches beyond managerialism. Its rhetoric sails, also, under innumerable radical flags. Justice, it is argued, can only be achieved if powerful groups—teachers, professionals of all kinds—are made accountable. Are made to give accounts. To look both back at what they did, but forward to what they should be doing.

MC Whole libraries of books might be written about this. Indeed, whole libraries of books have been written about it! Michael Power has written about the 'audit society' to index this phenomenon—one which, I respectfully suggest, achieves its highest art form in Anglophone societies. And Theodore Porter has traced the origins of one version of this—that of quantification—to the need for weak professions to account for and justify themselves in a public space. His argument is that where there is little trust between different groups then there is need for a calculative lingua franca.¹⁶ So what you are describing is a context where calculative effects replace trust.

JL But the logic of agapè implies that calculation *cannot* go with trust! It is ruthlessly Other to it. I sense this rather fiercely in my own professional life. I wilt when I have to account for myself. And I don't think this is because I'm a bad teacher. It is because teaching, when I do it well as I think I sometimes do, is outside *any* possibility of accountability. It is a labour of love. And the passion that it is carried in is dried up when I have to account for it.

MC You are a philosophical romantic, my dear colleague!

JL Yes, though I also try to keep it under control by working with rationalist coauthors from time to time. But while I am on the topic...

MC ... I wouldn't want to stand in the way of a grand passion....

JL ... I also think that there is something wrong with the word 'trust'. My intuition is that sociologists tend to use it far too much. When they use phrases such as 'the erosion of trust in a post-foundational era' they are obviously on to something important. But here's the catch. To talk about 'trust' is already to render it discussable, accountable, qualculable. 'Can I trust you?' Or 'I trust you completely'. These are explicit questions or decisions about accountability. Agapè (also a word I concede, so also within discourse) points to something *before* trust. Let me try this out. Agapè is about *pretrust*. Accountability is consistent with (measuring) trust but not with agapè. I fear the auditors will be trying to measure agapè before long, but they haven't got there yet. And neither will they manage because it will, of course, slip between their fingers. They won't ever get there. But they will chase it into the woodwork.

MC Have you finished?

JL Not quite. Because I also want to say that I think there is nice work on agapè in the STS field. I thinking in particular of work on care. People like Ingunn Moser, Jeannette Pols, and Vicky Singleton are all looking, in one way or another, at how health-care systems *care*.¹⁷ Their caring work. And, at least a lot of the time, it slips between the fingers of the system not because it is not being done, but because it can't be measured. So here's my proposition. Caring is outside accountability. Caring is constituted in agapè. It is in pretrust. It is passion-ate. Active—passive. Painful and from somewhere else. Perhaps, as one of the readers of this paper has suggested, it is, can be understood as, *recognition*.

MC I'm more attached to symmetry than romanticism, but I agree that this sounds right. The implication is that systems of accountability sometimes (try to) colonise the unaccountable, and that, as we've been saying, it takes a lot of work to make the rarefactions of unaccountability and noncalculability. You've told me that it is tough being a Quaker because it is tough making the necessary unaccountabilities. I don't think that anyone has begun to address the issue in health care where the boot, as we know, is on the other foot, and accountability is the order of the day. But here I think we are caught in a paradox.

JL How so?

MC Because as academics we work by making things accountable, putting them onto paper. This means that we aren't innocents. This isn't the place to start talking about different forms of writing, but, as you know, I agree with Anthony Giddens when he suggests that our contemporary reflexive society is 'uniquely sociological'.¹⁸ My own halfpennyworth here is that the social sciences contribute very actively to that process. That, for instance, markets take the forms that they do in part because they are theorised by economists.¹⁹ But this loops us back to gifts and presents. Is gift-giving 'really' a system of indirect exchange? One of (qualculative) trust in which there is reciprocity over the longer run? Or is it 'really' an instance of agapè at work, outside the qualculations of trust? These are questions that have been debated for a century by anthropologists. But the problem in part arises because the question is formulated in realist terms. Thus gift-giving, presence, is, for sure, *enacted* one way, or another. And then, as a part of this, any qualculations attached to gift-giving, whether by participants or anthropologists, have performative effects. If there is *talk* of calculation then agapè turns to calculation. Pretrust dissolves into trust.

Rail crash

JL All of this speaks, as you might expect, to my own condition! Fear of the loss of agapè. Resistance to the calculative. But we started off by making a somewhat more complicated point to do with incalculability and the proliferation of calculabilities.

MC Right. And this is important. Because so far we've been talking about rarefaction. We've said this is a strategy for preventing qualculation. One that takes effort. But now we need to think about proliferation. This, too, is a strategy for impeding qualculation. This, too, operates to generate subjects or subject positions that cannot qualculate. But here is the difference. This is because they are *too* entangled with qualculation. Indeed, I think we're going to be able to show that it is sometimes used quite deliberately to prevent the possibility of calculation.

JL I think this is a version of NIMBY.

MC NIMBY?

JL Not In My Back Yard. A standard feature of environmental disputes. People want the convenience of a motorway, or even a nuclear power plant, but they don't want it in their back yard. Everyone agrees in general that this or that is a good idea, but no one wants it near them.

MC So how does this relate to proliferation?

JL The issue came into focus for me when I started to look at explanations for recent British rail crashes. There is some nice data on this because several of them have been followed by public inquiries. For instance, there is the Cullen Inquiry that looked into the causes of the rail crash at Ladbroke Grove in West London in October 1999.²⁰ These inquiries are quasi-judicial in form. The different parties that might have an interest are all represented including: train operators; track and signal owners; rolling-stock leasing companies; maintenance companies (as you know, in the UK we have a railway system that is splendid in its diversity). Then there are passenger groups and relatives of the bereaved, the trades unions, the police, the Health and Safety Executive, and a lot more. Within certain rules the proceedings are adversarial. Agonistic. Thus, though they are all servants of the inquiry, different barristers represent and speak for different parties. The result, as you'd expect, is that different accounts of the accident and its causes are offered. And, in the end, the logic is a NIMBY logic. No party wants to get left holding the explanatory baby.

MC Give me an example.

JL Well, at Ladbroke Grove two trains collided more or less head-on, and thirty-one people were killed. It was quite dreadful. A scandal. So why did it happen? The answer is that one of the trains operated by a company called Thames Trains had been driven though a red light instead of stopping. This was pretty generally agreed by all concerned. But why did the driver take the train through the red light? Thames Trains couldn't escape all responsibility, but it did try to move it around for instance, to the owner of the track and the signals, a company then called Railtrack. Railtrack, it was alleged, had failed in its duties to provide a fully satisfactory signalling system. It was argued that the signal was anomalous, it was part of a complex and rather indecipherable array of other signals, that the lines of sight for the driver were sub-standard, and that Railtrack had consistently failed to investigate and act on previous incidents when drivers had gone past red lights both at the signal in question and elsewhere. So, it was argued, Railtrack had failed both technically and managerially. The driver had erred, yes, but given the messy signalling circumstances it was an understandable error. NIMBY.

MC How did Railtrack respond?

JL It tried to pin the blame back on Thames Trains. Why did the driver go through the red light? Well, no doubt for many reasons, but one of the most important was that he had not been well-enough trained. Instead of having spent years working on the railway and building up the commensurate experience, he'd been recruited off the street, so to speak, and put through an intensive and fairly short programme of training. Yes, this programme was approved by the relevant government inspectorate, but even so it wasn't thorough enough. For instance, he didn't really know the various complicated track routes out of Paddington station. If he'd known more about those routes he would have realised that he was heading into danger. And Railtrack created another line of argument. I won't explain the detail here, but they also suggested that he had adopted a defensive driving technique that, while seemingly adding to safety, actually increased danger under some circumstances. It meant that in some conditions he was more rather than less likely to go past red lights.²¹ Which is—it was argued—what had happened on the fateful morning.

MC So what you're saying is that the two companies, Thames Trains and Railtrack, were accounting for the accident in very different ways. And that it was in their interests to do so on the 'Not in My Back Yard' principle.

JL Yes. Exactly so. And this is just one example. Remember that there were at least ten or twelve major parties involved in the inquiry, and each was grinding its own axe. The rail driver's trades union, for instance, wanted to protect its members, which meant that it struck up different explanatory alliances, sometimes with Thames Trains (the signalling was too complex) and sometimes with Railtrack (training was inadequate) to try to exonerate the driver. The solicitors for the bereaved and the injured were very interested in the absence of an early-warning train-protection system that might have averted the accident or reduced its severity if it had been installed. They tended to take the view that human nature means that drivers will make mistakes, and systems need to be built on this assumption. There was an additional investigation of the signallers who were employees of Railtrack. No one thought that they'd set the signals wrong in the first instance, but there was a strong suspicion that they hadn't responded quickly enough when they realised that something was indeed going wrong. And that if they had been quicker off the mark perhaps the accident would have been less severe. And, as a final example, various parties took the view that the organisational fragmentation of the railway system following its privatisation (or indeed the intrusion of the profit motive into what should, on some accounts, have been an absolute commitment to safety) had also contributed to the collision.

MC I think that's enough! You're saying that there were numerous partially overlapping but also partially contradictory accounts. That these accounts proliferated, and made it impossible to account for the accident. Pushed the events beyond the calculable or the accountable.

JL Yes, that's the argument. But it doesn't quite work.

MC Why not?

JL Because the inquiry was charged to come to conclusions, so it *came* to conclusions. In the end Lord Cullen reviewed the various narratives, and wrote a single report, with a set of findings and recommendations.

MC So where does this leave the argument?

JL Well, it certainly shows that accountability and calculation take a lot of effort. Your analysis in which disentanglement leads to overflowing and further efforts at

disentanglement, and then further overflowing—all of this fits the Ladbroke Grove case perfectly. In other words, any particular NIMBY account makes responsibility accountable and qualculable by insisting on the salience of certain links (for instance, to the training of the driver) while insisting on the irrelevance of other possible connections (for instance, to the signals). It relates them and ranks them in a particular way. Entanglement and disentanglement, the two go together. But the issue is whether, overall, one is left with a context or a set of events that can be qualculated or not. Or whether qualculability is pushed beyond reach.

MC Okay. But if I can just pick up on your words there, this depends on what you mean by 'overall' and 'left with'. Because, let me guess, Cullen arrives at a set of conclusions in his report, indeed a set of 'overall' conclusions. This is, as you put it, what we are 'left with'. But, in other contexts, there may be no 'overall' conclusion, or there are different conclusions that are still inconsistent with one another. So overentanglement in accountability produces the impossibility of qualculation. **JL** That's right. The Cullen Inquiry is a nice example of the kind of qualculable space that generates judgments that have little to do with numerical calculation. It is spread over time. It goes through many modalities. Even, in some measure, it moves around from one discursive location to another. Though what this is also reminding me of is the sociology of scientific knowledge debates—the SSK debates—about closure.

MC Why?

JL Well SSK tended to work on the assumption that, while there are frequent explanatory controversies in science, these usually get resolved in some mixture of negotiation and power: that 'closure' is achieved. You'll also find that this assumption is also built into the 'actor-network' work on laboratories.²² But if you look at other locations—for instance, medical practice—it is instantly clear that often closure is not achieved, and, if it is, then it may be temporary. For instance, health practitioners live with what Annemarie Mol calls 'the problem of difference'.²³ They live with multiple and sometimes discordant accounts—and realities. Different entanglements. The issue is rarely closure, in the sense of arriving at a long-term agreement. Rather it is about what to do, here and now, with this patient who is seriously ill. In retrospect I tend to think that the closure model doesn't work in science either, that science is far more fuzzy and plural than it likes to pretend. But that's not important here. What is relevant is that the proliferation of narratives and accountabilities is a chronic condition in most circumstances. Sometimes, just sometimes, perhaps as in the Cullen Report, a single account is generated. But this is the exception rather than the rule.

MC So the argument is that too many accounts spoil the broth of accountability. Qualculation is impeded by qualculative proliferation. And qualculation then depends on a rather strict material and discursive framing which limits that proliferation.

JL Yes. That's right. The legal system with its practices, its regulations about proper accountability, and its locations, together with its clear material arrangements for producing (let's use the term) 'closure' does, indeed, secure qualculability for certain purposes at least some of the time. But, a final observation, let me just note that just because Lord Cullen wrote his report and arrived at his conclusions does not mean that controversy has stopped. There are *still* multiple accounts out there—and Cullen's is only one of them. The debates rumble on.

The Téléthon

MC Multiple accounts. I've got a nice example in which accounts are proliferated—and quite deliberately. It's to do with the Téléthon.

JL Which is?

MC Which is a TV fund-raising show, now more than fifteen years old, created by the AFM which is the French charity that supports research on, and care for, those suffering from muscular dystrophies. Though it was originally modelled on a US show, it was quickly and radically modified. This was partly because the AFM decided to support genomic research into diseases with genetic origins, and not to limit its efforts to muscular dystrophy. But this was in turn partly linked to the fact that the Téléthon was a public TV spectacle.

JL Why did this matter?

MC Because 'the gene' links people together. It is a great unifier. Everyone has genes!

JL Okay. So how does the Téléthon work?

MC It's a programme that runs for a whole weekend. But it's a programme plus. Plus a whole lot of AFM-organised events around France. These are organised by local committees that include AFM members—but a lot of other people too. Volunteers, those receiving support, lots of people work together of their own accord. People in this village organise a thirty-six hour swimming relay race. A sporting club there organises a weekend-long game of basketball. Somewhere else people build a wall. Over here a climbing club scales a cliff. What is organised is endlessly variable. Its content isn't important. It's the format or the aim that counts. And the aim is to raise money by getting people to participate.

JL So it works through sponsorship?

MC Yes. Gifts, donations, pledges, these are linked to each activity. What's going on, I think, is that the money is raised by proliferating links between the participants. In effect the local organising committees are orchestrating a process in which relations between people are multiplied. And then those relations take concrete form in the shape of cheques to the AFM at the end of the Téléthon.

JL It sounds a bit like our 'Live Aid'.

MC Yes. But the link between local activities and the Téléthon itself is interesting. Local activities are reported—and shown—on the Téléthon. They appear alongside the Téléthon itself, which is being broadcast from a symbolic location such as the Cite des Sciences, or the Génopole d'Evry. This is where discussions between scientists and doctors take place. Or debates between prominent public figures. Or artists come to support the cause. So the Téléthon is both local *and* centralised.

JL Okay, but what does this have to do with nonqualculability?

MC Its partly a matter of proliferation: too many links to count. But one actor—nonhuman actor is particularly important. This is the electronic display, above the humans, that records the total sum donated.

JL This sounds like calculation.

MC Yes and no. Because the display isn't simply a tally. It works in a complex one might say a confusing—way. Because the whole Téléthon brings together and orchestrates two sets of processes. First, there are the local activities generating a continuous proliferation of new links and entanglements. These appear on the screen as a set of events that are constantly being interrupted and juxtaposed with one another. Juxtaposed and therefore related. And further related. Everything is being connected with—and made dependent upon—everything else. What's happening is that a collective actor is being created out of a motley crowd of (now visible) individual actors. The collective actor is being constantly enriched with new participants. The programme, then, is simply the creation and transmission of this proliferation.

But, second process, the electronic display is supposed to continuously tally this proliferation of links and relations. But it does so—and is intended to do so—in a way that produces noncalculability. This is because the numbers are constantly changing. They are constantly changing to reflect all the local activities. But the numbers are never right. They are never fixed. They never come to an end. The list is never closed. Instead, they are always out-of-date. They reflect a set of overflowing processes, the oscillation between local and general, the movement between endless local scenes, rather than a finite set of stable relations. The display is not a tool for pinning things down. Quite to the contrary. It is intended to echo a process of indefinite multiplication. Except that the term 'echo' isn't quite right either. This is because the display is treated as an actor in its own right. At the beginning, when the Téléthon began, the presenters started to talk to it directly. They told it that it could persuade people to take part in local activities, or send in donations. So causality was being reversed.²⁴ The display did not *follow* the proliferation of links. It also produced and encouraged these. And all this is quite explicit. The presenters talk to the display. It has agency.

JL People will say that this sounds like magic—or fetishism.

MC Well, yes and no. This isn't the place for a digression into factishism.²⁵ But what's going on certainly has nothing to do with so-called prelogical or primitive thought. It all makes perfect sense: because the display never gives an accurate figure; because its figures are constantly undermining those that came before; and because the money that is moving around is a gift, a present. The counter isn't about settling accounts. Closing action. Fixing and clarifying relations between actors. Of defining them. Instead, it's about keeping things open. So the people who present the programme are right. The display and its contexts *create* the incalculability of the gift, the present. They do so by producing proliferation. Indeed, it is just at those moments when the display acts—when the presenter speaks to it—that people are most likely to lift the phone and pledge a gift.²⁶

JL So what should we take away from this?

MC I see it this way. It's a process in which an indefinite proliferation is being generated. Of course the Téléthon doesn't last forever. All excesses, including those of noncalculability, discover their limits. Like the Quakers. Like agapè. Like the accounts of a railway accident. But, if we compare it with agapè, things have been turned on their head. In the case of agapè, there is amnesia, noninscription. There is a rarefaction in which things, actions, or speeches don't join up in a line. But proliferation works the other way. Everything is written down. And more. Things are joined up in a line that never stops, is always overbalancing, that has no end.

Conclusion

The core of our argument is simple. We are interested in agency and action. And, in particular, we are interested in the boundary, inscribed in social theory, between the rational and the nonrational. Our argument is that this makes little sense. If there is a boundary at all then it is not between the rational and the nonrational but rather between what, following Cochoy, we have called the qualculable and the nonqualculable. To make this argument we have revisited the notion of calculation. This, we have argued, often has nothing to do with quantification. Instead, it is better understood as a process in which entities are detached from other contexts, reworked, displayed, related, manipulated, transformed, and summed in a single space. How this is done

is more or less indefinitely variable. And the nature of the space within which it is done is similarly variable. Quantitative methods, qualitative procedures, professional judgments, or the tinkering of daily practice, all of these are qualculative. And how they are done is a function of the material arrangements, including the bodies, in which they are produced. Electoral systems, bank statements, the testimony of witnesses, examination systems, the array of goods on a supermarket shelf, football league tables, road signs, presenting symptoms in the doctor's surgery, the web pages of amazon.com, the chapters of the bible, the process of driving, the use of a library catalogue, all of these and indefinitely many more are examples of material arrangements that generate conformable spaces and the possibility of qualculation.

Our argument is thus that the significant boundary between different forms of agency does not lie between calculation and judgment. Rather it is located between qualculation and nonqualculation. Like qualculative spaces, nonqualculative spaces are generated in material arrangements and practices and come in indefinitely many variants. Unlike qualculative spaces, they work in one way or another to refuse the provisional capacity to enumerate, list, display, relate, transform, rank, and sum. And we have tried to show that they do this in two distinct ways. In a process of rarefaction the possibility of qualculation is undermined by withdrawing the necessary resources. By contrast, in a process of proliferation, the possibility of qualculation is undermined by an excess of resources that interact with and undermine one another.

So qualculative and nonqualculative spaces are opposites, Other to each other. This is the significant boundary we have sought to draw in our exploration of agency. But to talk of Otherness is to imply that it is a boundary of a particular kind. For if qualculative and nonqualculative spaces cannot be held together then neither do they exist in isolation from one another. Nonqualculation, as we have tried to show above, precisely depends on qualculation. The workings of the Holy Spirit depend on the arrangement of a room that then recedes into the background, is Othered. The overflowing of the Téléthon depends on an artful apparatus that has been carefully qualculated by the AFM, though necessarily this too disappears at the moment the donor reaches for the telephone to make her pledge. Nonqualculation thus depends on the presence—but also on the absence—of qualculation. And—though we have not sought to show this here—qualculation depends, reciprocally, on the absent presence of nonqualculation: places and processes where matters are not summed up; places and processes where actions happen without the benefit of qualculation. Qualculation always discovers its limits.

It follows that the boundary between the two is complex. In one sense each is included in the other even while it is being rigorously excluded from it. But within this pattern of Othering there are endless variations. Is it the case, for example, that the creation of nonqualculability is to be understood as a qualculative Machiavellian ploy, the strategy of those who wish to manipulate nonqualculation? Whatever the merits of the cause for which the money is being raised, this is certainly a plausible reading of the circumstances of the Téléthon: a calculative and possibly cynical manipulation to produce nonqualculation. But this is only one empirical possibility. For instance, do we really want to make the same claim for the structurally similar circumstances of a Quaker meeting for worship? Do we want to suggest that its advices, and the creation of its silent room, amount to cynical manipulation? The question is, to be sure, empirical in character. The nonqualculability of such a space could be—in some variants has been—cynically manipulated. But there is no general rule. Within the possibilities of proliferation and rarefaction, the relations between the qualculable and the nonqualculable, intimate though they are, are variable, and in need of empirical investigation. Cynicism is only one possibility among many.

A final thought. We have argued that both qualculation and nonqualculation are precarious and expensive. It is just as expensive to create nonqualculability as it is qualculability. Here is a speculation: if investments in qualculability increase it also becomes more costly to create nonqualculability. Perhaps we are witnessing a historical process of escalation. Perhaps it gets more and more difficult to keep qualculability and nonqualculability in equilibrium. At any rate, proliferation of qualculability—but also, therefore, of nonqualculability is often taken to be a contemporary predicament. As we have noted, qualculability escalations turn up in the talk and practices of the audit society and the various discourses of accountability. But, then, nonqualculability appears in the form of discourses about 'postmodernism', nonfoundationalism, and scepticism. If the two are necessary to each other, necessary but Other to each other, we would expect to discover that when one grows then so too does the other.²⁷

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¹ Nonreason is Othered and productively Othered. See, for instance, Foucault (1971).

² Our approach is therefore symmetrical with respect to the explicit and the implicit.

³ Callon and Muniesa (2003; see also 2002).

⁴ Cochoy (2002).

⁵ Callon and Muniesa (2003, page 2).

⁶ For discussion see Law and Mol (2001) and Law and Singleton (2005).

⁷ Boltanski and Thevenot (1987).

⁸ Greenwood (2000).

⁹ Gomart and Hennion (1999) and Hennion (2001).

¹⁰ Moser (2003).

¹¹ London Yearly Meeting of the Religious Society of Friends (1960, paragraph 258).

¹² It is possible to think of the meeting as a method for detecting and enacting sets of possibilities that are usually overwhelmed by the regularities enacted in mundane and discursively dominant entanglements (see Law, 2004)

¹³ See the discussion in Boltanski (1990).

¹⁴ See Malinowski (1950). This is what Sahlins (1972) is suggesting when he distinguishes between generalised and negative reciprocity. But the word `reciprocity' is misleading.

¹⁵ This is discussed at some length in Law (2004).

¹⁶ Porter (1995) and Power (1997).

¹⁷ Moser and Law (2003), Pols (2003), and Singleton (2005).

¹⁸ Giddens (1990).

¹⁹ Callon (1998) and MacKenzie (2004).

²⁰ Cullen (2001). For fuller discussion see Law and Mol (2002).

²¹ It is a commonplace in the literatures on safety that safety systems, which tend to increase complexity and add to unpredictability, may lead to accidents. For a technically oriented version of the argument see Perrow (1999).

²² On SSK see, for instance, Collins (1985) and Latour and Woolgar (1986).

²³ Mol (2002).

²⁴ Cardon et al (1999).

²⁵ For discussion see Latour (1996).

²⁶ Cardon et al (1999).

²⁷ For discussion in the context of risk see the papers collected together in Lash et al (1996), and in particular Beck (1996) and Wynne (1996).