The Sociological Review

Introduction: special measures[1]

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Issues of measure and value and the relations between the two have inhabited the heartland of sociology since its inception. This continues to be the case even as many commentaries on the current state of the discipline position sociology as occupying a space beyond such concerns. Thus, while many of the texts now recognized as constituting the sociological canon wrestled with questions of how and if sociology could be defined by its abilities to measure, record and document aspects of the social, and of how and if such measurements might be entangled with values, much contemporary sociological commentary appears to foreclose these questions by proposing that the organization of the contemporary world is beyond both social facts and social meaning (Law, 2004; Law and Urry, 2004).[2] But it is the contention of this Special Issue that questions of measure and value should not and cannot be assigned to the sociological past. This is so not least because while the contemporary world may not be organized and ordered via a separation of reality and representation, facts and values, the concrete and the abstract, and is not straightforwardly amenable to either the methods of positivism or constructionism, it is also one in which there is a proliferation of information, data, calculative and other research instruments, measurements and valuations.

The explosion in the production and circulation of information and data, including its archiving and manipulation, and the role of search engines, data mining systems, sensing systems, logging software and tracking and tagging devices has been noted by a number of writers (see, for example, Terranova, 2004; Thrift, 2008), but of particular significance for sociology is that much of this data is described as ‘social’ data, sometimes but not only produced in social media. In short, there is an ongoing expansion of the social by way of techniques of mediation, measurement and valuation. Commercial organizations, for example, now routinely produce customer and user profiles by assembling information on tastes, preferences, ‘likes’, ratings and lifestyles, which in turn are manipulated with powerful research tools for a range of purposes. Indeed, armed with such data, commercial organizations – rather than sociologists – are now held by some to be at the cutting edge of social analysis, defining, for example, the most significant (and sometimes surprising) social measures for explanatory purposes (Burrows and Gane, 2006). For some observers these developments spell a potentially bleak future for sociology. Savage and Burrows (2009), for example, have argued that such developments are contributing to a potential crisis for the discipline, in part because they challenge sociology's claim to jurisdiction in the production and analysis of social data.

However, just as significant as any challenge to the professional expertise of the sociologist, are the implications of the properties and characteristics of such data for sociological practice. Neither inert in character nor contained or containable in any straightforward sense, data increasingly feeds back on itself in informational systems with unexpected results: it moves, flows, leaks, overflows and circulates beyond the systems and events in which it originates. As Matthew Fuller (2009) suggests, in digital cultures, data has an afterlife. Transactions such as sales, user subscriptions and memberships, for example, routinely generate by-products (an information surplus) that cannot be contained by the original coordinates of the transaction. Indeed such surpluses are routinely harvested and put to work in new ways, including in novel forms of value creation. In short, rather than being inert or dead, in the contemporary world data is brought into existence as active or 'alive'.

At the same time, as Adrian Mackenzie (2010) notes, contemporary shifts in data aggregation practices are disturbing established boundaries between commercial, scientific, technological and regulatory domains of expertise. He describes, for example,

> the proliferation of databases and software for managing clinical trials of pharmaceuticals, connecting medical records and biomedical research databases. [At present] clinical drug trials superimpose the procedures of regulatory approval processes, the logic of global pharmaceutical enterprises conducting international drug trials, the demands of clinical practice, the recruitment and organisation of cohorts of patients, the biopolitical statistics of epidemiology, as well as the organisation of high-throughput genomics research across institutional and commercial settings (Mackenzie, 2010: 3).

But as Mackenzie also notes, this is likely to change in the near future as Google, Microsoft and Oracle enter the domain of health care as the problem of aggregating scattered sources of personal health, information and medical records, as well as enrolling patients and patient groups in clinical trials of treatments and drugs is redefined as a major business opportunity.

Yet while such developments are undoubtedly significant, we propose that they should not necessarily be understood in terms of the removal of expertise from the professional sociologist. Instead, we suggest, they pose a series of compelling questions and problems for the discipline concerning the changing place of both measures and values in the contemporary world. If, for example, the work of measures is not merely to index or to represent, what else might measures and measuring do? How might the perceived multiplication of orders of worth (Stark, 2009) be linked to the contemporary proliferation of experimental measures? The contributions to this volume provide some answers to this question, by both reaching back into the discipline's history and pointing forward to new possibilities.

In the first contribution, Fabian Muniesa outlines a pragmatist attitude to value, or more precisely to valuation. With reference to the work of John Dewey, Muniesa takes issue with, on the one hand, what he terms a sociological understanding of value, which posits that value is a property that something has by virtue of how people consider it, and on the other, the view that value is a property that an object has as a result of its own condition, or is attached to it via its relation to other things. Such understandings, as Dewey observed, collapse the question of value into the 'modern "objective-subjective" bipolar scheme', positing value as either subjective or objective: as either a matter of reality or of representation. Yet in its focus on activity, process and practice in regard to both reality and ideas, a pragmatist take on value cuts through the subjective-objective controversy, and proposes instead a view of value as a practical action – as valuation, an activity that 'considers reality while provoking it'.

The adequacy and significance of a pragmatist view on value, Muniesa suggests, can be identified through the example of financial valuation. The recent global financial crisis serves as an important case in point. While often discussed in terms of bad or incorrect estimations of financial value, or as about the breakdown of a deluded system of beliefs and opinions, Muniesa argues these interpretations downplay the practical character of valuation at issue in the crisis. Both before and throughout the crisis, Muniesa maintains, financial valuation was neither objective nor subjective but a practical activity, and moreover an activity that was openly performative in character. At times this was a matter of turning things into objects of valuation, and at others about turning persons into subjects of valuation, but it was 'above all quite an activity'. Indeed Muniesa reflects that it is not just the recent financial crisis in which the pragmatist character of valuation as an activity is laid bare, but also in pedagogical materials focused on the valuation of corporate assets and securities. Such materials, Muniesa makes clear, emerged in roughly the same historical period as that in which the pragmatic philosophical discussion on the 'problem of values' was taking place: just as philosophical pragmatists stressed valuation as a practice, these materials grappled with valuation as an activity. Thus the Harvard case method of instruction in business administration shares a number of ideas with the North American pragmatist tradition, particularly in as much as this method aimed to teach not how to think but how to act.

But such pedagogical materials do more than show the connections between pragmatic philosophy and the emerging practices of financial valuation, for they also show how in processes of valuation the distance between values and their measures collapses. Specifically these materials show how, in the emerging practices of valuation, processes of measurement both ordered enterprises in a manner that made them amenable to valuation, and created value, notably by enabling the capitalization of businesses, through that very process. Financial valuation did not seek to devise finely tuned devices to map or measure features of businesses in relation to external measures of value, and nor did they seek to interpret or give an opinion on the value of a business. Instead, in the operation of the activity of valuation the appraisal of the characteristics of something in terms of its value and the setting of that thing for the purpose of making it valuable merge together, and 'become two aspects of the same act'. It is in the *practices* of valuation then that measures and values merge, or rather become two aspects of the same phenomenon.

In Muniesa's account then, valuation as a practice links up measures and values in a seriously consequential way, not least because the value obtained in the valuation of finance is capitalization. In his interrogation of Dewey's 'flank movement', Muniesa thus not only compels us to think of value as an activity rather than a thing, but also shows how this activity is itself a source of (economic) value. Moreover, in his claim that Dewey's 'flank movement' has particular relevance for today's financialized reality, Muniesa implies that a pragmatic stance towards both measure and value is both useful and necessary for understanding and engaging with the contemporary world.

Following Muniesa, Adam Arvidsson explores the activity of valuation in relation to practices of branding, focusing specifically on the emergence in the contemporary economy of techniques for the measurement of what he calls General Sentiment. Such a development, he suggests, enables a stabilization or becoming objective of affective value. To support this claim he puts forward a historical account of the rise and decline of labour time as the principal measure of productivity in capitalist economies, pointing to the importance of a range of technical, accounting and managerial processes for the internalization and subdivision of productive processes by firms. Such processes, he suggests, provided the basis for the creation of standardized productivity in such a way that contracted labour time could become its measure. The legitimacy and efficacy of such historical measures is being undermined, however, Arvidsson argues, by a number of contemporary developments including, notably, the socialization of production, and the increasing strategic importance attached to so-called 'intangible assets' including innovation, flexibility and branding. As he notes, the production of such assets often occurs outside the formal boundaries and control of single organizations and sometimes, as in the case of branding, builds on the activity of non-salaried actors such as consumers and the public at large. Furthermore, the creation of value in this way typically employs resources, such as communicative and social skills, the value-creating potential of which are poorly related to the quanta of time in which they are employed.

While such developments do not mean that measures of labour time have by any means 'disappeared' or 'no longer count', they are, so Arvidsson claims, increasingly being supplemented by alternative measures of value, including metrics of consumer affect. Exploring the proliferation of such metrics, he asks 'what does it mean for affect to become public and assessable?' and answers that it means that it can be represented independently of the specific idea to which it is linked. Such a possibility arises, he believes, in the context of the remediation of affect brought about by the restructuring of the public sphere associated with the rise of consumer culture. Here Arvidsson draws on the ideas of Gabriel Tarde relating to 'mental communion', and also the development of new measurement devices that are able to create a new general equivalent against which specific manifestations of affect can be evaluated regardless of the concrete ideas or representations to which they are tied. This is what he calls General Sentiment. Here then, as in the practices described by Muniesa, the appraisal of the characteristics of something – in this case brand equity, in terms of its value and the setting of that thing for the purpose of making it valuable, merge together and, to repeat Muniesa's revealing phrase, 'become two aspects of the same act'.

There are a number of other points that might also be drawn out from Arvidsson's contribution that have a relevance for the volume as a whole: the intensive force of numbers that is captured in measures of sentiment; changes in the distribution and media of metrological methods and related shifts in authority; the opportunities afforded for methodological innovation of large data sets; and – the point with which he concludes – the importance of whether and how the new large data sets that are now being created can be deployed in ways that can be rendered ethical, in the sense of being open to public, political deliberation, even as the nature and organization of the public is being reconstituted. And here, we would want to note that a number of other sociological commentators on measurement and value have focused precisely on this issue in the past. So, for example, Desorisières shows how the administrative production of statistics has, from its very origins, been forced to combine 'the norms of the scientific world with those of the modern, rational state, which are centred on the general interest and efficiency' (1998: 8). As he argues, 'creating a political space involves and makes possible the creation of a space of common measurement, within which things may be compared, because the categories and encoding procedures are identical' (1998: 9).

Helen Verran's contribution to this Special Issue directly addresses these matters, with specific attention to the uses of number in relation to processes of political deliberation. In her contribution, Verran describes a shift in policy eras; a shift that is linked to the emergence of science as a service industry, and the growth of a market in scientific expertise. This shift, she suggests, is fundamental to the move from a disciplinary to a control society. To instantiate this shift she compares two policy interventions, separated by only a few years, in regard to the rehabilitation of the Snowy River in Victoria, Australia. In the first policy era, measure and value are brought together in the numbering practices of professionals, that is in the practices of scientists, technicians, sociologists and others. The latter carry out this work usually invisibly, but diligently and rigorously, in the epistemologically accountable ways with which natural and social scientists are familiar, that is, through scientific trials that can be assessed in terms of validity, reliability and representativeness. In the second era, however, the trials are organized differently; the implications of this shift, so Verran argues, is apparent in the different ways in which numbers are rendered (ac)countable.

In the first era, Verran argues, measures and values are brought together through their linkage in numbers that are established as indices of actual and projected river flow. As she notes, the capacity of such numerical indices to extend beyond the here and now in which they are initially secured, requires work to be put in, work on the part of the river, government and scientists. This work is what Latour (2000) describes as the scientific work of 'extension in time', that is, the work of ensuring the adequacy and verifiability of the calibration of metrological tools, and their traceability inside and – crucially – outside particular trials. It is described by Desorisières in relation to the specific case of statistics in terms of a costly investment – of technical and social forms – of objectifying, of 'making things hold' (1998: 9). Verran herself observes that even if such work is put in, things to do with the here and now are 'always floating off [as rivers do] in one way or another, leaving policy, implementation, and evaluation in a shambles'. However, there is a sense in which, for Verran, the possibility of a 'shambles' does not – and should not – undermine the epistemological principles at work in the first era she describes.

In relation to the second era, though, she is more concerned. In the particular case she discusses, the scientific trials deployed involve the use of 'a physical model'; specifically, a model of the river-reach in a huge sound box in the grounds of a nearby university, what was described as a 'mobile' river-bed. Importantly the model could be visited by 'members of the community', who could watch the flow of water under various simulated conditions, indeed who could become experimenters themselves. They could simulate a flood and see what would happen to the surrounding environment, a representation of their own locality. The results from these modelling exercises were 'workshopped' with scientists from the biological sciences and lists of requirements assembled. Groups of children and local volunteers were formed to plant and tend the natural habitat; feedback from local meetings was incorporated; and policy recommendations were provided. For Verran, the trial involves the use of numbers created as indices in relation to a set of values that were specifically created to be traded; values in *potentia*, as she puts it, to be bought and sold 'in the environmental interventions services market' (see also Thrift, 2008).

The major problem Verran identifies in such practices is that the numbers are created as ephemeral products, designs for intervention; to be purchased, not as indices, but as symbols. Such symbols, she says, will not endure, since 'no institution is going to put resources into maintaining [them]'. Rather, she argues, they will inevitably come to be separated from their constitutive materialities, and, as a consequence, cannot provide an enduring foundation for policy. In short, the (social) scientific validity of trials in this second era is undermined for Verran as a consequence of the fact that its measures and values are not provided with 'extension in time'; they do not objectify or make things that hold.

One question we, as editors, want to pose, however, is whether and how the endurance of (social) scientific measurement, value and participation described by Verran as characteristic of the second era can be provided in new ways? It is a question we think it is important to ask since, as well as dangers, there are opportunities for sociology in this period of experimentation with measurement and value, including those that Verran identifies herself. These include the opportunity for: new kinds of interdisciplinary work; the development and support of indices (and symbols) that relate to people-place-things; new kinds of engagement with different kinds of publics and users in the doing of knowledge; and the use of a wider range of criteria, including perhaps relevance and efficacy, alongside accuracy and validity. Perhaps, in short, there is something to be gained for sociology from a period in which there is an explicit and knowing politicization of measurement and valuation?

This question returns us to the issue of a possible politics or ethics of measurement, an issue raised not only by Arvidsson but also by Evelyn Ruppert and Mike Savage. In their contribution to this volume, focused on the case of the 2009 British MPs' expenses scandal, Ruppert and Savage directly consider the question of whether and how transactional data has the potential to provide the basis for a politics (and also, although more indirectly, consider what kind of politics might support – or make durable – the analysis of transactional data). The case on which they focus is one in which one form of political accountability, that of the scrutiny of the expenses claimed by MPs by a public body, namely the parliamentary Fees Office and the Department of Finance and Administration's Green Book, was found wanting, and was uncovered as such by investigative journalists. But while Ruppert and Savage recognize that the ensuing scandal could be represented as a classic instance of a political exposé, in which journalists 'represent' the interests of the public, they focus instead on the way in which the case opens up an alternative: the potential for public engagement.

As Ruppert and Savage note, the initial form in which this information was made public, that is, as a leak, made use of the 'traditional muckraking journalistic model' in which the activities of 'scurrilous individuals' are exposed. But rather than accepting this description of the process of publicization, Ruppert and Savage develop an alternative account by drawing our attention to some unusual features of this process, including, notably, the requirement by those who leaked the information that data relating to the whole population of MPs be made public, rather than only that relating to a few individuals. It is this insistence, Ruppert and Savage propose, that opened up the possibility for what they call a transactional politics. Such a politics has a number of features in their description. On the one hand, transactional data enables the interpreter to focus on activities or practices rather than elicited attitudes and views. Through this reorientation, they suggest, the distinction between what is deemed private and what is held to be public is being reconfigured (for further consideration of this issue see Gross below). But more than this, for Ruppert and Savage, the digital data at the heart of this case affords new analytical possibilities insofar as it can be deployed not only to examine standardized aggregate properties of the population in question, but also to explore the specificities of the activities of the individuals in a variety of relations to each other.

Here, Ruppert and Savage identify the importance of the use of relational visualizations to enable such forms of analysis. Indeed, they propose that in the emerging transactional politics of which this is but one example, forms of knowledge based on textual and numerical manipulation will come to acquire a new significance as visualizations enable individualized and discrete measurements to be highlighted. In the use of such visualizations, they suggest, the interpreter can be given the capacity to move from individuals to aggregates and back again. Such techniques are different from standard social scientific forms of measurement that deal with pre-given categories and statistical means and averages, and rely upon practices of representation and representativeness that are neither required nor significant in relation to complete data-sets such as that of MPs' expenses. Since it is the individual and not a group or category, or the one person in relation to an average, that is made visible it is, Ruppert and Savage suggest, becoming possible for individuals to constitute their own categories, that is, to become 'a thing that scales' (Holbraad and Pedersen, 2009).

Of course, the kinds of claims to knowledge that might be produced in such a dynamic and open-ended politics of measurement raises questions and concerns, including the issues of endurance identified as fundamental by Verran: that is, by what means, if neither by (state-) scientific extension in (space-)time nor by market competitiveness, will the categories and values of this emerging social scientific politics of measurement be shared and sustained? What or where are the new ontological forms that will support this emerging politics of measurement? Here it is worth observing that Ruppert and Savage suggest that it may be possible for the labour involved in the analysis of such data to be carried out by amateurs as well as professionals, volunteers as well as paid analysts. Indeed, they hypothesize that the possibility of a new politics of measurement may be linked to the formation of constituencies of informational gatekeepers, organizers and interpreters who may be only loosely or not at all attached to formal organizations and companies. This is a way, they suggest, that such a politics has the potential to engage publics at an ontological level rather than simply eliciting their opinion in a politics of representation (see also Latour and Weibel, 2005; and Marres, 2007). It is also, we suggest, a way in which such transactional (real-time) data may come to acquire its own, specific, forms of social and technical endurance. Whether this will really be the case is, of course, an empirical question, to which it is probably too soon to give an answer, but is nevertheless important given the contemporary transformations in the public sphere. As Desorisières points out in relation to statistics,

> The construction of a statistical system cannot be separated from the construction of equivalence spaces that guarantee the consistency and permanence, both political and cognitive, of those objects intended to provide a reference for debates. The space of representativeness of statistical descriptions is only made possible by a space of common mental representations borne by a common language, marked mainly by the state and by law. (1998: 324)

Conversely, as he also says, the space of (post-)representativeness is important if 'one wishes to study whatever makes a sphere both possible and impossible' (1998: 325).

It may be, of course, that the contrast emerging here between an old and new politics of measurement is too sharply drawn, for the data analysis that underpins what Verran describes as the first era was never clean, but always dirty, as the chapter by Emma Uprichard makes clear. That is, the categories of social scientific analysis have always had an ontological complexity and instability. Uprichard begins by noting that longitudinal data analysis has a long history: over three centuries. However, in the last decade it has acquired a growing currency in large part because of the increase in public access to large-scale longitudinal surveys and the fact that longitudinal techniques have become more available in standard quantitative software packages. She further notes that in the pursuit of identifying trajectories in such quantitative research, classifications are typically tracked over time. However, as she is at pains to point out, most classifications change both in absolute terms – in that some disappear whilst others are created – and in their meaning. In other words, the work of extension in time of social scientific analysis has never been straightforward. There is a need therefore, she argues, to rethink how longitudinal quantitative research might explore both the qualitative changes to classification systems as well as the quantitative changes within each classification.

By drawing on the changing classifications of local food retail outlets in the city of York (UK) since the 1950s as an illustrative example, Uprichard presents an alternative way of graphing longitudinal quantitative data, so providing a description of both types of change over time. In so doing, she argues for the increased use of 'dirty data' in longitudinal quantitative analysis, by which she means data that has not been cleansed of classificatory change, since such data allows for both qualitative *and* quantitative changes to and within classification systems to be explored. Such a proposal challenges existing assumptions about the quality and type of data used in social scientific quantitative research and how change in the social world is measured in general by providing a new way in which the triple aims of such research – what has changed, how that thing has changed, and why that thing has changed the way it has – are brought together. This is, as she puts it, where the money is: 'Predicting changes and continuities to classifications – not to variables, but to polythetic types of cases – is what the global commercial enterprises, such as the large supermarket chains, insurance and credit card agencies, etc. are now doing with our quantitative data'. The point she makes to justify the need to address this issue is fundamental: namely that quantitative (and qualitative) data are always and necessarily manifestations of the processes involved in describing a changing object of study; data do not exist in a vacuum independent of our knowledge any more than the objects they describe. Such a recognition is certainly not new and this is why we do not want to draw a clear line of distinction between old and new politics of measurement, but we do want to suggest that it is only recently that these more-than-representational qualities of measurement are being mobilized in the social sciences (Thrift, 2000, 2008; Lorimer, 2005), or to put it more bluntly, that social scientists have become interested in getting their hands dirty.

Ana Gross suggests something similar as she considers the increasing association of economic value with entities and qualities previously disassociated from practices of valuation. The emergence of economies of vitality, that is, the harvesting of value from the qualities and capacities of life and living processes is one well-documented instance of this process (see, for example, Rose, 2006; Cooper, 2008). Thus Melinda Cooper (2008) documents how innovation and creativity in the bio and life sciences from the early 1980s onwards moved biological processes, or 'life itself', and capital accumulation closer together, a movement that, she argues, is thoroughly entangled in the project of neoliberalism. In her contribution Gross draws upon and extends this body of work, by insisting that the creation of value out of the qualities or capacities of living entities is not specific to the bio-sciences. Such value creation is also characteristic of the practices of social scientists, Gross claims, especially the practices of social scientists conducting empirical research with human subjects. Her point is that social scientific practices are implicated in a set of complex processes whereby the vital emissions of human subjects, including utterances, actions, opinions and interactions, are increasingly rendered economic.

To examine this process Gross describes the emergence of devices of social science ethics, especially those which relate to the regulation of contemporary sociological practice in the United Kingdom. Within this domain Gross pays particular attention to informed consent and anonymization principles, which she posits as participating in economic value creation in both social scientific and commercial research. Such devices do so, Gross claims, since they contribute to a conversion of vital emissions into data which is disentangled or abstracted from the human agency to which it makes reference, a process which in turn enables the circulation of vital emissions in regimes 'where they can be made commensurable . . . and rendered of economic value'. Informed consent devices, for example, frame social research transactions in market terms, specifically as consensual or freely chosen exchanges.

Yet while in market transactions the parties involved are recognized as already holding property rights over what is being exchanged, 'research or data subjects do not, strictly speaking, hold property rights over their personal data'. In this respect, Gross maintains, informed consent renders legitimate what would otherwise be an illegitimate detachment and transfer of what is normatively framed as the personal or the private into value regimes. In short, informed consent is a device that unleashes the economic potentiality of the private. Devices of anonymization also unleash such economic potential, and do so by erasing previous attachments and facilitating new appropriations of vital emissions, particularly in as much as they aid in the process of making such emissions more thing-like and hence amenable to ownership. To support this argument, Gross documents how devices of anonymization, devices which are usually understood as rendering research ethical, transform vital emissions from being singular and incommensurable, that is as attached to activities denoting personhood, to data that is equivalent, comparable, measurable and tradable. In short, anonymization devices frame vital emissions as thing-like and hence as amenable to manipulation, crucially including the creation of aggregates.

In her examination of ethics devices, and in particular in understanding such devices as economic, Gross therefore questions the idea that social science data is an unmediated expression and function of human agency, and argues instead that ethics devices equip human agency with the properties of autonomy and privacy 'so as to enable the extraction and manipulation of data'. Her contribution asks us to consider how the techniques and devices associated with social science measures are not only participating in the creation of an omnipresence of value and implicated in the folding of society into economy, but also how such techniques also enable and distribute particular forms of agency. More than this, and in a context of the potential crisis of sociology outlined by Savage and Burrows (2009), and especially the threat posed to sociology by the expansion of commercial social research, Gross's analysis alerts us to the fact that any such crisis should not be pitched as one in which social science research does not (or should not) participate in economic value creation, and nor as one which can be countered with recourse to more relevant methods (and less still by recourse to frameworks of ethical regulation). Instead, Gross's analysis alerts us to the fact that the shifts at issue in this so-called crisis involve an emergent political economy of social data, a political economy which demands that attention is focused not simply on the proliferation of social data, but also on 'devices which serve to articulate particular forms of property and value'. Moreover, Gross's analysis underscores the significance of asking just how social science may make knowledge claims in the context of the new politics of measure.

Yet social scientists are only just beginning to engage with this emergent political economy of data including the politics of measurement attached to it. This is so not least perhaps because, as academics, we feel that we are being experimented on, rather than with, as the case of the UK's Research Assessment Exercise (RAE) discussed by Kelly and Burrows illustrates. Locating the RAE as part of the increasing metricization of academic life, Kelly and Burrows lay out a detailed case study of the way in which the discipline of sociology has participated in the various attempts that have been made to measure the value of academic research in the UK. They focus in particular on the most recent exercise whose results were reported in 2008. Such an analysis they make clear is important not only because such evaluations are used to inform state funding allocation decisions in the UK, but also because the institutional arrangements and processes at issue in this exercise, and especially the relationship between measure and value that such arrangements enact, are fast becoming internationalized. And this is so even when state-sponsored measurement of research quality is not yet being used to determine the allocation of resources (notably in the case of the United States). More specifically, while state-sponsored exercises have measured and ranked research performance via a range of devices to distribute funding in the UK, commercial providers of data 'merely' rank research performance to indicate the supposed global standing of institutions and disciplines within them.

The key argument presented by Kelly and Burrows concerns the performative powers of such exercises. Thus, just as the processes of valuation Muniesa describes turn both things and persons into objects and subjects of valuation, so too do the devices and instruments associated with the Research Assessment Exercise. This latter is evidenced in how in the UK academic and organizational practices have been 'incrementally recalibrated in relation to the RAE'. Specifically, the mundane practices and processes of academic life (for example, recruitment, reviews, audits, restructures) are now lived through not only the exercises themselves, but also in 'institutional imaginings of what the future might bring'. Scenario planning for possible RAE[3] outcomes is, for example, now a routine feature of academic life in the UK. Kelly and Burrows demonstrate exactly how hard-wired this recalibration of academic and organizational practices is via a consideration of how a range of shadow metrics may be used to predict or mimic the outcomes of the latest research exercise assessment for sociology. More specifically they show how a relatively simple three-variable linear regression model – where the variables are size of submission, income from UK research councils per capita, and the percentage of articles published in the top quartile of the highest quality journals – may be used to produce a very similar ranking to that produced in the 2008 exercise. This finding is significant particularly in as much as a more qualitative process of informed peer review produced the 2008 rankings.

In establishing this 'agreement' between the long and complex deliberations between the peer review panel and the predictions of a three-variable linear regression model, Kelly and Burrows are, however, not suggesting that panels are a simple means of reproducing already established intellectual hierarchies. Instead, their aim is to raise a series of questions regarding the measuring of value, or as Muniesa would put it, valuation. One of these questions concerns the recursive implication of the complex qualitative and quantitative data assemblages (including impact ratings, journal rankings and citation scores) at issue in measuring the value of academic disciplines, while another concerns the performative powers of valuation in regard to mundane academic practice. As Kelly and Burrows put it 'although we sometimes comfort ourselves that . . . judgements of the value of our work . . . made by our peers still provides the basis for our position in the academic "league table", in actuality these judgements almost perfectly mirror a set of quite basic underlying statistical drivers of "quality".'

It is not only then that the more-than representational qualities of measurement raise a range of challenges for sociological practice, but that sociologists themselves are the objects and subjects of – and implicated in – such measures and measurements. Kelly and Burrows speculate that the entanglement of sociologists in such measures may be linked to the crisis being felt in the discipline. In his contribution Nicholas Gane asks us to consider the terms of any such crisis differently. Taking the challenge faced by sociology as a consequence of the explosion in the generation, mobilization and analysis of social data by commercial organizations, Gane suggests that the latter demands that sociologists must revisit the question of the promise of the discipline. This is the case not least because the threat posed by commercial sociology to the discipline is more than one of scale and powerful resources, but also one which questions the value and relevance of quantitative sociologies that centre on the production of data through techniques of measurement. Yet while Savage and Burrows (2009) locate such developments as potentially disastrous for sociology and for quantitative sociology in particular, Gane locates them more ambivalently, and does so by reference to the work of C. Wright Mills. Specifically, Gane observes that aspects of these developments are anticipated in *The Sociological Imagination* (1959), and especially in Mills' critique of the sociology of his day. Sixty years ago Mills argued that the discipline was caught between, on the one hand, a parochial empiricism concerned primarily with questions of method, and on the other, grand theory concerned with highly disembedded, abstract concepts. The former, Mills argued, confused what is to be studied with methods for its study and hence lost its grip on the problems of the empirical world, while the latter fetishized its concepts to the extent that theory outran any specific empirical problem.

Gane maintains that this double impasse of theory and method remains with us today. On the one hand, contemporary social theory is dominated by what he terms, following Ulrich Beck, a zombie canon, where rather than re-forged or invented anew, sociological concepts are drawn ready-made from the writings of a select body of thinkers. Just as the social theory of Mills' day fetishized the concept, so too does the sociology of the present. The latter 'blocks rather than exercises the sociological imagination because it starts with a meta-concept or process that is then stamped on every aspect of the so-called "empirical" worlds under study'. And just as Mills' grand theory is evident in the contemporary discipline, so too is an institutionally engrained parochial empiricism. Thus, in much quantitative (but also some qualitative) sociological research, ready-made methods and procedures take precedence over the specific qualities of the empirical world, to the extent that method determines the problems to be studied. The outcome is that many 'urgent and pressing events of our times barely feature within mainstream sociology'.

Indeed, Gane suggests, the continued operation of empiricism has contributed to an aversion to the analysis of events within the discipline. Such an event-adverse sociology, Gane notes, can never meet the criteria of adequacy set out by Mills, namely that of an imaginative discipline whose methods do not precede empirical problems but are determined by and unfold with them. Crucially, and understood in this Millsian light, the current crisis of measure faced by contemporary (and especially quantitative) sociology is therefore not necessarily constituted via the rise of external, resource-rich, commercial competition in the generation, analysis and mobilization of social data. Instead the crisis, such as it is, relates to deep-seated and institutionally engrained practices within the discipline, whereby the production of data through techniques of measurement is procedurally rather than empirically led, a practice which contributes to the production of data and measures which have little traction or relevance in the contemporary world.

In addition to allowing the current crisis of measure to be understood as both long-term and relating to factors internal to the discipline, analysing this crisis via the work of Mills also enables Gane to raise some suggestions for the reanimation of the sociological imagination. The zombie canon, for example, might be displaced via a renewed theoretical imagination; a renewal that Gane argues requires inventive conceptual work addressing the pressing empirical demands of the day. As such, a process of conceptual invention will necessarily also involve a renewed and reworked empirical sociology. For just as sociological methods should emerge out of, and in connection to, the complexities of the empirical world, Gane insists, so too should concepts. Thus, rather than static or abstract devices, concepts should be alive, open and on the move. Such a renewal moreover does not only involve conceptual invention, but a confrontation with a range of complex questions. These include questions regarding the value of measurement, and the value of a sociology that is not necessarily implicated in quantitative forms of measurement. Addressing such questions, Gane maintains, is vital if the promise of sociology is to be reignited.

So then, how could we not conclude this introduction by reflecting on the kinds of experimentation with value that we are witnessing. First, let us make it clear that we do not want to imply that we are seeing an unprecedented proliferation of modalities of measurement. As Jane Guyer (2004) among many others has argued, the expansion of capitalism did indeed involve struggles to impose commensuration and calculation of the ideal modernist type, that is, professionalized statistical skills, the use of standardized criteria, and the role of banks and other state-regulated institutions as the custodians and integrators of relevant transactional memories (Hart, 2001). However, it also witnessed the growth of a parallel architecture of disjuncture, including the building of dissonant and dynamic value scales, in which the terms of difference are accepted as partial transformations and indices of each other, with repertories of value always under re-creation. Nevertheless, we do want to suggest that a set of inter-related transformations is occurring in which linkages between value scales are being renegotiated, in ways that enable a multiplication of conversions, and that such transformations are fundamental to the current flowering of multiple orders of worth (Stark, 2009), as well as affording new kinds of intensive and extensive geographical and temporal reach for exchange. Such transformations, we suggest, are supported by the emergence of what we have already called spaces of more-than-representation (Rheinberger, 1997; Thrift, 2008; Lorimer, 2005). Our proposal is that sociologists should at least attempt to describe the specificity of such spaces, if not perhaps also themselves engage in the practices they make possible. This is so not least because of the opportunities such transformations provide for sociology to re-imagine itself.

So let us say a little about these more-than-representational spaces. The notion draws most evidently on Nigel Thrift's (2008) use of the term postrepresentation to capture the significance of practices in their more-than-human, more-than-textual, multi-sensory, happening actuality, but it also references not only Desorisières's attention to the 'space of representativeness' that has been fundamental in the history of statistics but also the sociologist of science Hans-Jörg Rheinberger's emphasis on the importance of a 'space of representation' for the doing of science (1997). At a very simple level, the recent emphasis on the post-representational has challenged the assumption of the importance of the symbolic over and above the responsive and the rhetorical dimensions of representation, and in doing so has complicated the terms of the politics and values of representativeness. Desorisières argues for the importance of analysing the place of statistical information in the public sphere in terms of a network 'of stabilized connections, of routinized equivalences, and words to describe them. It forms a language: that is, a discernible set of bonds that make things hold. . . . It is precisely this language that provides the reference points and the common meaning in relation to which the actors [of the public sphere] can qualify and express their reactions' (1998: 333). What Rheinberger adds to this helpful linking of measurement and value to the public is a framework for understanding experimental research systems in terms of the workings of 'co-ordinates of signification', rather than language alone. This is a way in which the agency of the operation of material traces or graphemes – symbols, indices and icons – can be acknowledged in experimental systems. In other words, Rheinberger's insistence upon the significance of the material-semiotic organization of a space of post- or more-than-representation is important for us since it provides a basis for exploring the social-scientific capacities of contemporary experiments in measurement and value in ways which do not presume the terms of representativeness or public debate.

The first and most obvious characteristic of such spaces that we can observe, identified by all our contributors, is that the values of the 'what' and the measurement of the 'how' are co-produced in such spaces; that is, not only is the 'what' that is measured a product of 'how' it is measured, but also the 'how' of measurement is a response to the 'what'. Such spaces are therefore not only performative. They do not simply involve a movement from the 'what' to the 'how', but are spaces in which (and to draw once more on Muniesa) the distance between the 'what' and the 'how' collapses. Second, we observe that in many cases the indexical and the symbolic are being combined in new ways in such spaces. Let us say a little more about this. A number of writers, from a range of different disciplines, have proposed that the importance of symbolic culture across societies arises because symbols allow humans to ignore most of a vast web of word-object and object-object indexical associations by using the short-cut of symbol-symbol relations to make and mark a specific associative path. Symbols, in this view, are powerful because of their virtual character, because they are shared, and because – in systems such as language – they are exterior to the individual human mind (Lenoir, 2008).

They are also powerful because they are central to the liveliness of culture as a result of their capacity to introduce movement through their use in metaphors.

The capacities of indices and icons have historically been limited in their capacity to move, or make movement, to enable inventiveness as Roy Wagner (1986) would say, by their dependence upon perception by individual minds, and their positional situatedness. But, as we and our contributors show, the ability of the indexical to enable (social) relations is being vastly extended through the development of diverse, iterative and automatic information processing systems, supported by memory systems with the capacity to support, extend and make intelligible indices outside the individual mind. So, for example, Parisi (forthcoming) describes the way in which the computation of urban data contributes to what she calls an algorithmic mode of planning defined by an extended apparatus of prediction, able not only to establish the condition of the present through the retrieval of past data but also to change these conditions according to data variations immediately retrieved from the environment. As she says, this cybernetic logic of control opens its mechanisms of value and measure to non-quantifiable conditions so as to capture qualitative changes before their emergence. This transformation, we suggest, is one of the sources for what Helga Nowotny (2002) calls the expansion of the present, a term that she suggests is characteristic of the post-environmental phase that we have entered today, but that we describe as the bringing into visibility of value latency across a range of domains of social life. That the terms of this expansion are contested is evident in the contributions to this volume, and is what is necessarily at issue for sociology, not least since this value latency emerges as inextricably tied to the social, however that is defined.

To say more about this emerging indexical or transactional politics then, let us focus for a moment on the example of changes in number and numbering. The remarkable capacities of numbers, as Verran describes them, are two-fold: they participate in processes of ordering and in representing that order as value. This dual role of number – ordering and valuing – is conflated in many routine everyday and scientific uses of number, in which both the order and value of numbers is given by the relation afforded by a fixed (external) measure, a metric, or unit of quantity, of magnitude. In such uses, numbers as symbols have relied upon numbers as indices in a particular kind of way, as apparently neutral, external markers of order and value in one. As Badiou puts it, 'What counts – in the sense of what is valued – is that which is counted' (2008: 2). In many contemporary uses of number, however, including in some of the examples described in this volume, ordering and valuing are being brought together without reference to an external measure, but rather by – or in – relations in which the performative capacities of number to order and value are combined in different ways. In this process, as our other contributors make plain, new kinds of liveliness are being introduced into culture. The implications of this liveliness for sociology are as yet unclear.

Indeed, as Ruppert and Savage suggest, the implications for sociological analysis of data-sets that have no 'outside' to which they might make reference are only beginning to be explored (see also Rogers, 2010). As noted above, such data resists being treated as a collection of numerically measured facts (or standins for facts) that require working on to be brought to life by analysis. On the contrary, as lively and vibrant, constantly in movement, such data calls the distinction between data and analysis into doubt. Specifically, such data does not comprise a set of abstractions that attempt to model, represent or index aspects of an external or more real reality. Instead, and because such data concerns whole populations and is often continuously updated in real time, its properties render the demand that social data (meaningfully) represent or (quantitatively) index 'reality' beside the point. Indeed, in place of such demands, Ruppert and Savage identify the capacity, for relations to be established between an individualized entity and the population of which it is part, specifically for the individual to become its own category. One of the things that is interesting to us about this and of particular significance for sociology is that such spaces open up the possibility that 'quantitative' techniques can address the 'qualitative' dimensions of social and cultural life. Whether and how numbers can indeed capture qualitative values is the subject of much contemporary debate, including a number of the chapters included here: what we are pointing to is the importance of understanding the changing relation between icons, indices and symbols in spaces of more-than-representation for an appreciation of what is at stake in contemporary experiments with measure and value.

A further point concerns the general rather than universal nature of the experiments described by our contributors. As briefly noted above, Latour (2000) has proposed that the capacity of epistemic things (problems, measures, standards, facts, hypotheses) to endure (their extension in time) is relative to the circumscribed and well-defined spatio-temporal envelope of their network of production. What is interesting to us, however, for a sociology in the making is that in many of the measuring practices described here there is no aspiration to the spatio-temporal universalism of always and everywhere. Rather, the relative existence of epistemic things between never-nowhere and always-everywhere is not simply acknowledged, but reflexively operated in. So, for example, in many of the contributions to this volume, measures are not understood as external spatio-temporal coordinates of signification, that may be reproduced without modification elsewhere, but are participants in dynamic surfaces of coordinatization (Adkins and Lury, 2009).

In such coordinatized surfaces of more-than-representation, measures produce individualized objects or entities in terms of the properties of superimposition, dynamism and multiple relationality, the capacity to affect and be affected, rather than those previously characteristic of objects, such as those of substance, magnitude and externality. Such entities thus not only have the capacity to move in extensive time and space, but also to display singular values of individualized intensity: that they are self-reflexively general rather than universal in their making is what makes them lively.

For this reason, the question of participation, or the engagement of the public becomes crucial. Indeed, the nature and characteristics of partiality – of the taking part, or participation – or partisanship (Latour and Weibel, 2005; Rogers and Marres, 2002) rather than representativeness may thus come to be a crucial judgement of entities in relation to the use of measures in such spaces. In relation to partiality rather than representativeness, the dynamic composition of social scientific objects or entities in generalized (and generalizable) time-spaces becomes available for sociological analysis, in ways which make visible the ontological as well as epistemological commitments that are required for their specific endurance.

Reviewing these developments then, we suggest that in post- or more-than-representational spaces, experiments in measurement and value are helping to bring into existence an expansion of the social in terms of an apparent omnipresence of value that is linked to changing relations between the quantitative and the qualitative, the extensive and the intensive, representativeness and partiality. As we and our contributors are only too aware, this expansion of the social also raises questions about how to assess the validity, adequacy and efficacy of measurement in such spaces. It is thus both because of the opportunities and dangers that such developments pose that sociology must continue to put questions of measurement and value, of quantity and quality, of subjectivity and objectivity, at the heart of the discipline.

Notes

1 According to the Crown Prosecution Service, 'special measures' are available to assist vulnerable and intimidated witnesses to give their best evidence in criminal proceedings. The special measures apply to prosecution and defence witnesses, but not the defendant. Special measures are available to defence witnesses in the youth court. It is also a status applied by Ofsted and Estyn, the schools inspection agencies, to schools in England and Wales, respectively, when it considers that they fail to supply an acceptable level of education and appear to lack the leadership capacity necessary to secure improvements.

2 It is worth noting that it is not only in the sociological canon that a wrestling with issues of measure and value is at play, but also in contemporary social theory. Thus in the latter we paradigmatically encounter attempts to overcome the schism between a sociological positivism and a sociology of meaning and interpretation, between on the one hand facts and their measurement and on the other values constituted in meaning systems. Indeed such an overcoming – often by a form of synthesis – has been routinely located as the key criteria of adequacy for contemporary social theory. Given the centrality of these issues of measure and value in both classical and contemporary social theory it is therefore striking that more recent social theory appears to have put such issues to one side.

3 Or REF, Research Excellence Framework, as it has been renamed.

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