

CULTURE, ECONOMY AND THE SOCIAL

Inventive Methods

The happening of the social

Edited by
Celia Lury and Nina Wakeford



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Inventive Methods

Social and cultural research has changed dramatically in the last few years in response to changing conceptions of the empirical, an intensification of interest in interdisciplinary work, and the growing need to communicate with diverse users and audiences. Methods texts, however, have not kept pace with these changes.

This volume provides a set of new approaches for the investigation of the contemporary world. Building on the increasing importance of methodologies that cut across disciplines, more than twenty expert authors explain the utility of ‘devices’ for social and cultural research – their essays cover such diverse devices as the list, the pattern, the event, the photograph, the tape recorder and the anecdote.

This fascinating collection stresses the open-endedness of the social world, and explores the ways in which each device requires the user to reflect critically on the value and status of contemporary ways of making knowledge. With a range of genres and styles of writing, each chapter presents the device as a hinge between theory and practice, ontology and epistemology, and explores whether and how methods can be inventive. The book will be a valuable resource for students and scholars of sociology and cultural studies.

Celia Lury is Director of the Centre for Interdisciplinary Methodologies at the University of Warwick. Her substantive research interests are focused on the sociology of culture and feminist theory. She explores contemporary developments in the culture industry with a special focus on changing cultural forms. Her recent publications include the jointly authored book *The Global Culture Industry: The Mediation of Things* (Polity, 2007, with S. Lash) and the introduction to a special issue of the *European Journal of Social Theory* on ‘What is the empirical?’. More recently, she has become interested in the relations between methods, space and representation in the context of an exploration of the value of topology for social science.

Nina Wakeford is Reader in Sociology at Goldsmiths College, University of London and a visual artist. Her interests include the ways in which collaborations can be forged between social science and design, and the way in which ethnography has been put to use in the design of new technologies. She is particularly concerned with the ways in which contemporary social and cultural theory can play a part in the design process, and how aspects of practice-led disciplines can be brought back into sociology, in particular through science and technology studies. Among her publications are papers on virtual methodologies, queer identities and visual representations in design work.

Culture, Economy and the Social

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The *Culture, Economy and the Social* series is committed to innovative contemporary, comparative and historical work on the relations between social, cultural and economic change. It publishes empirically based research that is theoretically informed, that critically examines the ways in which social, cultural and economic change is framed and made visible, and that is attentive to perspectives that tend to be ignored or side-lined by grand theorizing or epochal accounts of social change. The series addresses the diverse manifestations of contemporary capitalism, and considers the various ways in which the ‘social’, ‘the cultural’ and ‘the economic’ are apprehended as tangible sites of value and practice. It is explicitly comparative, publishing books that work across disciplinary perspectives, cross-culturally, or across different historical periods.

The series is actively engaged in the analysis of the different theoretical traditions that have contributed to the development of the ‘cultural turn’ with a view to clarifying where these approaches converge and where they diverge on a particular issue. It is equally concerned to explore the new critical agendas emerging from current critiques of the cultural turn: those associated with the descriptive turn, for example. Our commitment to interdisciplinarity thus aims at enriching theoretical and methodological discussion, building awareness of the common ground that has emerged in the past decade, and thinking through what is at stake in those approaches that resist integration to a common analytical model.

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**Edited by
Celia Lury and
Nina Wakeford**

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1 Introduction

A perpetual inventory

Celia Lury and Nina Wakeford

How to use this book

Before we begin this introduction, we think it might be helpful to say a little about the organization of the book, and its inclusion of some, but not other inventive methods.¹ In a broad sense, the collection is a response to the current renewal of interest in the politics of method in some social sciences (Burrows and Savage, 2007; Thrift, 2007; Adkins and Lury, 2009; Rabinow and Marcus, 2009), as evidenced by the recent discussion of research methods and dissemination activities that critically engage theory and practice, including participatory and action research methods; performative and non-representational investigations; the acknowledgement of non-human agencies; as well as interdisciplinary and collaborative and beyond-the-academy working practices. It responds and hopes to make a contribution to the ‘new empiricism of sensation’ (Clough and Halley, 2007), to help expand the repertoire of ‘materially innovative methods’ (Law, 2004) and address the limits of the phenomenal. More specifically, the book refers back to a workshop that the editors organized in 2009, and includes chapters based on presentations made there. In thinking about this collection, however, we have also drawn upon accounts of methods of conducting research that are not included here, but are relevant in relation to the patterns (see Chapters 9 and 10) we see emerging in this collection. These include Haraway (1985) on cyborg, Serres (2007) on parasite, Agamben (2009) on apparatus, Berlant (2007) on the case, Fraser (2010) on event, Kwinter (1998) on diagram, Rabinow and Marcus (2009) and Parker (2012, forthcoming) on contraption, Riles (2001) on network, and Stark (2009) on search, all of which are models, ideals or exemplars that we believe deserve imitation.

The collection makes use of an alphabetical listing, an ordering that is explicitly presented in the form of an ‘index’. Although, like numbers, letters may be used not only to list, but also to rank (as in a school report), their use here is purely alphabetical, and is intended to encourage – perhaps even incite – you, the reader, not to read from A through to Z, but rather to make a selective entry into the collection, to use your own principles of inclusion and exclusion, of ordering and valuing. Our hope is thus that the alphabetical list – familiar

from other uses – will nonetheless act as an experimental and alternative ordering to an academic book (see also Pile and Thrift, 2000). We invite you to make your own associations – draw a line – across and between the chapters in ways that we may anticipate but do not want to predetermine. You might want to: establish relations of equivalence between methods; make groups or sets; draw distinctions; compare and contrast; or see how one method is included or configured in relation to others. What always becomes clear, however – if you read more than one entry, no matter what order you read them in – is that inventiveness is not intrinsic to methods; it is rather something that emerges in relation to the purposes to which they are put. The listing of methods is thus also intended to act as a provocation to you, the reader, to consider (more) methods in relation to your own purposes, to begin devising yourself.

You will, in any case, soon find out how each chapter refuses to be ordered by this introduction: they have been left – more or less – to their own devices. Each is written with a different voice, to different effect. The entries deliberately and systematically employ a range of styles of writing. From an editorial point of view, the retention of this diversity of modes of address is a way of acknowledging the significance of the semiotic materiality of the methods they describe and the radical heterogeneity of the worlds that they enact. Disciplinary differences are not erased or minimized, but acknowledged. Nor is there any attempt to present the collection as complete; we do not aspire to either unity or completeness; a fact to which attention is drawn – paradoxically – by the way in which some methods are represented by one entry, while others are represented by more than one. This variability testifies that there is no way to complete a list of inventive methods, not even by doubling or multiplying an entry, no way to fill all the gaps. Yet, although the collection is incomplete, we also believe that, if, as readers, you bring together the chapters together variously, there are many possible books here. The collection is designed as a perpetual inventory (Krauss, 2010): testimony to the irreducibly unstable relations between elements and parts, inclusion and belonging, sensing, knowing and doing.

Beginning, or refrain

The guiding aim in putting together this collection is to provide a resource, an inventory of methods or devices that may be used to conduct research that is explicitly oriented towards an investigation of the open-endedness of the social world. Our hope is that the methods collected here will variously enable *the happening* of the social world – its ongoingness, relationality, contingency and sensuousness – to be investigated. Our belief is that, to address these dimensions of social life, the full actuality of the world, its indeterminateness, what AbdouMaliq Simone describes as ‘the unregulated thickening of relationships among things of all kinds’, it is not possible to apply a method as if it were indifferent or external to the problem it seeks to address, but that

method must rather be made specific and relevant to the problem.² In short, inventive methods are ways to introduce answerability into a problem.³ Further, if methods are to be inventive, they should not leave that problem untouched.

The methods or devices included here are various. They are: anecdote (Mike Michael), category (Evelyn Ruppert), configuration (Lucy Suchman), experiment (Steve Brown; Noortje Marres), list (Andrea Phillips), number (Helen Verran), pattern (Janis Jefferies; Paul Stenner), photo-image (Vikki Bell), phrase (Matthew Fuller and Olga Goriunova), population (Cori Hayden), probe (Kirsten Boehner, William Gaver and Andy Boucher), screen (AbdouMaliq Simone), set (Adrian Mackenzie), speculation (Luciana Parisi) and tape recorder (Les Back). As such, they appear a somewhat heterogeneous collection of research ‘methods’, with some, such as tape recorder, appearing closer to a device or instrument than a method or knowledge practice, while others, such as anecdote, not seeming at first glance to belong to an academic repertoire of methods at all. Many are more easily seen as a method once they are introduced as a verb: to probe, to categorize, to list, to pattern, to record, but still they are heterogeneous. Some are in between a thing and a practice; some are more or less the monopoly of social researchers; others are an everyday activity of ‘lay’ people; some have acquired legitimacy in their use by governments or by business; while others are more frequently deployed by those without authority. Each, however, is discussed here in relation to their use to conduct (popular and professional, lay and academic) research, whether this is in cities in the urban south (screen), computer programming and software packages (phrase, set), the carrying out of a census in Canada (category), socio-technical projects in the UK (anecdote), USA and southern India (configuration), a pharmaceutical chain in Mexico (population), the making of the art world (list, pattern), swarms of swallows and textiles (pattern), soundscapes (tape recorder), the home (probe), the valuation of natural resources (number), reality television, social and developmental psychology and blogs about green living (experiment), thought experiments and AI (speculation).

One of the principal claims the book makes is that there is a need to (re)consider the relevance of method (Fraser, 2008, 2009) to the empirical investigation of the here and now, the contemporary (Rabinow and Marcus, 2009). The methods the book includes make this possible because of the ways in which, as they are discussed here, they require their user to reflect critically upon the value, status and significance of knowledge today. So, for example, the methods of anecdote, category, configuration, phrase and population do not presume that the subjects and objects of the research imagination are discrete, or stand in external relation to each other, although they allow such distinctions to be drawn. There is no presumption that time and space operate in a standardized relation to each other; rather the methods of list, pattern and screen open up the issues of scale, calibration and measurement. They do not rely upon external measures but are rather revealed to be ‘things that scale’ (Tsing, 2004; Holbraad and Pedersen, 2009). Nor do the methods necessarily privilege either the quantitative or the qualitative: number is set alongside

photo-image and anecdote, while others – such as set, population, pattern – draw on mathematical thinking in ways that do not adhere to a quantitative-qualitative divide. In addition, methods such as the photo-image and the probe do not presume the senses by which the social world is known, the medium in which data should be collected or argument is best communicated. They do not take the human as the only measure of the significance of the world, or as the only source of agency, as the discussion of cats and dogs in the case of the anecdote, swallows and ants in pattern, the chemical in relation to population, and batteries in the discussion of the tape recorder reveal. Instead, speculation and the other methods included here enable research to follow forked directions, to trace processes that are in disequilibrium or uncertain, to acknowledge and refract complex combinations of human and non-human agencies, supporting an investigation of what matters and how in ways that are open, without assuming a single fixed relation between epistemology and ontology.

While the methods collected here are focused on the *social* world, the book is not narrowly disciplinary. Rather, there is an exploration of interdisciplinarity through the juxtaposition of different disciplinary uses of methods and, in some cases – such as the list, the probe and the pattern – through explicit reflection on the possibilities and limits of interdisciplinary or cross-disciplinary approaches. Many of the methods discussed have, in any case, been developed in movements across and between disciplines in the social sciences, the humanities and the natural sciences. So, for example, the device of phrase has a linguistic and literary critical history but is taken up here in relation to computing and software studies, while the methods of experiment and pattern have multiple histories and may be situated in relation to both art and science. The refusal of the methods collected here to assume the operation of disciplinary distinctions is not meant to imply that disciplines do not matter, however. Rather it is intended to invite recognition of how methods participate – variously – in the making of disciplinary distinctions as well as interdisciplinary space.

There is, we would suggest, much to be gained from putting histories of social scientific method in relation to those of other traditions, including, for example, art movements. Jenny Shaw, for example, observes, ‘If Surrealism and sociology appear to be light years apart from one another . . . they are not, and Mass Observation is the link’. For Mass Observation, she says, art and sociology were indivisible. Its adherents foregrounded the importance of irrational and subconscious processes; disruption and shock, rupture and breaks in routine, were used as methods of perception. In contrast, Ben Highmore has suggested that Mass Observation practiced a kind of ‘radical positivism’ that built on surrealism and yet differed from it: Mass Observation, in his view, insisted on attending to the everyday as a mass project of collecting ‘facts’, not so much commenting on the everyday as becoming coterminous with it (Highmore, 2000: 16). Such contested histories are necessary to understand the potential inventiveness of methods; that of Mass Observation,

for example, provides a valuable context for the dream recorders that are one example of probes discussed by Boehner, Gaver and Boucher.

Methods that have the capacity to be inventive are also, as Noortje Marres puts it, ‘multifarious instruments’ in the sense that they have a variety and variability of purpose. The book speaks to the way in which methods such as the list, the tape recorder and the set may be encoded in everyday and specialized technologies and assemblages, and addresses the challenge currently posed to researchers thinking about the distinctiveness of academic and disciplinary knowledge when it is set alongside commercial and everyday knowledge-making practices. Indeed, this challenge is the explicit topic of some of the chapters. So, for example, Marres herself describes experiments in living as an example of ‘collective practices of researching social and cultural change, as engaged in by actors who do not necessarily identify themselves as “social researchers”’, and Simone focuses on the everyday uses of screening as a method in urban space, pointing out that, since people in cities ‘step in and out of various “shells” of operation’, they are necessarily involved in carrying out ‘popular research’, while Andrea Phillips’ discussion of web-based art listings highlights the relationship of lists and ranking to commercial values and the market. She writes, pointedly:

The conditions of production of such devices in art do so at the behest of an economy of alienation that is rarely acknowledged, even when artists turn to dispositifs that enable a relation, broadly, to the realm of the social (for this is what the list does).

The methods described here are thus not the monopoly of academics alone. Indeed, we would emphasize – as a way of resisting the fears raised by the notion of a crisis in empirical research in academic social science (Burrows and Savage, 2007) induced by the recognition that academic sociology is becoming less of an obligatory point of passage for the powerful agents of knowing capitalism – that methods of social research never have been so restricted in their use. They have always been distributed. Nevertheless, we recognize with Phillips that relationality and participation are dominant tropes of knowing capitalism,⁴ and with Marres that the ‘resources and techniques of social research are being redistributed among a variety of agencies inside and outside the university’. Indeed, Marres observes that the proliferation of social methods involves not just a displacement or ‘democratization’ of social methods – as in the slogan ‘we are all social researchers now’ – but is rather a question of the (re-)organization of processes of knowledge-making’.

Inventive methods – like any other methods – are, for good and ill, caught up in what Helga Nowotny (2002) describes as the expansion of the present, in which there is an ongoing maximization of the agencies involved in social life. As Adrian Mackenzie puts it in his discussion of the method of set-making, there are more and more techniques to determine the excess of the actual, ‘to present it, to manage it, to undo it or to politicize it’. But if, as Marres says,

‘the active participation of social actors in the conduct of research is today increasingly recognized across social life’, *and* we cannot – and should not – foreclose the ‘multiplicity of purposes’ of social research, *and* there is no necessary relation between problems, solutions, invention and critique, should we not be a little more precise about how the inventiveness of the methods collected here are to be understood?

Inventiveness does not, for us, equate to new. Many methods, such as experiment, pattern or population, have a long history, although others, such as the anecdote, screen or speculation, are marginal to the established histories of natural and social sciences. Some – such as probe or phrase – are self-evidently methods in the making.⁵ What unites them, however, is that they are methods or means by which the social world is not only investigated, but may also be engaged. Indeed, the book as a whole seeks to open up the question of how methods contribute to the framing of change; it aims to enable change to be understood not only as complex, contradictory and uncertain, but also as everyday, routine and ongoing: as something in which methods of social research are necessarily engaged. To describe them as inventive is to seek to realize the potential of this engagement, whether this is as intervention, interference or refraction (Haraway, 1992; Barad, 2007). Our proposal is that this potential can be realized through an exploration of how the knowledge of change they permit need not be limited to ascertaining what is going on now or predicting what will go on soon, but may rather be a matter of configuring what comes next. And here we are understanding ‘next’ not simply as a simple spatial equivalent of ‘new’, but rather as a way of exploring the potential of method to gain a purchase on the notion of adjacency outlined by Paul Rabinow in his discussion of the contemporary:

“Adjacent: in close proximity . . .” Neither the overdrive of the universal intellectual nor the authoritative precision of the specific. Rather: a space of problems. Of questions. Of being behind or ahead. Belated or anticipatory. Out of synch. Too fast or too slow. Reluctant. Audacious. Annoying.
(Rabinow, 2007: 40–1)

Let us try to expand on the annoyingness of inventive methods a little more – their capacity to be an irritant, as Michael says of anecdotalization – by way of a discussion of some of the ideas of the historian of science, Hans-Jörg Rheinberger. In his study of the development of an experimental system for synthesizing proteins in a test tube, Rheinberger (1997) uses the Derridean term ‘differance’ to characterize the specific, displacing dynamics that distinguish the research process he describes. The experimental system, he says, is involved in a process of differential reproduction. More exactly, he proposes that an experimental system that is organized in a way such that the production of differences becomes the orienting principle of its own reproduction is governed by, and at the same time creates a kind of subversive movement. Inventive methods, as we understand them, have the capacity to display a kind

of self-displacing movement; that is, they comprise processes of imitation and repetition in which a surplus is created that allows an event – what happens, the happening of social life – to become inventive. Matthew Fuller and Olga Goriunova ask, for example, ‘How does a phrase assemble itself together to become a real unity of an order and ensemble that is not predetermined?’ and reply that this process is achieved in the differential reproduction of a system of which the phrase is a part, or rather: ‘The permutational movement of such algorithms, the data they come into composition with, the multiple systems they are embedded in is itself expressive, that is, exudes phrases’. Evelyn Ruppert says of the category that it is ‘a device that travels’; Lucy Suchman says of the artefact that it is produced through a method of configuration that it is both fixed and fluid: ‘fixity is an effect of reiterative enactments’ and ‘fluidity articulates the inherent multiplicity of objects in ways that facilitate their travel’.

Our proposal, then, is that the inventiveness of methods is to be found in the relation between two moments: the addressing of a method – an anecdote, a probe, a category – to a specific problem, and the capacity of what emerges in the use of that method to change the problem. It is this combination, we suggest, that makes a method answerable to its problem, and provides the basis of its self-displacing movement, its inventiveness, although the likelihood of that inventiveness can never be known in advance of a specific use. Indeed, in Parisi’s discussion of speculation, invention is necessarily a matter of retroduction.

Even within the tightly regulated experimental systems that Rheinberger describes, ‘one never knows precisely how the set-up differentiates’ (Rheinberger, 1997: 79–80). Thus, he emphasizes what he calls the ‘Blind tactics of empirical wandering’, and says that ‘Event-riddenness . . . is at the heart of research experiments’. As Simone says of the use of screens in urban space: ‘Research is then not a matter of identifying locations but explicitly inventing them in a context where residents endeavour to act as if the undecidability of their location in a larger world either doesn’t exist or doesn’t matter’. Along similar lines, Fuller and Goriunova advise that a phrase ‘is a lucky device; it can occur, become fashionable or firm, can dilapidate. It may last only a moment’, while in his discussion of the set as method Mackenzie draws on Badiou to emphasize the importance of ‘an always aleatory decision which is only given through its effects’. All this is a way of saying that inventiveness is a matter of use, of collaboration, of situatedness, and does not imply the ineffectiveness of methods, only that their inventiveness – their capacity to address a problem and change that problem as it performs itself – cannot be secured in advance. Thus, while we might suggest that reflexivity in the pursuit of relevance is one of the principal requirements for anyone wishing to make inventive their own use of methods, inventiveness cannot be given in advance. Indeed, it is this characteristic that necessarily makes the book far more open-ended than a conventional set of ‘how-to’ recipes for research, or so we hope.

Devising methods

In trying to elucidate further how or what it might be about methods that afford the possibility of inventiveness, we were drawn to the term ‘device’, a word that has multiple everyday meanings, including an object, a method and a bomb. To adopt an anecdote, a screen or a list as a device is to make explicit how a method and its object are linked to each other and with what potentially explosive – or inventive – effects. Indeed, as Parisi observes in her discussion of the method of speculation, the notion of the device not only admits that object and methods are mutually constitutive, but also acknowledges that it is their relation that forces us to confront the new. As Katie King describes them, devices are ‘jumpy materializations of practices, transforming and dissimilar agencies rather than elegantly inert guarantors of epistemological simplicity’ (King, 2010).

In social and cultural analyses the notion of device has a lineage that may be traced back to Foucault’s notion of *dispositif* or apparatus, which he defines as:

a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions – in short, the said as much as the unsaid. Such are the elements of the apparatus. The apparatus itself is the system of relations that can be established between these elements.

(Foucault, 1980: 194)

He continues this definition by suggesting that there is always an interplay of shifts of position and modifications of function among the elements of the apparatus, and that an apparatus has a strategic function, that is, it is organized in response to urgent needs. Giorgio Agamben draws on and extends this understanding:

Further expanding the already large class of Foucauldian apparatuses, I shall call an apparatus literally anything that has in some way the capacity to capture, orient, determine, intercept, model, control, or secure the gestures, behaviors, opinions, or discourses of living beings.

(Agamben, 2009: 14)

Importantly, then, locating the notion of device in relation to that of apparatus helps make clear that a device or method is never able to operate in isolation, since it is always in relations that are themselves always being reconfigured.

In this collection, for example, the device of the probe described by Kirsten Bohner, William Gaver and Andy Boucher is, typically, a carefully crafted artefact that ‘bears the fingerprints of a designer’, while the device in Les Back’s chapter is quite evidently also a thing, a tape recorder. But both

chapters situate their device or method in relation to a complex ensemble of practices that destabilize any sense that a device – even when it is a thing – is merely a tool, able to be used always and everywhere in the same way. So, while tape recorder is the title under which Back's chapter enters this collection, it might also – with a different emphasis – have been entered under 'interview', 'sound' or 'voice'. As Back reflects, the foregrounding of the tape recorder as device recognizes the centrality of instruments to social research – and here he draws an analogy with the doctor's stethoscope, but importantly also invites consideration of the part such instruments play in a complex, and constantly changing constellations of things, procedures, abstractions, mediations, sensitivities and sociabilities in the apparatuses, configurations or assemblages of social research. Focusing on the tape recorder as device enables Back to show how neither a 'thing' such as a recording machine nor a 'practice' such as the method of interviewing are static techniques that may be carried out in the same way, always and everywhere, but rather, brought together in a specific way, produce a very particular 'turning up of the background' of sound. And, importantly, the method of bringing together of things, techniques and practices is itself included here as configuration (Suchman), while it has been elaborated by others, elsewhere, as assemblage (Deleuze and Guattari, 1987; Law, 2004; Ong and Collier, 2005; DeLanda, 2006) and contraption (Rabinow and Marcus, 2009; Parker, 2012, forthcoming), as well as, of course, apparatus.⁶

This emphasis on the capacity of the device to capture that is associated with its links to the notion of *dispositif* also feeds into recent understandings of the performativity of methods in the enactment of the social (Haraway, 1992; Barad, 2003; Law, 2004; Law and Urry, 2004; Mol, 2005; Callon *et al.*, 2007). In this way of thinking, devices act as a hinge between concepts and practice, epistemology and ontology, the virtual and the actual, opening a door – or perhaps better acting as an automobile clutch (whose operation is necessary for the shifting of 'analytic gears' in the words of Cori Hayden) on to the practical investigation of the social world. Devices are 'terms for thinking about processes' (Wardrip-Fruin, 2009). Perhaps most importantly, they 'articulate actions, they act or make others act' (Callon *et al.*, 2007: 2). As Mike Michael says of the anecdote, the device 'not only reports events, but acts on them'; as Fuller and Goriunova assert in relation to phrases, 'they are something that happens that makes something happen'; and as Lucy Suchman says in relation to configuration, it 'comprises both a method through which things are made, and a resource for their analysis and un-/re-making'.

The term 'device' is also appealing to us, then, because it helps us to recognize that knowledge practices, technical artefacts and epistemic things (Rheinberger, 1997) are encoded in everyday and specialized technologies and assemblages in which agency is no longer the sole privilege of human actors. It restores an often-overlooked objectivity, materiality or thingness to methods; devices body-forth and grasp the problem they are designed to study (Karpik, 2010). A guiding image for the collection in this respect is that of the short

film made by the artist Richard Serra: *Hand Catching Lead* (1968), discussed here by Andrea Phillips. A forearm and hand are framed by the film, the hand repeatedly opening and closing, and as it closes, sometimes catching a scrap of metal, pieces of which are repeatedly dropped from the top of the frame. The film speaks to the understanding of devices we are proposing, as something' such as a hand, caught in the act of catching, catching itself – as well as, perhaps, something else – in an act, somewhere between a sensing, a doing and a knowing. The notion of device is thus also helpful to us because it draws attention to the existence of methods as variously constituted, distributed material-semiotic entities and to their complicatedly (re)presentational and temporal character.

However, although the notion of device is welcome insofar as it draws attention to the semiotic-material relational-doing-thingness of methods, the term can sometimes seem to imply a collapsing of action and effect, as Suchman makes explicit in her discussion of configuration. In this regard, it can obscure what *Hand Catching Lead* makes evident: the hand – or device – does not always catch what it seeks to grasp. So it is to draw attention to the uncertain but not unorganized relation between the action of a method and its effects that the term 'inventive methods' is (slightly) preferred here to that of 'devices', although in fact we and our contributors will use both terms more or less equally. In identifying this preference, we want to emphasize that the grasp of a device is not a fix, and that this lack of fixity is not necessarily a problem: so, for example, Boehner, Gaver and Boucher write in relation to the probe, 'Uncertainty is valued as a productive state for exploration rather than a condition to be resolved'; while Suchman suggests that contingency should be planned for in making configurations through a systematic process of under-specification. As John Law says elsewhere, using devices such as allegory can make space for ambivalence and ambiguity (Law, 2004).

In what follows, then, we will focus on three further aspects of devices or inventive methods. The first explores the specific and situated relations that are established by inventive methods to their problems or contexts of use. The second considers the generalizability of the knowledge that is created in their use. The third concerns what we believe to be a changing relation between the sensible and the knowable in the contemporary social world, and the affordance or grasp on this world offered by inventive methods.

The problem at hand

First, then, let us turn to the relation to a problem that is afforded by inventive methods; that is, where and how and to what effect can they be used? On the one hand, as noted above, inventive methods or devices are tools, instruments, techniques or distinct (material-semiotic) entities that are, in part, alienable from specific problems or situations, able to be used in multiple contexts and continually introduced into new ones (Fuller and Goriunova). On the other, they are also always part of an ensemble, assemblage, configuration or

apparatus, modified in specific uses, undergoing transformation – being brought to life, body-ing forth, grasping – in relation to particular situations, particular problems. For example: ‘The probes are not customized for a particular individual, yet they are customized for a project, and their situated nature is evident in their content and appearance’. Devices are thus not simply reproducible in multiple sites but are, rather, modifiable and modified in use. In the case described by Cori Hayden, for example, the method of making a population emerges differently when its operations are thought through the problems of chemistry rather than, as more usually, those of biology. In relation to the problems of the chemical, the method of population-making develops its capacity as a reproductive multiplicity by describing and producing – grasping – non-genealogical forms of reproduction, such as imitation, repetition and replication.

A further characteristic of an inventive method, however, is that its (repeated) use is always oriented towards making a difference. So, for example, Boehner, Gaver and Boucher assert of probes that, ‘Developed in a design context, their purpose is not to capture what is so much as to inspire what might be’, while phrases are methods that are ‘a means of entering, triggering and sensing into the grammars and diagrams through which . . . techno-social dynamics can be built, felt, understood and changed’ (Fuller and Goriunova). Let us explore this orientation towards making a difference further, by exploring one method in a little more detail, the method of the anecdote as described by Mike Michael. As he describes it, it is the way in which the telling of an anecdote sets up a relation to a specific context that enables anecdotalization to make a difference, and making this difference is what gives the anecdote both relevance and efficacy; it is what enables the anecdote to circulate. In the telling of an anecdote as a device or method, it is not that the researcher is made to accommodate the anecdote to the problem researched, or that the problem to be researched is cut down in size or complexity by the anecdote, but that they are defined anew in relation to each other, *and* in the process the relation of researcher to researched is transformed. If the (new) line it draws between itself and its context is successful, Michael suggests, the anecdote will add ‘something new (or at least new-ish) to the conduct of research’; it will produce ‘uninvited topics, unexpected insights, and untoward issues should emerge’.

To summarize: an inventive method addresses a specific problem, and is adapted in use in relation to that specificity; its use may be repeated, but the method is always oriented to making a difference. This orientation is linked, we suggest, to its double force (see Suchman for further discussion of this notion, taken from Castañeda, 2002): that is, to both its ‘constitutive effects’ and its capacity to contribute to its own ‘generative circulation’. This double force is what enables a method to act as what Marres calls a ‘multiplying genre’: to continue the example of the anecdote, as method it both performs itself and is ‘performative of researcher and researched’. To take another example: the method of population-making – when its substance and operation

are thought through the chemical – multiplies in non-reproductive ways, most notably in the example of the Mexican pharmacy chain *Farmacias Similares* discussed by Cori Hayden, by processes of copying, imitation, repetition and replication. In short, that an inventive method can make a difference is linked to the way in which it makes itself, and in this making produces relations beyond itself. And this, we want to suggest, is a consequence of the particular ways in which such methods are able to articulate a problem – to make a problem answerable – through the operation of their boundaries.

To explore this further, let us move to another example: that of the *Getting Things Done* software discussed by Adrian Mackenzie in his discussion of the inventive method of the set. Mackenzie's focus is the operation of an algorithm that is used to sort what to include in a set (things to be done in the future) and what to exclude (things to be done immediately or not to be done at all). As he describes it, the algorithm organizes 'the problem' of the need for such a list to be both open and closed through its temporal organization of the method of the clopen set. The inventiveness of this method is to solve the problem of making a finite list of the never-ending things there are to do by telling the user what should be done next, repeatedly. The problem is not solved once and for all but, by re-presenting it, by giving it new (in this case temporal) limits – through the recursive organization of the set's own boundaries in relation to 'the same-but-ever-changing' context of things (still) to be done. Sadly, while the software may thus help you deal with anxiety that you have too much to do, it does not change the situation in which there are always more things to be done.

Inventive methods thus recognize specificity by addressing and including 'heres' and 'nows', but only as they are constituted in relation to 'theres' and 'thens' that are brought into being by the methods' own constitutive, self-organizing effects in relation to the context of a problem. In short, inventive methods grasp the excess of specificity that is always present in the actual by making a relation to elsewhere as they make themselves. Janis Jefferies says, 'pattern can always exceed itself and acts as an open-ended exchange between viewer and audience, text and reader'; Fuller and Goriunova show how phrases are 'one of a series of micro-to-macro objects, entities in their own terms at a certain scale, but also . . . mediations of part-whole relations'; Simone shows how screens take 'what intrudes from both the inside and outside, that comes from within and elsewhere – the strange that is familiar, and the familiar that is strange, and sutures a working connection'; Back says that sound flows 'invite an appreciation of how the "here and now" connects to a global elsewhere as well as the past'; Suchman says that the method assemblage of configuration can be understood as 'a device for articulating the relation between the "insides" of a socio-technical system and its constitutive "outsides", including all of those things that disappear in the system's figuration as an object'; while Michael claims, 'the anecdote is . . . useful for explicitly incorporating the performativity of the research – i.e. the way that research is not a mere reflection of something (e.g. one's experiences in relation to social

or cultural process) out there, but is instrumental in, and a feature of, ‘making out theres’.

More generally, we might say that the inventiveness of a method is to do with its ability to generate its own boundary conditions (Rheinberger, 1997: 20): to organize itself – to self-organize – in a (changing) relation to a (changing) context. Put very simply, this is a matter of exclusion and inclusion, closedness and openness to context, to act as what Simone describes as a semi-permeable boundary, to operate ‘unspeakable frontiers’. Or rather, since inventive methods are neither totally inclusive nor exclusive, neither completely open nor completely closed, but instead are linguistic, perceptual and material manoeuvres that are able to give themselves over to the problem at hand without turning themselves in (Fuller and Goriunova), able to ‘turn up’ the background (Back), while ‘tuning in’ to the scale, texture or experience of a problem (Fuller and Goriunova), they can be seen as techniques for differential reproduction (Rheinberger, 1997; Mol, 2005). They are able to grasp the here and now in terms of somewhere else, and in doing so – *if* they can also change the problem to which they are addressed – they expand the actual, inventively (Nowotny, 2002).

The specific, the general and the universal

Our second point concerns the generalizability of the knowledge produced in inventive methods, an issue that is closely linked to their double force. To consider how this is so,⁷ let us take the example of number. In her contribution to this collection, Helen Verran proposes that the remarkable capacities of numbers are two-fold: they participate in processes of ordering and in representing that order as value. The process of ordering involves the use of numbers as ordinals, while the valuing of order is primarily a function of number as cardinals. This dual role of number – ordering and valuing – is conflated in many routine everyday and scientific uses of number, in which their generalizations of whole-to-part and one-to-many are held together in the indexical use of number as a fixed (external) measure, a metric, or unit of quantity. In such uses, numbers act as coordinates of signification in a particular kind of way – they operate as apparently neutral, external markers of order and value in one; as Badiou says, ‘What counts – in the sense of what is valued – is that which is counted’ (Badiou, 2008: 2).

The indexical use of number in relation to an external metric that holds together the one-to-many and part-whole relations in one has been central to the ways in which methods used in the ‘here and now’ have been translated ‘always and everywhere’. The work required to make this and other translations successful – that is, to secure the knowledge number produces in specific practices as universal – has been described by Bruno Latour (2000) as the work of extension in time. Latour proposes that recognizing this work should compel us to accept that the history of epistemic things (problems, measures, standards, facts, hypotheses) is an always relative existence: their capacity to

endure, he says, is relative to the circumscribed and well-defined spatio-temporal envelope of their network of production. What is interesting to us, however, is that in many contemporary numbering practices there is no aspiration to the making of the spatio-temporal universalisms 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. In these operations, a wider range of generalizations than universalization alone is given legitimacy. Problems and solutions are made in (many, multiple) general (not one, universal) space-times.

So, for example, in numerated entities such as models that simulate movements in city environments (Harvey, 2009), in the many mappings now being produced that are locative not territorial (Thrift, 2004), in measuring or judgement tools such as brand valuation techniques (Lury and Moor, 2010), the indexical capacities of numbers to order and value are brought together in relations in which the performative capacities of number are extended and intensified. In these uses, numbers open up new kinds of relations between the specific and the general as their inventive potential is enhanced by their use as indices of the (super-)positionality of multiple, coexisting relational coordinates. They produce what Nigel Thrift (2004) calls generalized spaces of 'awhereness', that is, they are constituted in and engender spaces of (post- or more-than-)representation that are not best understood in terms of external spatio-temporal coordinates of signification, but in which the coordinates participate in surfaces that are spaces in themselves, as operators in surfaces of coordinatization (Adkins and Lury, 2009). To put this in the terms of the material semiotics adopted by Verran (2001), the usefulness of one of the most important capacities of indices – to point to the actual, to indicate 'here', 'now' – a usefulness that has historically been limited by the positional situatedness of the relations it enacts is now being expanded as a resource for inventiveness by not only number, but also other methods or devices in which situatedness is understood not as a position but as a relation. These are, potentially at least, the relations of multiplicity.

In generalized spaces of 'awhereness', it is possible to explore the multiple possible states that a system may have, since entities are without extrinsic coordinatization, and are not limited by extrinsically defined measures or the assumption of a single unity. As Fuller and Goriunova say, these are spaces 'where we do not know how to exist, where we are not, and where, nevertheless, we are'. It is in such spaces, indeed, that methods are increasingly required to be inventive, for what is of interest in such spaces is that tendency is more and more 'part of the actual . . . potential gains potency, and the possible is more and more part of the existent'. As Steven Connor notes, 'The strictness of the dichotomy between the actual and the possible is in large part a function of the kinds of relation we have to the latter' and 'It is possible to project and stage a much wider range of contingencies and possible relations to them than ever before, and those contingencies become more and more

part of the tractable actual' (Connor, 2009: 9 of 12). Inventive methods are devices that are able to expand and explore the possibilities of this latency and laterality, to support the emergence of difference – or differentiation – by making relations in processes of generalization.

Inventive methods are thus devices of auto-spatialization, whose movement as Michael says of the anecdote, is both topological and nomadic: topological in that they bring together what might have seemed distant, and disconnected and nomadic in that they are processual, iterative, emergent and changeable. This is evident, for example, in Mackenzie's description of the introduction of movement into social life by way of the operation of clopen sets, Back's embrace of the sweep of sound, Ruppert's account of the iterative use of categories to make subject-citizens anew in the census, and Simone's discussion of the role of screening in the making of 'cognitive phase spaces'. Topological and nomadic, fixed and fluid, inventive methods have a multiple capacity for generalization that is precisely not monotheistic universalism.

But this capacity of inventive methods for generalization – to proliferate, to show up anywhere as Simone puts it – raises a number of concerns for academic and other researchers, including the problems of how to defend the value of the always relative existence of epistemic things, and the special legitimacy ('rigour') and distinctiveness or not of disciplinary knowledge. It is perhaps for these reasons that Verran, for example, seeks to make explicit the generative capacities of number, to develop our 'feeling' for number – so that we know how to judge the methods by which we make knowledge. Such concerns are also an explicit focus of discussion in some of the other chapters, including Ruppert on the category, Phillips on the list, Michael on the anecdote, Simone on the screen, Brown on the experiment, Mackenzie on the set, Parisi on speculation, Bell on the photo-image and Marres on the experiment in living.⁸

Let us focus on the last three. In her philosophical discussion of speculation, Parisi explicitly cautions us to be careful in our use of generalization. She draws on the philosopher Whitehead and others to make it clear that the process of generalization is not to be confused either with an appeal to a ('bigger', 'more inclusive') category, as with deductive method, or with a proved fact that can be universalized to others, as with an inductive method. But she also suggests that generalization – or at least the generalization of speculative reason – cannot make use of the concept of set as a basic concept – in contradistinction to the approach developed by Badiou and outlined by Mackenzie. This is because to generalize in her view means to describe the non-separability from particular rules of an object not as a one-to-many relation as she says is characteristic of set thinking, but as a constructivist endeavour 'in the nature of finite, actual, terminal entities'.

In her discussion of the contrast between the photo-image and the sociological text, Bell also draws out the problems of generalization: as she says, 'in the movement from image to text (as from text to image), there yawns

a crucial panoply of possibilities, of tensions, of affirmations and contradictions'. Using the case of the book *Now Let Us Praise Famous Men* (2001; first published in 1941), with images by the photographer Walker Evans and text by James Agee, Bell highlights these tensions, focusing on what she sees as the possibility that the 'viewer's response will be one that contents itself with the sense of singularities, or otherwise of a "shared humanity", that routinely accompanies systematically reproduced inequities rather too easily'. This too-easy generalization is linked in her analysis to the specific mode of circulation associated with the image, that implicit in the photographic contract, in which 'the agreement to allow an image to be made is also an understanding that it may circulate and be witnessed'. For Bell, the sociologist's task 'cannot be content to leave it as undifferentiated as that; ours is a more critical, and a more political task'. The way in which an image can 'open up' is, she says, a process that 'cannot be captured as a positivity for social science, not least because it is not something that is in our control'.⁹

In Marres' discussion, the focus is also on the way in which methods are currently proliferating, enacting the social, making spaces: she describes in particular how experiments in living are multiplying across social life, circulating as a genre of publicity,¹⁰ and asks whether and how the circulation of social research devices can be productive for social science. (Michael too observes of the anecdote that it is 'for the telling'; they 'seem to demand to be told, to be put into circulation'.) Marres observes how these processes of circulation are linked not only to the epistemology of the method in question but also to ontological politics, a distribution of agencies, techniques and bodies. She notes how living experiments are conducted by a range of government, scientific and for-profit organizations as well as individuals; and that they are used to serve a variety of objectives, which may not always be clearly distinguished, but range from 'technological innovation to marketing to awareness raising'. The conclusion Marres draws from this multiplicity of purpose, however, is 'that to the extent that some of these purposes are in tension with those of social research, sustainable living experiments must be defined as a critical site of research'. Inventive methods are critical for Marres not only because they are a way that (academic) social research may be contested, but also because they allow that social research can be renewed by being put in relation to – being put into alignment with – researching arrangements that are 'configuring in/as social practice'. As she says of sustainable living experiments conducted by, among others, journalists, mothers, engineers, policy-makers and artists:

They invite us to focus not necessarily on what are the distinguishing features of social science that set it apart, or allow it to be demarcated, from research conducted elsewhere in society. But rather to explore how the circulation of social research techniques across social life can be rendered productive for social science.

This is an argument that has parallels with that developed in anthropology by George Marcus in his advocacy of para-ethnography – a ‘collaborative’ mode of research with expert subjects who are neither natives nor colleagues, but counterparts (Holmes and Marcus 2005; Marcus, 2005), and also, rather differently, by Michel Serres in his provocative discussion of the para-site (Serres, 2007). For Marcus, the need to consider new kinds of collaboration is not simply a response to the identification of new ‘expert’ research subjects (for example, elite knowledge workers), but instead is a response to a situation in which ‘spontaneously generated para-ethnographies are built into the structure of the contemporary and give form and content to a continuously unfolding skein of experience’ (Marcus, 2005). Indeed, Ruppert’s discussion of the ways in which the putting into circulation of census categories contributes to a process of double identification of both state and subjects can be seen as an example of this. It is a kind of ‘articulation work’. Ruppert writes:

The question then is not how to improve techniques such as censuses to better ‘capture’ or describe the social world ‘out there’ but to examine how these very techniques are involved in both making up and legitimizing particular versions of the social world. From this perspective debates about whether categories of people are ‘real’ or ‘constructed’ are redundant for if we attend to the inventive capacities of categories in the ordering of our lives and that of others we see that categories have a formative and transformative potential. Indeed, it is a potential that has and can be activated by subjects.

In a similar spirit, Suchman cites Helen Verran’s proposal to develop “‘working knowledges together”, that is, negotiating the creation of new, partially shared imaginaries without – and this is crucial – relying on one homogenizing translation into a dominant party’s terms’, while Simone asks of people living in cities: ‘How do residents then perform this research; and if such research is a critical dimension of urban life, how is the research itself “researched”?’’. Inventive methods as we understand them are one response to this question, ways of ‘configuring possibilities for residents of a district to be in a larger world together – in ways that do not assume a past solidity of affiliations, a specific destination nor an ultimate collective formation to come’.

The sensible and the knowable

The visibility and speed of expansion of the multiple generalized spaces of ‘awhereness’ in the continuously unfolding contemporary is undoubtedly partly because ‘the sheer amount of calculation going on in the world has undergone a major shift of late, as a result of the widespread application of computing power’ (Thrift, 2004: 586). But the existence and generalization

of such spaces is not new or a consequence of either computing or numbering practices alone, as the methods described here attest. As Simone writes:

in contexts where once relied upon mediations grow weak, where clear interpretations of what is taking place are difficult to make with confidence, and where individuals feel they have few opportunities to make recourse to higher authorities or arbitration, individuals ‘set screens’ all of the time.

And once the capacities of the methods described here to create generalizing spaces of ‘awhereness’ is acknowledged, there follows a recognition of the importance of the properties of the medium – or media – of methods for whatever inventiveness happens. For example, that a probe is a handcrafted item, that it is ‘tactile and situated’, designed for a specific project, means that the researcher is not only able to register possibility in thought or calculation alone, but also to experience the haptic (as also described by Jefferies in relation to pattern), to ‘hold the possible in our hand’ (Connor, 2009: 9 of 12). Different methods support the methodological coordinates of signification – icons, indices and symbols, material graphemes, and various kinds of combinations between them, in different ways, and as a consequence have different material-semiotic capacities to introduce answerability into problems.

The inventive methods collected here variously make it possible to address the complex relations between the sensible and the knowable by deploying what Serra calls ‘the logic of materials’, and thus have different affordances for generalization. As Boehner, Gaver and Boucher put it, that a probe is specially designed for a project ‘does not mean that the knowledge that emerges in its use is not generalizable, but that the generalization it makes possible necessarily takes place through the mediation of the matter of design’. Marres quotes Gay Hawkins, who proposes that what is distinctive about living experiments is that they ‘involve intensities of the body’ and as such may enable more intimate ways of ‘understanding how new habits and sensibilities emerge’; and Simone proposes that the surface of social life ‘no longer “screens” anything, but registers the body as immersed in the immediacy of experience’. What is being pointed to here is the way in which the materials and media of research are also agents – they have agency – in the research process, and this agency should not be seen as delegation, but as translation.

In his chapter, Back identifies the importance of the tape recorder as a device that stabilized the interview as a method of social research because of its capacity to ‘give voice’ to human subjects. He quotes early adopters of the tape recorder observing that, in contrast to what emerged in interview note-taking, ‘you do get something which is heightened and more vivid and less hesitant, and smoothed out, by using those little tape recorders’ (Marsden, 2010: 14). But he also suggests that, over time, the technological capacity to record voices accurately meant that researchers became ‘less observant, less involved and this minimized their attentiveness to the social world’; a particular way of listening was stabilized in the use of the tape recorder to assist in

conducting interviews, closing down the interviewer's other senses, helping to fix the subject of the interview as an authorial phenomenological consciousness. As he mourns the death of his tape recorder, Back welcomes the possibilities afforded by other devices to access 'auditory life', to extend what might count as data beyond 'recording human voices that are expected to tell the truth about society', and engage the 'surface of sonic vitality'. The traditional interview can – in relation with a variety of recording devices – enter the sociological imagination with an expanded set of affordances, beyond voice, including the material properties of sound. Such properties can themselves be explored and experimented with as indices of the relationality of subjects, objects and spaces: interviews can afford not only subjective depth, but also environmental acoustics and objectival volume.

What we want to emphasize here is the sensory plenitude afforded for knowledge and action by inventive methods. Such methods enable us to acknowledge that we are in *medias res*, in the middle of things, in 'mid-stream, always already embedded in a situation, one both settled and unsettled' as Rabinow puts it (Rabinow, 2007: 8). Simone, for example, describes the screen as 'a neurasthenic surface of the interplay of various sensations – visual, auditory, olfactory, gestural, and haptic – applicable to all cities'. And while the probes discussed by Boehner, Gaver and Boucher are created by a designer, the activity of screening used in research by city residents is, Simone says, less stable; it is 'a kind of probe involving various instances and forms of activation of which the individual is either an explicit or implicit target'. In these uses, the screen is a membrane, a mediation of interchange, a tissue 'that relays, switches, speeds up and slows down "the traffic of semiosis"'. Such a device, with its capacities for reflection and projection, 'a switchboard of connections', makes it possible to navigate in a space where 'on the one hand, everything remains to be figured out and, on the other hand, there is no longer a need for interpretation'.

The emphasis on the media of methods draws attention to the processes of giving form, figuring out, that are central to social inquiry. As Rabinow says, 'it is only through discovering and giving form to elements that are already present that the inquiry can proceed' (Rabinow, 2007: 9). Even the humble anecdote is 'an openly ambiguous textual form: combining the real and the constructed, holding them in tension' (Michael). In discussions of the ability of devices to format social action, the per-form-ativity of methods, and configuration, there is already an acknowledgement of the importance of form and figure, but many of the methods discussed here explicitly draw attention to what 'working with' methods might mean more explicitly in terms of form-giving, craft or imagination. So, for example, Steve Brown draws an explicit parallel between developments in the history of social psychology experimental methods and the German expressionist movement in the early twentieth century, which in part made use of "experiments with disruptive and interpolative techniques" and include "montage and other devices of discontinuity" to focus on the ways in which psychological experimentation aims for 'a certain

kind of purity of expression'. '[The experiment] attempts', he says, 'to make visible social phenomena in a form in which they could never possibly be lived, never otherwise made manifest'.

One further point follows from recognizing the medium-specificity of the methods described here, namely exploring and exploiting the possibilities of multiple temporalities that may accompany methods, including the 'automatism', self-regulating character or recursivity that is variously developed in media (Cavell, 1979; Kwinter, 2009).¹¹ The potential of exploiting such recursivity is perhaps most explicitly exemplified in Mackenzie's discussion of the set, where he notes the importance of the definition of a relation R as 'a set of sets' for the uses of the set in list-making and relational databases. As he observes, in allowing set-making to become recursive, this relation made it possible for mathematical operations coded in software to implement the method of the set (setting) in such a way as to allow relations between different sets to be organized sequentially (A as the set of 'things to be done' can be put in a recursive loop with a sub-set such as the set of 'things to be done before A, that is, 'things to be done'; and so on). Recursivity is thus fundamental to the power of sets in computing.

Recursivity is also evident in the title of another of Richard Serra's works discussed by Andrea Phillips: *Verb List Compilation: Actions to Relate to Oneself*. Peter Osborne, who Phillips quotes, suggests that, while this artwork has a speculative potential, it is dependent on its title to establish 'relations to acts of . . . production within the frozen objecthood of . . . results'. In contrast, patterning, as discussed by both Jefferies and Stenner, is organized in terms of repetition or recursivity; one chapter – that by Jefferies – emphasizes patterning as repetition in space, a 'textured medium', while the other – the chapter by Stenner – stresses repetition in time. Stenner says, 'we are dealing with something maximally temporal that, like a piece of live music, endures in only a minimally spatial manner'; a 'pulse of alternating pattern; playing the difference between gathering and dispersal; adding a little order to chaos and chaos to order'. Experiment, too, is also always a matter of reiterated and controlled adjustment; similarly, the categories of the census iteratively identify and close gaps, mediating the relationship between individuals and states; while configuration alerts us:

to attend to the histories and encounters through which things are figured into meaningful existence, fixing them through reiteration but also always engaged in 'the perpetuity of coming to be' that characterizes the biographies of objects as well as subjects.

To be inventive, methods may need to be slow (as both Law and Marcus – 'the unbearable slowness of ethnography' – suggest), fast, or both, but always require attention to the mobile cluster of temporalities in which they are nested.

In different ways, all the methods we describe here can be seen in terms of the organization of a recursive relation to the excess of specificity that is the

actual. This can be described in mathematical terms as the excess that comes from the internal non-cohesion of the set with itself, from the irreducibly unstable relations between the parts that belong and the elements that are included. It is the organization of the excess of representation over presentation (Badiou, 2008); sometimes this is a quantitative excess, the excess of data generated in transaction data sets, but it can also be the excess of sensory plenitude, of the non-representational and the more-and-less-than-rational. Grasping this excess, configuring it, is one of the principal sources of a method's capacity to be inventive, a capacity that can only be enhanced by the use of the material-semiotic properties of materials and media to expand relations between the sensible and the knowable. As Mariam Fraser (2009) has put it, a method can be inventive if it can be deployed to 'lure' materials into *posing their own problems*.

Conclusion, or refrain

To begin, again.

Notes

- 1 We would like to thank the editors of the book series, and in particular, Penny Harvey for not only pushing us to explicate our aims in adopting the method of the alphabetically ordered list to order the chapters in this volume, but also for their ideas about the role of the list, many of which we draw on here.
- 2 Of course, this is not a new proposal. One of the most influential advocates of such an approach is C. Wright Mills (1959). But it is a proposal that may usefully be refreshed by repetition.
- 3 And, some might say, questionability into methods.
- 4 In a related argument, Buscher, Urry and Witchger observe that the use of social research methods in 'forms and forces of surveillance and monitoring' is being extended in the development of 'powerful mobile computer-based methods' (Buscher *et al.*, 2011: 2).
- 5 Indeed, as Lucy Suchman says, 'Methods . . . like their research objects, are both well established and always in the making'.
- 6 The instability of such an assemblage (specifically the interview assemblage) is the subject of the method of anecdote described by Michael.
- 7 Which might also have been framed in terms of specificity – of under- or over-specificity, even un- or non-specificity.
- 8 They are also discussed in some detail by Verran (forthcoming).
- 9 Related concerns are the subject of Atkinson and Silverman's (1997) discussion of the emergence of what they call an 'interview society', in which they address the implications of the increasing use of the interview as a method in a range of mass cultural forms, including newspaper articles, sports programmes and chat shows, for its use in social science research.
- 10 Drawing a similar parallel, Steve Brown notes that 'The situation of a housemate [in the reality TV show *Big Brother*] is then close to that of a participant in a psychological experiment'.
- 11 In a recognition of the importance of recursivity to method in art, Sanford Kwinter writes, 'Among the most prominent developments that have marked recent art has been the incursion of "method" into the heart of what has long appeared as an array

of miscellaneous, even random art practices. By method, I mean nothing more than an approach in which a certain discipline is sustained over a range of executions, sustained, that is, long enough both to leave a trace of “system” in the deposited production and for that systematic quality to serve as a principal rhetorical feature of the work’ (Kwinter, 2009).

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