Advances in Practice theory book chapter drafts

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Practices and Their Affects

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Theories of practice claim to be able to find new ways of seeing society and human behaviour. The intense international interest in practice theoretical approaches in sociology in the last ten years (see, among others, Schatzki et al 2001, Schmidt 2012, Nicolini 2013) comes out of a widespread dissatisfaction with the traditional sociological vocabulary, which has proved insufficiently inspirational to current empirical research. This dissatisfaction applies above all to the dualistic distinction between individualist approaches of economic rational choice theory on the one hand and the holistic approaches on the other, which take their point of departure from norm systems or inter-subjective communication processes. But it applies also to the dualistic distinction between a culturalism that studies discourses and sign systems on the one hand, and a materialism of biological processes on the other (see Reckwitz 2003).

The family of practice theories - irrespective of their internal differences - offers an alterntive to these dualisms. Its main tenet is to seek the social in practices, in embodied routine activities subtended by implicit, collective knowledge. It is for this reason that practices belong to the realm of the genuinely social, at the same time as they are anchored in the bodies of individuals and act through them. Further, because the *social* practices depend on implicit schemes of knowledge they are always *cultural* practices. And because they are anchored in bodies and in artefacts connected with bodies in specific ways, they are also always *material* practices. The social world consists then of more or less repetitive performances of doings and the wide-spread complexes which theses practices form.

This is of course a very general definition. In recent years a good deal of conceptual and terminological work has been done on the development of a more systematic theoretical framework. In particular the work of Theodore Schatzki (1996, 2002, 2012) is of note here. However, there is still an amount of untapped heuristic potential in practice theories. It should however be pointed out that the purpose of this work is not to develop a new theoretical system called 'practice theory' simply for its own sake, as a rival to the systems of Parsons or Luhmann for istance. Instead, the aim is to obtain a heuristic aid and stimulus to empirical research capable of rendering visible phenomena and contexts that were previously off the radar. At this point I want to address a special question of fundamental importance in current social theory. It concerns the status of emotions, feelings and affects in social theory and in sociological analysis. The new millennium has seen a special interest in the emotions and affects among social and cultural theorists. This has moved some to speak of an emotional or affective 'turn' (see, among others, Greco/ Stenner 2008, Harding/ Pribram 2009). I see this interest in the context of a broader movement within the theory of the last fifteen years toward the inclusion of previously neglected categories as important ingredients of the social world. An analogous case is the social significance of space and spatiality (see Löw 2001), of artefacts and things (see Latour 1991), of bodies and the corporeal (Schilling 1993), and, finally, the rediscovery of the senses and sense perception (Böhme 2001), all of which have been announced from different quarters.[1]

These calls for a general shift of perspective may seem at first glance unrelated to one another. However, they share a common tendency to refocus elements of the social in such a way as to align the cultural *and* the material, the symbolic *and* the objective (or the living) on the same level of sight. It is no wonder that all these attempts to bring about a turn (see also Bachmann-Medick 2006) have come *after* the heyday of radical culturalism in the

[1] On this state of affairs in current theory generally see Reckwitz 2013

social sciences and the humanities in structuralism and semiotics and to a certain extent in radical constructivism. Radical culturalism insisted rightly that the meanings of spaces, things, bodies, perceptions and affects are culturally determined, it regarded them consequently as cultural representations, and subjected them to corresponding sociological, anthropological, historical and literary analysis. But for the proponents of the new turns this does not go far enough. Instead of a one-sided emphasis on the cultural character of these elements of social life, they are concerned with them as both cultural *and* material entities.

Social space, for example, consists of the organisation of interrelated bodies and artefacts, interpreted by both participants and observers (see e.g. Löw 2001, and earlier; Lefebvre 1991): it is both material *and* cultural. The same can be argued for sense perceptions, for things and for the corporeal. The new tendencies seem at first concerned to reinsert the material into the social, but on second sight they turn out to be breaking down the whole cultural/material dualism. The demand for an affective turn must be taken this way. After all, affects are both cultural *and* material. As states of bodily excitation they are persistent realities of their own right, , and yet their origins, effects and social intelligibility depend on cultural and historical schemata. This double character of affects is decisive for their place in the social and is therefore central to their analysis by the social sciences.

It is therefore evident that practice theory and affect analysis not only can but must be set in relation to each other: If the affective turn is about overcoming the culture/material dualism in the understanding of feelings, and if practice theory seeks to overcome this dualism in general, then a specifically practice theoretical approach to affects seems promising. With few exceptions (see Burkitt 1999, and also Harding/ Pribram 2009: 1-23) however, this has not yet been forthcoming. Classic theorists of practice such as Bourdieu, Giddens and de Certeau are largely silent on affects. The reason seems to be that the first generation of practice theorists in the 1970s and 80s (who incidentally did not

use this label) were chiefly occupied with following Wittgenstein in overcoming the individualism/holism dualism. The second dualism, the material/cultural binary, first emerged into the foreground as a candidate for overcoming around the year 2000, partly as a result of the Latour-effect but also due to the various turns mentioned above (this tendency is evident in the thematic shift between Theodore Schatzki's main works *Social Practices* and *Sites of the Social*). Attacking this dualism first becomes relevant for the second generation of practice theorists. This does not constitute another turn in social theory, but rather the assimilation of a large part of the other turns propagated in the last years (spatial turn, pictorial turn, body or corporeal turn) into the kind of broader reconfiguration of social theory beyond the confines of the material/cultural dualism, a dualism which is ripe for overcoming.

What would a genuine praxeological account of affects look like? My basic claim is that it is not enough to just take affects 'into account' in social theory; the crucial insight is rather that *every* social order as a set of practices *is* a specific order of affects. If we want to understand how practices work we have to understand their specific affects, the affects which are built into the practices. There can consequently be no social order without affects, but there can be vastly different types and intensities of affects within practices. What does this mean exactly? In order to answer this question, I will first briefly address the reasons why classical social theory has tended to overlook the constitutive social significance of emotions and affects. After that, I will outline the relationship between affects and practices, and finally I will focus on the issue of how artefacts can act as 'affect generators' within practices.

1. The affects as blind spot

What prevented social theory so long from recognising the fundamental social importance of emotional and affective

phenomena?[2] Since the 1980s, the exponents of the so called affective or emotional turn (Clough/Halley 2007) in the social sciences and humanities have been convinced of the need to alter fundamentally our understanding of the social. Of course, all this talk of turns is a means of dramatising and simplifying the situation. There does not exist some coherent block of traditional social theory that needs to be overcome but rather a heterogeneous conglomerate of texts dating from around 1900 that later became the object of a specific style of interpretation in mainstream sociology. It is obvious that the work of certain authors from that period, such as Gabriel Tarde, with his sociology of imitation (Borch/Stäheli 2009), or Sigmund Freud and psychoanalysis (Elliott 1992), demonstrated recognition of the fundamental social importance of affects. The dominant reception of Weber and Durkheim through Parsons and the theory of modernisation and on through to such diverse authors as Niklas Luhmann, Jürgen Habermas, Michel Foucault and Pierre Bourdieu is, however, characterised by a systematic neglect of affectivity. Two interconnected causes can be assigned to this tendency. One reason is the widespread assumption in sociology of the identity of the social with normative orders or orders of knowledge, resulting in an understanding of affects as non-social, non-cultural phenomena occurring within individual's bodies or individual's psyche. A further reason is that modernity used to be equated to formal rationality overcoming affects.

The first reason for the anti-affective attitude of large segments of classical and contemporary social theory seems to be the identification of the social with the inter-subjective force of normative rules. Since the late 19th century, social theory has been dominated by dualisms opposing the social to the individual and to the natural or biological (Lukes 1973). This pair of dichotomies usually occurs in combination with a third, even more abstract dualism between the rational and the irrational. Admittedly, the social sciences have not entirely overlooked emotional, affective

[2] This section is based on passages from Reckwitz (2012)

phenomena. But they have located them on the second, inferior pole of these pairs of opposites. Emotions were regarded as properties of the individual, and thus excluded from sociological generalisation, or seen as natural, biological dispositions and drives belonging to the pre-social body. In both cases they are placed beyond the rational, regular and predictable social order.

There have always existed opposing tendencies, of course, the late works of Émile Durkheim, rediscovered in the last few decades, being the prime example. In *The Elementary Forms of Religious Life* from 1912, Durkheim discovers that in religious communities emotional ties do not subsist outside of the social but rather exercise a stabilising, integrating force within it. Durkheim is nevertheless doubtful that these emotional aspects of social relations can be reproduced in modern societies (Shilling 2002).

Strangely enough, the comprehensive paradigmatic shift in the social sciences since the 1970s, the variously titled 'cultural', 'interpretive' or 'textual' turn, has not overturned the anti-affective attitude. Structuralism, post-structuralism and social constructivism have transformed our understanding of the social by substituting semiotic and discursive structures and regimes of knowledge in the place of prominence previously occupied by normative orders. The paradigm of the social is no longer religion or law but rather language: Society must be understood in analogy to language. Affects, as states of bodily excitation, then seem to stand outside of the linguistically constituted social. Emotions appear for this reason only on the margins of classical works of cultural theory like Foucault or Bourdieu. If emotions are noticed at all in such culturalist approaches, then as objects of specific discourses, as phenomena of lingual construction. This reduction of emotions to discourse, such as was promoted by social constructivism in the 1980s (Harré 1986), made the social, cultural representation of emotions accessible to analysis by social science but remains imprisoned in the cultural/material binary.

The second reason why social theories have so long marginalised affects and emotions is to be found in the dominant sociological understanding of modernity. Such disparate authors as Marx, Weber, Adorno, Parsons, Foucault and Bourdieu share the common conviction, whether affirmatively or critically, that modern society is most fundamentally characterised by formal rationality. The rationalisation of action and the social spheres is seen as increasingly displacing all affective aspects of action. The affects seem more to belong to pre-modern or traditional societies, which are then classified as natural rather than social. In this way, the dualism between modern and traditional societies underlies a distinction between different stages of social evoluton in terms of the absence or intensity of affects. Norbert Elias' (1982) major theory that the process of civilisation toward modern society is equivalent to the increase of affect control would seem paradigmatic of this type of interpretation.

The traditional social theory thus adopts the premise that modern society is characterised by what in Parson's theory of modernisation is termed "affect neutrality", implying that in the differentiated spheres of action in modernity, emotions are largely neutralised. Many authors, from Weber to Habermas, view this alleged affect neutrality in modern society as essentially positive. The suppression of dangerous emotions looks progressive when seen from the perspective of the rationalist opposition of enlightened understanding to mere feeling (a binary that 19th theories of gendered character index onto the two sexes). The reverse image of this suspicion of emotions is their latent or manifest celebration, such as held sway at the inter-war Collège de Sociologie, which attacked modernity for its claim to suppress emotions, hoping in Rousseauian manner for a return of individual and collective feelings, whether sensuous, physical or what not.

In summary, the strict dualism between the social and the biological or individual, in conjunction with the theory that modernity is distinguished by affect neutrality, whether benign or

problematic, is the reason for the exclusion of affects and emotions from social theory. The affective is confined to the individual, the biological or corporeal, or banished to pre-modern societies. It has all the trappings of the outside, constituting the inside of affectively neutral society.

2. Practice theory of affects

A practice theory perspective on affects is concerned neither to denigrate nor to celebrate the affects. The presence of affects in a society cannot be simply ignored. Whether they are menacing or benign they are a constitutive part of the social life which incessantly produces them. The diagnosis of modernity as affect neutral is therefore false. The affects may be shaped *differently* in some modern institutions but they do not vanish altogether. Practice theory avoids the cultural/material binary by approaching every social order, conceived as an arrangement of practices, as its own affective order; every social practice is then affectively *tuned* in a particular way and has, as such, a built in affective dimension (see also Seyfert 2011).

What then is the particularity of a practice theory perspective on affects? I would suggest three underlying principles of such a perspective: 1. Affects are not subjective, but social. 2. Affects are not properties, but activities. 3. Affects are states of physical arousal, of pleasure or displeasure, directed at some definite person, object or idea.

The practice theory approach brings about a fundamental change of perspective on affectivity. It approaches affects not – as the terms emotion or feeling have traditionally suggested – as interior properties of individuals only accessible to an introspection plumbing the depths of the psyche, but places them instead on the level of social practices themselves. Affects are then properties of the specific affective *attunement* or mood of the

respective practice.[3] As soon as a person is competent to perform a practice and is 'carried away' by it she incorporates and actualises its mood. This state of affairs is ordinarily obscured by an individualist bias in ordinary language. When, for example, an early 21st century person falls in love, it only seems to be an individual feeling (or even a basic anthropological constant). In fact, the feeling is embedded and informed by the bundle of practices called love that developed around the late 18th century in western culture. 'Love' is a set of routine behaviours dependent on specific cultural patterns (the uniqueness of the beloved, fascination for their otherwise mundane seeming qualities) and containing a peculiar set of affects: physical desire, longing in the absence of the beloved, the existential pain of love unrequited or lost. These routine behaviours are clearly closely tied to discursive practices and fields, such as romantic novels and films in which the codes and affects of love are publicly represented for imitation.

It is apparent here how the affective practice of falling in love is both cultural and material at once. It is cultural in that it depends on the specific cultural, historical and local knowledge schemata referred to above and with which participants in the practice think, feel and remember in a certain way. The affect *must* be cultural since it is oriented on specific entities in the world which first become desirable or repellent within the framework of certain systems of interpretation. The practice is at the same time material to the extent that the affects inherent to it are real states of physical excitement, manifesting in measurable physical reactions or at least in the subjective fact of physical feelings which can only be ignored with the greatest effort. Falling in love involves such physical facts, the cultural origins of which are no longer visible to the lover. The affective structure of a practice thus explodes the inside/outside binary (see Burkitt 1999), by being internal and external at the same time. It consists in

[3] The use of these terms can be read in the context of Heidegger's *Being and Time* (1927), division 1, chapter 5.

external, public, intelligible signs of emotion, and internal, subjective states of physical excitement.[4]

The bundle of practices called love is manifestly affective. However, on closer inspection, all social practices turn out be affectively attuned in one way or another, including the allegedly neutral ones. Academic practices in the modern fields of the natural sciences or humanities turn out to involve attitudes of curiosity and attentiveness to the nature of things. Affects enter into economic practices in the modern market economy, associated with success or victory in competition or the joy of creative work. The question is *why* this affectivity not only occurs in special cases of social practices but is a general phenomenon. Two main structural properties of practices can be said to require the presence of affects: motivation for the practice and the focussing of attention.

Social practices 'interpellate' the subject in a certain way. But how *can* the subject be interpellated in this way and thus participate in the practice?[5] The answer is that the practice must entail a specific motivation to perform it. From this perspectice, it is not the individual who comes to the practice with their own 'psychological' motivation but rather the practice itself of which the motivation is already an integral part. Motivation is where affects come into play; there must be some affective incentive to participate in the practice. This can be a positive desire, a defensive incentive to avoid displeasure, or a combination of the two. Intrinsically creative work in late modernity operates characteristically on the basis of a built in motivation for creative enjoyment, whereas a serf's labours will tend to be motivated by the threat of corporal punishment for disobedience.

Just as every practice must have its particular built in motivation, so too must the directedness of sense perception be organised in

[4] Love is therefore more than just a form of communication, as Niklas Luhmann (1982) would have it, although it is also this. In system theory terms, love is a coupling of social, psychic and organic systems. This makes manifest the significance affects have independently of affect discourses.
[5] For a somewhat different articulation of this see Butler (1997).

a specific way. The fundamentally volatile human sensory attention is guided by a practice toward phenomena relevant to the practice and deflected from irrelevant ones, which then drop out of the radar altogether. Perceptual attention is also laden with affects (see Ciompi 1997). In academic practices, it can be the curiosity or interest for certain themes that guides attention; in body practices, it can be the sense of shame at one's own impurity. Any perception involving positive or negative affects can enter the focus of sensuous attention, while entities with weaker affective significance remain beneath perceptual attention, like white noise.

Clearly then, a practice theory cannot conceive the affects as qualities or properties, but must regard them as a dynamic *activity*. Within a practice, people can be affected in specific ways by other people, by things and ideas. Affectivity is therefore always a relation between different entities. For this precise reason I prefer the term affect to that of emotion. The term affect may have the disadvantageous connotations of some spontaneous pre-cultural force. Yet the term emotion seems more problematic still, suggestive as it is of something a person 'has'. The concept of the affect, with its verb form 'to affect', is more fully the description of processes, of *affecting* and being *affected* (see Ott 2010, and in the background Deleuze/Guattari 2000). As such the question must always be: who is affected by whom or what? From the point of view of the human subject, it can be said that the affectivity of a practice comprises specific stimulations attached to other people, things or ideas. These latter are interpreted within the practice in some typical way and so can become triggers for feelings of pleasure or displeasure. An affect is therefore always directed at something of significance, always intentional in the phenomenological sense, in that it involves the interpretation of some entity as desirable, revolting etc. In contrast, the same entities trigger entirely different states in people within other practices or leave them indifferent. A basic capacity for reactions of desire and aversion, pleasure and

displeasure, would seem to enter the human body at the point of birth. But the direction this desire or aversion tends, the objects it is formed by, is a question of the social practices. Luc Ciompi (1997) suggests we should assume the existence of five basic feelings – joy, interest, fear, rage, or sadness – which list I would take on board rather as a heuristic catalogue than as a fundamental anthropological constant.

In the new debate, especially authors working in a Deleuzian framework such as Brian Massumi (2002) have preferred the term affect over emotion, because it denotes a disruptive force that breaks through cultured routines. Where does this disruptive element fit into the analysis being proposed here? At this point, we must back up a bit. Practice theory indeed presupposes that practices constitute social orders and as such are undergirded by a structure of social reproduction and repetition. Yet at the same time practices also always harbour the potential for novelty, surprise and experiment, which can modify or transform the practice from within. Therefore, on the account I am proposing here, affects are *not* per se anarchic and disruptive but rather among the main ingredients in culturally standardised, routine bundles of practices. However, there is always the chance that new and different acts of affecting will emerge from within social practices and explode their normality. These non-routine affective events are indeed no rarity, though it is in every case questionable whether they will constitute their own regular practice or disappear again. Such a non-routine affective event can occur on the individual level – some idiosyncrasy, viewed in some cases as pathological, a unique phobia or fetish – or on the level of collective spontaneous excitement, be it a state of pleasure, panic or other.

A practice theory perspective on affects is thus able to assign the affect discourses their proper place. The ‘thematisation’ or ‘problematisation’ of feelings has been itself a theme of intense discussion in cultural theory since the 1970s, which tended to regard feelings as ‘culturally constructed’. As elaborated above,

this kind of culturalist theoretical reductionism inevitably falls short of the mark by tending to confuse feelings with the semantics of feeling and so neglecting the physical facts of affects. The practise theoretical perspective in no way excludes such a discourse analysis of emotions and affects, but rather preserves them within the more comprehensive framework of a concept of practice-discourse formations. If we want to trace the ramifications of affects as formed in specific discourses at specific times, then we cannot view them in isolation but must analyse the connections between discursive and non-discursive practices. Especially in modernity, affects are often not implicitly and traditionally present in social practices but rather amplified, weakened or even brought into existence by being treated as a theme or problem on the level of discourse. These discursive practices always already exist in interconnection with non-discursive practices, oscillating between the discursive and the non-discursive, becoming physically internalised and causing real effects in the body.

Any theory of social practices would end up in a cul-de-sac were it to strictly oppose practice and discourse, doings and sayings, as though they were two separate orders of things. If practices are grasped instead as a meshwork of doings and sayings, then discursive formations are just social practices, neither more nor less; they are practices of representation in which objects in the world are represented, imagined and evaluated, with the aid of media technologies. However, depending on the context, these practices of representation are linked to other practices, into which their contents are 'translated' (Latour). For example, the discourse of psychology is translated into a therapeutic practice. The exact form of translation between discursive and non-discursive practices is then a question of empirical research. One of the best examples for the relevance of affect discourses in the context of a practice-discourse formations is the previously mentioned modern discourse of love at work in higher literature and film, as well as in popular and academic, psychological

literature, and coupled with practices of dating and mating, sexuality and partnership.

Now, the affective orientations instituted by social practices and practice-discourse formations can invest meaning in different *affective objects* that can be roughly divided into three classes: persons, things and ideas. Where sociology has dealt empirically with emotions (see, for example, the interactive sociology of Erving Goffman (1971) or Arlie Hochschild (1983)), it has concentrated on inter-subjective emotions, on emotions directed at other people, such as envy, affection or hate. Affects directed at other human beings, be they present or absent, are characteristic of many social practices. The affect can be directed at whole groups, be they, once again present or imagined; at a labour force, a crowd in a football stadium, an ethnic group. Beside humans, affective inclinations can also be attached to pure ideas, to transcendent entities, such as in religious practices, or abstract entities, such as with an aversion toward 'the system' or trust in 'the market'.

Above all, however, the relations between people and inanimate things have an enormous and generally underestimated significance for social practice and its affects (see Knorr-Cetina 2001). The artefacts involved in a practice are often not at all affect neutral but rather intensely charged with negative, or, in modernity more often, positive qualities. The care in engaging with tools, the glamorous fascination of a piece of clothing, the fear or enthusiasm at finding oneself in a metropolis, are all examples of this. An appropriate framework for analysing affects therefore needs to keep this inter-objective dimension in view in order to compensate for the predominance of the inter-subjective in sociology. Within the sphere of artefacts two special constellations can be highlighted which, particularly in modernity, operate as prominent generators of affect: atmospheres of place, and reflexive, symbolic or imaginary artefacts.

3. Artefacts as generator of affect

In principle, every artefact can be used within a practice as the bearer of positive or negative affects. The earliest such practices involve the use of weapons by hunters and gatherers, the use of agricultural tools by farmers after the Neolithic revolution, and artisanal tool use. In abstract terms, we can speak of a 'tool paradigm' in relation to artefacts, present even in Bruno Latour's actor network theory examples of door openers and safety belts, where things are being used to some practical, rational end, and are at the same time bound up with affects.

In addition to this tool paradigm, a different affect-structure in dealing with things grows up in the course of the development of culture, and especially in modernity. Within this structure things become primary affect generators within heterogeneous, often aesthetic, practices (see Reckwitz 2012b). In this constellation, things are produced or used expressly for their function as affect generators. We can speak here of a *cult paradigm* of things. As in an archaic cult, the priority is not so much the practical use of things but rather their ability to fascinate or repel (see, in a similar vein, Böhme 2006). In modernity, but also in early cvilizations, two types of artefacts function as affect generators: spatial atmospheres and symbolic or imaginary artefacts.

In the case of spatial atmospheres the individual things are less important as isolated entities, but their location in three dimensional space, their interrelations, the way they constitute an environment. This space is then not so much 'used', but rather entered into by people and experienced. Naturally, spaces like apartments and offices are made for specific purposes, but their holistic, three-dimensional character endows them with a special capacity to produce what Gernot Böhme (2000) has referred to, following the phenomenologist Hermann Schmitz (1998), as *atmospheres*. People are affected by atmospheres arising from the sets of relations of artefacts, as well as from other people,

groups or practices. The experience of atmosphere is of course itself a practice requiring training in cultural codes and their corresponding sensuous receptivity. Artefacts can only become generators of affects within the framework of practices.

One privileged place for making atmospheres and the production and reception of associated affects in social practices within modernity is architecture, understood as built space in the broadest sense, encompassing not only the exterior architecture of buildings, but also interior design, traffic infrastructure, modified natural environments and open spaces (see Delitz 2009). Architecture draws the function of artefacts as affect generators into the foreground. Architecture produces atmospheres by inducing affects like awe, admiration, a feeling of rest or stimulation. This can be said of cathedrals and palaces, gardens, shopping arcades, creative offices, fun parks, private houses, museums, public squares and libraries. If modern society, especially late-modern society, turns out to actually not be the affect-neutral, rational society it thought it was, but rather on the contrary a place of massive affects (see also Thrift 2007), then the work of designing and generating atmosphere, especially in built space, is of key importance to understanding what modernity is really like. This encompasses a class of practices that can be called 'reflexively affective', meaning a practice involving artefacts produced primarily for affective uses. These reception practices are therefore bound up with corresponding production practices, in which artefacts, in this case spaces, are designed for the purpose of producing specific affects in people.

The second class of reflexively affective artefacts that appears to bear a large responsibility for the affective concentration of modern society are semiotic-imaginary artefacts. Of course, even a simple artefact under the tool-paradigm is evidently a bearer of signs and potentially of imaginings capable of producing affects. But the semiotic-imaginary artefacts in the narrower sense are things produced primarily with the intention of transporting signs and imaginations calculated to affect people. In modernity this

means primarily written texts, images and series of acoustic signals, especially music, or combinations of all three. In addition, body accessories such as fashion clothing can assume the character of semiotic-imaginary artefacts.

Naturally, what applies to architecture applies here also: texts, images and series of acoustic signals can perform a primarily instrumental function, for example as vehicles of information. But for the understanding of modernity it is of central importance that these artefacts have been and continue to be employed regularly as affect generators in large scale practice bundles. Texts, for example, are written to generate certain affects in readers. This applies equally to literature (see Koschorke 2003), political texts, in part to philosophical, and to scientific texts (whether serious or popular) that aim to arouse feelings of identification or to change peoples' lives. It is even more palpably the case for images – whether paintings, photographs or film (see Prinz 2013; also Hall 1997, Crary 1999) – producing affects of fascination for certain forms of subjectivity, or compassion for discriminated social groups, or providing training in a practice of feeling, such as love. Finally, musical sound sequences are genuine affective artefacts , since here the information function is minimal and the main purpose is the production of moods in the listener. In the case also of semiotic, imaginary artefacts, reception and production practices are interrelated. The production practices are aimed at making texts, images and acoustic signals in such a way that they can affect people, while the purpose of the reception practices is to be affected.

At this juncture, an interesting distinction emerges between affective practice-discourse formations and symbolic-imaginary affect generators. As symbolic-imaginary affect generators, entities like images, texts, music or fashion are embedded in non-discursive practices in the context of which they generate affects. These affect generators in images or texts can at the same time be integrated in discursive contexts, in which affects are frequently represented in different ways according to specific formation

rules. Put simply, an image functions as an artefact generator when it functions affectively within a practice. On the contrary, as part of an image discourse it primarily represents affects. The film *Gone With the Wind* is a massive affect generator, while at the same time participating in a complex sentimental Hollywood image discourse.[6]

The special importance I am here attributing to both spatial atmospheres in architecture and semiotic-imaginary artefacts for the analysis of the affective character of practices is therefore backed up by both on the level of a theory of the social and a theory of modernity. From a sociological viewpoint, practices in general and their affective dimension in particular can only be usefully analysed if they are understood as *practices with things*. From a theory of modernity viewpoint, the affective structure of those bundles of practices which constitute modern society and in particular late modern society are only graspable when we recognise the special status of architectural atmospheres and semiotic-imaginary artefacts and take adequate care to analysis the practice of these artefacts' reception and production. A practice theoretical affect cartography of modernity will have to concern itself, not exclusively but extensively, with these two bundles. To do this, traditional sociology will have to leave behind the 'anti-aesthetic and anti-technical hang' that has been attributed to it by Wolfgang Eßbach (2001).

[6] Discourses on practices need not be themselves affect generators. Psychological texts for example deal with affects in an extremely influential way without needing to affect the reader.

General understandings and everyday performance: "authenticity" and cultural intermediation in brand management

1. Introduction

How are we to understand within a practice theoretical framework the relationship between very diffuse cultural understandings or concepts—such as 'authenticity'—specific practices, and situated activity? The sociological appropriation of Schatzki's generic categories of practice components, particularly as adapted by Warde (2005) and Shove et al.'s (2012) variant model of generic practice elements, have proved generative in the context of the sociology of consumption, and of sustainability. However, the conceptualisation of widespread, diffuse, cultural understandings is a central, extant challenge in the sociological appropriation and operationalisation of practice theory. Schemas which lack analytical differentiation between very general cultural understandings and practice-specific orders of meaning, or which conceptualise such general understandings simply as ideational elements common to discrete practices, potentially obscure important dynamics and processes (Welch and Warde, 2015).

In *The Site of the Social* Schatzki (2002) introduces into his schema of generic components of practice the category "general understandings", an addition to his earlier tri-partite model of practice (practical understandings, rules and teleoaffective structure) (Schatzki, 1996). General understandings are common to many practices and condition the manner in which practices are carried out, as well as being expressed in their performance. Schatzki gives the example of the Shaker view of labour as a sanctification of the earthly sphere, which conditioned how labouring practices were carried out, as well as being explicitly formulated in doings and sayings (Schatzki 2002, p. 86). To our knowledge the category of "general understanding" has not been operationalised in sociology.

Convergent to some degree with this challenge is that of how best to conceptualise large scale or configurational phenomena, beyond "local social phenomena" (Schatzki, 2014) or situated activity. Social theory needs to do things that ontology does not (Abend, 2008). The framing question to this latter challenge therefore might be: when, where, and how do concepts of configurational relations shaping situated activity assume analytical priority over practices? This is a question of whether sociological theory can retain the analytical affordances of practice theory without debarring traditional sociological concerns with large scale or 'macro' phenomena. Where the two challenges—of general understandings and of configurational phenomena—are articulated is where general understandings subtend broad cultural shifts, in which general understandings move from domain to domain, perhaps from the extra-mundane to the mundane, become instantiated in diverse practices, and thus create novel configurational relationships. The sociological question is: where do general understandings come from and what are the social processes whereby they are conveyed between different domains or configurations of practice? We do not claim to resolve these great issues here, but to contribute to the opening up of the territory, and to cast some light on the social theoretical issues posed by the category.

In the following section we begin unpacking the problematic that the category poses for practice theory, and to highlight the diversity of kinds of configurational relations in which general understandings are implicated, and the diverse processes and dynamics through which general understandings are translated, diffused and instantiated. An examination of the genealogy of authenticity allows us to map the movement of the general understanding across domains and practices. We then go on to address a sociological problematic—cultural intermediation—which describes a certain subset of such processes, and to explore 'authenticity' as a general understanding through it. We then proceed to focus on a site in which cultural intermediation plays a critical role, and which has specific relevance to the sociology of consumption: brand management. We conclude with some tentative thoughts on paths not taken in our genealogy and what they might further suggest.

2.1. The Problematic of General Understandings

Something like the category of general understandings would appear to be crucial for any full sociological appropriation of Schatzki's social ontology. Schatzki notes:

> "General understandings combine with teleology in the determination of human activity. They specify ends and purposes, stipulate forms of activity, and inform how objects and events can be used in the pursuit of particular ends and purposes [and] underpin spatiality." (2010 p. 152)
>
> "[G]eneral understandings underlie the significance of the world" (Schatzki, 2010 p. 163 n 93).

General understandings constitute basic cultural categories. We note that Schatzki (2002) marshals general understandings in the context of his account of the Shakers: general understandings are clearly of particular pertinence to group formation and reproduction. At this point in his account Schatzki introduces a conceptually underspecified term — "teleoaffective regime" — which regimes "illustrate" general understandings. Schatzki's examples of teleoaffective regime in the case of the Shakers are: their religious faith in salvation through Shaker existence and belief that the Shaker's lived order was the kingdom of God on earth; the governing hierarchies through which Shaker life was administered; and their commitment to communal property and living (2002, p. 28).

Each of these could also be characterised as a general understanding: the relation between the two terms is therefore somewhat obscure. To characterise these fundaments of Shaker culture as teleoaffective regimes emphasises how each encompasses key, inter-related orientations incorporated into the teleoaffective structures of particular practices, and therefore instantiated in situated activity. Arguably "teleoaffective regime" here does the work at the level of the social group that teleoaffective structures cannot, given the latter "are not equivalent to collectively willed ends and projects (e.g. the general will or the we-intentions of a group)", but are the property of individual practices (2002, p. 81).

The hierarchical and communitarian teleoaffective regimes also encompass many of the rules and procedures through which individual practices were governed, as well as subtending subject positions. They thus play a key role in the integration of the overall configuration of the Shaker

order. We note the deployment of teleoaffective regime here as an example of how a focus on general understandings inevitably foregrounds configurational concepts.[1]

Nicolini suggests "general understandings" constitute "external understandings" of the overall project in which the practice is engaged (2012, p. 167). The "external" here hints, as Caldwell suggests, that the notion of "general understanding "may presuppose an object of enquiry that goes beyond the practices in which it is carried or enacted" (2012, p. 291). For example, in the context of his discussion of Eliade's work on ritual, Schatzki reflects that hierophantic and cosmological general understandings "establish basic features of religious man's [sic] being-in-the-world" and that "the complex of general understandings informs the teleological organisation of religious man's life" (2010, p. 151). That complex, its manner of organisation, and its modes of instantiation, are therefore central objects of study. The extent to which general understandings were more common in the past (as Schatzki [ibid.] intuits), how we might characterise such complexes (for example, in relation to sign modalities), whether general understandings play a different role, or are more or less integrated, in different times and places, and so forth, are fundamental questions of social science. We do not attempt to address any such fundamental questions here.

2.2. General Understandings as a Category of Practice

We propose "authenticity" is a useful example through which to open up this problematic. The concept of authenticity plays a prominent role in modern Western cultural history and we are not lacking in authoritative genealogies of authenticity (e.g. Berman (1970), Orvell (1989), Taylor (1989, 1993), Trilling (1972)). Furthermore the notion of authenticity is ubiquitous in diverse and disparate practices (see, e.g., Lindholm, 2007; Vannini and Williams, 2009). As Parish puts it, the "value of authenticity saturates modern life" (2009 p.147). Brand managers regard the authenticity of their brands as of foremost importance (Holt, 2002). Tourists seek authentic cultural experiences. Food connoisseurs seek authentic dishes The commonality amongst this diversity is that the disparate practices that subtend these domains all in some way relate to identity, whether that be cultural, organisational, or personal identity.

This diversity foregrounds a central issue – the obduracy (or otherwise) of general understandings. To what extent, and in what ways, does the general understanding condition those practices in which it is taken up, rather than being conditioned by them? What is the status of the entity we call a general understanding? If we consider the general understanding as a concept, then we might consider what Deleuze and Guattari call "the contour of its components" (1994, p. 21); that is to say the dynamic relation of the elements that are bound together within it as a "relational nexus" (Brubaker, 1996, p. 8).

It is perhaps useful to very briefly consider other very diffuse cultural understandings that are common to many practices, condition the manner in which those practices are carried out, and are expressed in their performance. Interesting comparisons and contrasts could be made between authenticity and such very different cases as: the category of "nation" (see, e.g. Anderson, 2006; Brubaker, 1996); and Taylor's (2004) three fundamental "social imaginaries" that define Western modernity – the public sphere, the market economy and society.

[1] We note also the affinity of teleoaffective regime here with certain definitions of "institution" (e.g. Lizardo, 2012. p. 76)

For Taylor the "modern social imaginaries" are constitutive of modern society, and enable, by making sense of, certain social practices. Social imaginaries are widely shared, pre-reflexive understandings and are themselves not separate from the social practices through which they transpire. According to Taylor they operate at the level of pre-doctrinal "embodied background understanding and that which while nourished in embodied habitus is given expression on the symbolic level" (1992, p. 219). Modern social imaginaries are congruent with secular, meta-topical spaces; that is, presented to their members as a "framework that exists prior to and independent of their actions" (Taylor, 2002, p. 115).

At the same time each is clearly also the subject and ground of discursive struggle. It is in that sense that Brubaker (1996) addresses "the nation" as category of practice. Furthermore, all of these examples represent 'macro' categories which are established through praxeological instantiation (Coulter, 2001). Clearly, each is configured through very different institutional relationships, and, as a 'macro' category, each is enacted through different kinds of instantiation. In both these senses these examples of general understandings are markedly different from that of 'authenticity'. Authenticity, whilst it can be shown to be imbricated in various configurations of practice (including certain legal institutions, such as trademarks), has nothing like the same order of institutional embodiments as nation, society or market (nor perhaps public sphere). Nation, society and market could also be considered socio-technical objects, the subjects of statistical aggregation and manipulation, in a way in which authenticity clearly could not (although authenticity does have a relationship to certain metrics, such as brand valuation, or sustainability metrics). Nor is authenticity a 'macro' category; its instantiation in practice therefore takes a quite different form.

Taylor's "modern social imaginaries" draw to our attention how general understandings may operate outside of the discursive, as fundamental background understandings. Furthermore, Anderson (2006) stresses how the imagined community of the nation operates not just on an ideational but an affective level. General understandings, therefore, should be understood not simply as discursive categories, but also as pertaining to the pre-reflexive and affective. Authenticity can be seen to be deeply entwined with affectivity, as we shall discuss below, in its intrinsic relation to understandings and experiences of self- and collective identity; and furthermore should perhaps be understood as a pre-reflexive background understanding to diverse forms of identity.

General understandings are not inherently normative, but there is a relation to be teased out between general understandings and the axiologies, or "orders of worth" (Boltanski and Thevenot, 2006), which they may inform. A particular kind of general understanding refers to what in everyday language we would call 'values'. Authenticity is clearly one such.

Practice theoretical accounts are reticent to refer to 'values', given their theoretical baggage, particularly as anterior conditions of action. However, what are commonly referred to as values are neither only post-hoc "vocabularies of motive" (Mills, 1940), nor simply "moral intuitions" (Haidt, 2007) through which individuals unreflexively respond to context. They are also the normative grounds discursively deployed in the sort of situations of contention that 'conventions theory' has done so much to address (Boltanski and Thevenot, 2006; Thevenot, 2014): appeals to, or contestation between, "orders of worth" (between for example an ecological or a commercial rationality). As Sayer puts it:

> "Values are 'sedimented' valuations of things (including persons, ideas, behaviours, practices etc.) that have become attitudes or dispositions, which we come to regard as justified. They merge into emotional dispositions, and inform the evaluations we make of particular things, as part of our conceptual and affective apparatus. They may be associated with a particular practice (for example, medical ethics) or be common to many (e.g. valuations of virtues like kindness)." (Sayer, 2012 p. 171)

General understandings may, then, partake of axiologies which subtend the teleoaffective structures of multiple individual practices, and are the grounds through which normative appeals are made. The general understandings of our axiology may invoke, or adjudicate normative controversy in the proper pursuit of practice, and may govern activity in the sense of the normative informing of practical intelligibility, or the normative form that practical intelligibility can assume (Schatzki, 2002).

3.1 The Genealogy of Authenticity

The English adjective *authentic* is derived from the Medieval Latin *authenticus*, itself from the Greek *authentikos* (original, genuine, principal); from *authentes* "one acting on one's own authority", from *autos* "self" and *hentes* "doer, being" (www.etymonline.com). It is first recorded in the mid-14C with the senses of "possessing original or inherent authority, being genuine and accordance with fact" (OED, 1889). For Chaucer (1369), a character's stories could be "autentike", and by 1523 the OED notes it being used as a quality of living persons, rather than in the sense of an index of their authority or authorship. Milton (1667) uses it in the sense of original, first-hand, and prototypical as opposed to copied (OED), as well as "own" and "proper" (Chambers, 1998). By the 18C it had acquired the meaning of "acting of itself, self-originated", as in: "The spontaneous or authentic motions of clockwork" (OED). The archaic noun form *authentity* appears in the 1650s and *authenticity* in the 18C, with the meanings of: as being authoritative, duly authorised; accordance with fact, as being true in substance; as being what it professes in origin or authorship, genuineness; and, as being real, actual, reality (Chambers, 1998). By 1760 Hume could speak "With regard to the authenticity of these fragments of our highland poetry" (OED, 1899).

Taylor's (1989, 1993) account of the origins and cultural specificity of modern Western selfhood places authenticity centre stage. The modern sense of self, argues Taylor, is crucially dependent on a notion of authenticity as relations of inside and outside: "we think our capacities or potentialities as 'inner', awaiting development which will manifest them or realize them in the public world" (1992, p. 92). The modern subject adopts a "radical reflexivity" and:

> "…what we turn to in radical reflexivity seems to demand description of something 'inner'. This spatial metaphor is irresistible to describe the 'space' opened up by self-scrutiny." (Taylor, 1992, p. 103).

Thus artistic authenticity is realised in external expression faithful to inner creativity. The authentic is that which offers a direct expression of its essence. To live authentically becomes self-realisation understood as communion with, and expression of, the inner essence of the person. As Lindholm puts it: "Finding and revealing this true self became the holy grail of modernity" (2009, p. 151).

This 'identity' form of authenticity (as opposed to the 'authority' form) is above all, therefore, an issue of the relation of inner and outer, and its achievement or assignation as a state is characterised by identity (or correspondence) with origin or interior. Key to our account is how this becomes a general structure of understandings of identity.

The modern notion of the authentic self is, according to Trilling's (1972) seminal work, a hybridisation of Romantic subjectivity (being true to oneself) with the Protestant moral ideal of "sincerity" (being true to others), which itself arose in the gradual breakup of the face to face relationships of Feudalism (Trilling, 1972; cf. Campbell, 1989)[2]. As Lindholm puts it:

> "…the self-interrogating and individualistic creed of Protestantism…made believers skeptical about the moral value of social roles, and led some of them to seek an irrefutable inner experience of spiritual enlightenment. This was a crucial psychic move toward authenticity." (Lindholm, 2009, p. 151)

Romanticism's preoccupation with authenticity and sincerity intensified concerns and questions that had pervaded philosophy and literature throughout the 18C (Sinanan and Milnes, 2010). The development in the 18C of printing atechnology, and the emergence of "print capitalism" (Taylor, 2004), saw new, secular literary genres reaching a wide reading public. Sinanan and Milnes note that:

> "The Romantic period saw a heightened awareness of this dissemination, a concern that focused on the authenticity of the selves who wrote such works as well as the sincerity of the feelings they expressed. Allied to this concern was a desire to discover a holistic self at the heart of writing, a hub at which the meaning of a word might be connected with the truth of an intention."(2010, p.2)

The concepts of authenticity and sincerity acquired their "numinous character through Romanticism's investment in the discourse of origins" (ibid, p. 3), and are linked through the concept of the 'genuine'. Their common element is the notion of an authorizing origin. As Lindholm notes:

> "[T]here are two overlapping modes for characterising any entity as authentic: genealogical or historical (origin) and identity or correspondence (content). Authentic objects, persons and collectives are original, real, and pure; they are what they purport to be, their roots are known and verified, their essence and appearance are one." (2007, p. 2)

The two modes undergo a historical shift in semantic emphasis from the 18C to the 19C, such that:

> "…an authentic thing is becoming less a prototypical or original thing, and more a genuine thing, that is, something that really proceeds from its origin – in the case of writing, the intending consciousness of the writer." (Sinanan and Milnes, 2010, p.6)

The second, characteristically modern form of authenticity, sees the interiorisation of the source of moral authority, the obverse of formal, institutional authority.[3]

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[2] Sinanan and Milnes (2010) stress the articulation of authenticity and sincerity *within* Romanticism.

[3] We note here also the drive amongst the French revolutionaries for "transparency" between the individual and the general will and thus against institutional form: "the profound union of sentiments" (Lindholm, 2007,

The cultural emphasis on authenticity can also be placed within the context of : the development of capitalism; the separation of private and public in modernity; Enlightenment ideals of equality; and the form of sign modality that accompanies the Cartesian revolution.

Lindholm summarises thus:

> "The worldview of capitalism, associated intimately with both Protestantism and scientific reason, also had a major part to play in the evolution of authenticity. In a fluid marketplace, the former cosmic order of work and locality no longer defined the self. Subservience and role-playing became shameful, and newly rootless individuals nostalgically began to seek truth not in ritual, but in the expressive emotional intimacy of family life. This was a major source for the association between authenticity and feeling. (2009, p. 151)

The private became the arena of the authentic self, liberated from the strictures of public roles in the familial domain of affective relations.[4]

Enlightenment ideals of equality, further, implied "belief in a sacred and universal moral self, existing beneath the social framework", which in turn supports the notion of an authentic self, the essence of which lies beneath social roles and conventions (Lindholm, 2007 p. 6).

Parish notes a further support for the understanding of the authentic self:

> "Modernity is more than the condition of living among strangers; it is also a particular way of living among symbols. The plunge into modernity involves seeing symbols as subject to rational and instrumental manipulation, as having an arbitrary basis and no inherent connection to self. In the Cartesian framing, the cogito, the thinking self, finds certainty, becomes certain of its own reality, only in detachment from the world." (2009, p. 143-44)

An extended genealogy would reflect on the templates for the realisation of the authentic self offered by literature and philosophy: from Alceste, the protagonist of Moliere's *The Misanthrope* (1666), according to Trilling (1972) the first exemplar of authenticity; through Diderot's *Rameau's Nephew* (1805) and Goethe's prototypical Romantic 'young Werther', celebrated in Hegel's *Phenomenology of Spirit* (1807) as a new kind of authentic, anti-bourgeois, radical individual; to Rousseau's and Montesquieu's radical ideals of authentic individual identity (see, particularly, Berman, 1970), and their inheritance in Emerson; and to Nietzsche's exhortation "Be yourself!" ; and on to Heidegger and Sartre.[5]

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p. 7). This mirrors the attack on "formality" in the English Revolution – outward, institutional "forms" were deemed, to use the term anachronistically, inauthentic (see, e.g. Davis, 1993); an anti-formality that we can trace on to nineteenth century anarchism and thence to the counterculture of the 1960s.

[4] Emotional authenticity having been sanctioned in the 18C by the nascent bourgeois cult of sensibility, which had challenged the aristocratic virtue of mannered, affective self-control (see Campbell, 1989).

[5] See Lindholm (2009) for a concise summary.

Above all else the template for authentic self-realisation is found in the 'cult of the artist'. Romanticism raised "the ontological and discursive status of the work of art to an unprecedented level" (Sinanan and Milnes, 2010 p.17), and by the nineteenth century the artist had become the "paradigm" for self-realisation (Taylor, 1992).

At this juncture, which may seem some distance from a practice theoretical account, it is worth recalling Foucault's notion of "technologies of the self":

> "… which permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct and ways of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality." (1988 p. 18)

Foucault (1988) found technologies of the self in pagan and early Christian practice in activities such as writing, reading, meditation and contemplation, prayer and ritual practices of penance, as well as complex configurations of "care of the self" in the ordered common life of groups such as the Pythagoreans. Psychotherapy is an obvious modern version, but the category would also include certain bodily regimes.

The ethic of authenticity is enacted today through diverse practices of self-realisation.[6] To jump ahead, we can trace the transvaluation of the ideal of authenticity from embodiment in the radical, anti-bourgeois individual, exemplified in the figure of the artist, to contemporary practices of authentic self-realisation (or "technologies of the self") which include "organised self-realisation" in and through the capitalist workplace (Honneth, 2004). And in this context we note that authenticity understood as a general understanding enacted in practices of self-realisation foregrounds a key problematic for practice theory – that of the relation between the "external scaffolding" of culture (Lizardo and Strand, 2010) and individuals' "cultured capacities" or embodied dispositions (Swidler, 2008; cf. Lahire 2008; Lizardo, 2012; Martin, 2010; Vaissey, 2008).

3.2 Authenticity and Commodification

For as long as commerce has existed commodities have carried symbolic marks designating provenance and guaranteeing quality (Wengrow, 2008). In this sense, commodities have had a long established relationship to an understanding of authenticity in the senses of relating to origin, ownership and genuineness. The social and cultural dislocations of the industrial revolution intensified the need for such signs of provenance, and brands assumed a new prominence in commercial life, where their primary function was proof of provenance and thus guarantee of quality and against adulteration (Carrier, 1995). However, it would take until the twentieth century

[6] A subset of techniques of self-realisation involves producing heightened experiences of physical embodiment, whether through the use of psychoactive substances, sport or extreme experiences such as bungee jumping and sky diving. Parish (2009) suggests: "Perhaps Western authenticity seekers are trying to restore [the] ''indexical'' relationship to the world" (p. 145); "…the quest for the immediate felt experience that we call authenticity began on the rubble of reliable, sacralized institutional-ritual frameworks that once offered supplicants both order and transcendence…When the indexical experience of ritual is no longer possible, authenticity is one way to fill the existential gap" (p. 152). He goes on to suggest such heightened experiences of embodiment offer an analogue of indexicality.

for the more expansive connotations of authenticity to become fully associated with commodities, and the latter part of the twentieth century for marketing of brands and commodities to appeal to the sense of authenticity as self-realisation, and to associate the sedimented senses of the authenticity of products with projects of self-realisation.

Orvell (1989) argues that authenticity was not a category in early marketing in the nineteenth century in the US. Rather, the novelty of mechanical reproduction produced a celebration of "imitation": an unembarrassed embrace of the copy. Only by the end of the nineteenth century was there a reaction to mechanical reproduction, such that the aura of authenticity was sought, and the dialectic between imitation and authenticity became a leitmotif of American culture. For example, Gerald Stanley Lee writing in 1913 for a popular audience, would contrast the ersatz products of the "new Machine-made world" which filled him with "dread", with "the real thing in the Hand-made world, that fills me with pride and joy" (in Orvell, 1989, p. 157).

This ontology reflected that of the work of art, and the cult of the artist, which had already witnessed the commodification of authenticity. Sinanan and Miles (2010) note that the expansion of periodical literature in the nineteenth century was accompanied by a growing interest in literature "whose value might be supposed to lie in its opposition to mass-produced, ephemeral and public literary forms: the rare folio, the autograph letter, the hitherto unknown manuscript" (p. 22). By the 1820s periodicals were seeking to reproduce the private writing of figures such as Byron, the diaries of the famous, and so forth, accredited with enhanced authenticity by virtue of "their apparent promise of contact with self-expression untrammelled by consciousness of public desire" (ibid.). And as a corollary, the market value of rare editions, manuscripts and so on, rose markedly in the early nineteenth century (Sinanan and Miles, 2010).

The "culture of authenticity" was the project of an artistic and intellectual elite, the modernist avant garde. But it would "become democratised in the countercultural strain of popular culture that begins in the 1960s – in a taste for crafts…natural foods…camping, flea markets and collectables, and other means whereby the factitiousness of the industrial world is at least partially mitigated" (Orvell, 1989, p. 299)

4. The Role of Cultural Intermediaries

A key topic of cultural sociology since Bourdieu's *Distinction* (1984 [1979]) has been the role of "cultural intermediaries" as agents of social and cultural change. Bourdieu's (1984) "new cultural intermediaries" included:

> "...all the occupations involving presentation and representation (sales, marketing, advertising, public relations, fashion, decoration and so forth) and in all the institutions providing symbolic goods and services . . . and in cultural production and organization" (Bourdieu 1984: 359)

Nixon and Du Gay (2002) suggest by focusing on cultural intermediaries "it becomes possible to scrutinize the links between economic and cultural practices within the sphere of commercial cultural production; a scrutiny that can bring to light...the interdependence and relations of reciprocal effect between cultural and economic practices" (2002, p. 498).

Cultural intermediaries, as specialists in commercial cultural production, then, have a particular role in the purposive shaping of elements of practice. For our purposes, where our concern is with the activity of cultural intermediaries as a vector for the translation of the general understanding of authenticity across social space, two features of cultural intermediaries are particularly pertinent: the cultural co-ordinates of these intermediaries as a social group; and their interest and capacity in translating their key cultural understandings into novel domains.

For Bourdieu, these professions were located in a class fraction which formed the "ethical avant garde," or the *Träger*, in the Weberian sense, of late modern consumer capitalism (ibid, p. 356); which it both embodied in its own mores, values and practices and articulated through its role in cultural production (Du Gay, 1997). Cultural intermediaries therefore may have the capacity to mobilise economic practices to reproduce their own general understandings in the wider culture. For Bourdieu these professions typified a "new petit bourgeoisie", distinguished by a blurring and shifting of previously established cultural co-ordinates between high art and popular culture, and between work and leisure. The quasi-bohemian culture of the new petit bourgeoisie, for which the revolution in social and cultural mores of the late '60s provided a key orientation, establishes a crucial conduit between the understanding of authenticity championed by the modernist artistic avant garde and the mundane practices of contemporary capitalism. This quasi-bohemian culture was exemplified in the "creative revolution" of advertising, which as Frank notes "celebrated the mystical carnavelesque properties of creativity and actually embraced the critique of mass society that the ads of the fifties had done so much to inspire" in an assertion of the ethic of authenticity (1997, p. 39; cf. Schwarzkopf, 2015; Warlaumont, 2001).

Cultural intermediaries, both as individuals and groups, may establish their reputations and assert professional expertise through the successful translation of understandings between domains. We suggest this is particularly the case when cultural intermediaries pursue programmes of professional jurisdiction building, as in, for example, the development of practices of brand management and of the specialism of brand consultant, as a novel form of symbolic intermediary (Moor, 2007), and the development of the even more specialised role of sustainability communications consultant, which we discuss briefly below.

5.1. Brands, brand management and authenticity

During the 1990s a novel configuration of practices became institutionalised as 'branding' and 'brand management'. We suggest this configuration has been decisive for significant developments in the genealogy of authenticity, in which notions of authenticity have become central to the understanding of organisational identity (Knight, 2010), and the ethic of authenticity has been imported into the realm of work as practices of self-realisation (Boltanski and Chiapello, 2005; Donzelot, 1991; Fleming, 2009; Honneth, 2004).

The growing economic importance of brands in the post-war years reached a new level in the 1980s and 1990s, both in terms of their financial value, and the level and kind of activity organised around them. Brands became conspicuous at this time as a motivation for company mergers and acquisitions, and in 1989 the London Stock Exchange began formally recognising brands as assets on the balance sheets of UK companies (Lury, 2004). Whereas in the 1950s business discourse had come to recognise brands as symbolic extensions of products, during the 1990s increasingly products became the material extension of the brand (Askegaard, 2006).

As Moor notes, during the 1990s, "a previously diverse set of practices – product design, retail design, point-of-purchase marketing, among others - became consolidated into an integrated approach to marketing and business strategy known as branding" (2007, p. 3). During this same period branding became institutionalised in the UK and the US as a new province of cultural intermediaries in the form of branding consultancies.

Brands became "a key locus for the reconfiguring of contemporary processes of production" (Lury, 2004, p. 17). Furthermore, and crucially for our purposes, brand management extended its professional jurisdiction to that of the management of corporate organisational identity and 'corporate culture'.

According to Holt, contemporary practices of brand management are premised upon the idea that brands are offered as "cultural resources" (2002, p. 83) and that in order to achieve value as cultural resources they must be perceived as authentic. The fierce competition between brands over authenticity raises the bar on such claims, whilst at the same time anti-brand critics and sceptical consumers are provided leverage to expose the in-authenticity of these claims (Holt, 2002). Brand marketers and managers are engaged in an ideological struggle over the meaning of authenticity with anti-brand activists, who reframe authenticity to demand that corporations are *transparent* in their behaviour to employees, consumers, governments and the environment (Holt, 2002); or in other words engage in corporate sustainability. *Transparency* has become a key organising logic of contemporary organisations and institutions, reflecting the basic model of authenticity in identity, and enacted in corporations in practices of sustainability and Corporate Social Responsibility monitoring and reporting (Hansen et al., 2015).[7]

5.2. Authenticity, Organisational Identity and Sustainability

Authenticity has become a central understanding of brand management and today 'brand' has become the default organisational model for institutional identity. For example, a commonplace technique of brand management's organisational identity work is the development of 'brand values'. This involves selecting a number of named 'values' that encapsulate and express the core positive features or attributes through which the organisation wishes to be known, for example: 'Integrity', 'Vibrant', 'Can Do' Whilst 'brand values' may inform the external marketing programmes of corporations their primary role is to be communicated didactically to an internal organisational audience, and to inform, frame and structure further brand management communications of corporate culture. One example the authors have encountered includes running an internal competition for employees to produce short work related stories based on individual brand values. Furthermore, brand practitioners activities in establishing 'brand values' within an organisation are performative, initiating senior management into the expansive notion of 'brand' that branding practitioners conjure into being (Welch, 2012).

The extension of brand management's professional jurisdiction to encompass organisational identity has perhaps inevitably seen authenticity become a frame through which organisational identity is understood. Authentic realisation of corporate identity is the transparent alignment of the values of corporate culture with its activities and promotional representation. Arguably, the homology of

[7] See special edition on 'Logics of Transparency: Paradoxes, mediation and governance' *European Journal of Social Theory* 2015, vol 18 (2)

corporate 'personhood' and individual personhood supports this translation of understanding (Du Gay, 2007).

A further context in which this nexus of brand, organisational identity and authenticity is what Knight (2010) has called "the promotional public sphere" of contemporary media communications. The very visibility of brands and their success in linking themselves to values and meanings makes them the potential focus of criticism for corporate behaviour. As Knight notes, the "promotionalism" of brand management is reflexive and self-problematising in character:

> "It is not only a solution to corporate communication and identity, but it is also a source of new problems that result precisely from the side effects of success" (2010, p. 553).

Brands have become the locus for communicative struggle over corporate reputation in the "promotional public sphere" (e.g., Klein, 2000). Knight argues (2010) that a key effect of the promotional logic of this mediatized environment is that the "rationalization of decision-making and opinion-formation makes identities the point of reference for assessing and evaluating ideas" (p. 178). The centrality of identity to communications in the promotional public sphere is such, argues Knight, that:

> "The accentuated role of credibility and belief makes the professionalization of identity formation, through the growing role of experts and consultants in message and image design, more important as a communicative resource." (2010, p. 181)

The practices of brand management are the specialist province of this organisational identity work. There is, then, a general tendency towards the importance of identity formation and maintenance at work in the promotional public sphere, which we see professionalised as brand management.

That same tendency militates towards an ethical dimension. The emphasis on identity in the promotional sphere foregrounds reputation, reinforcing a strong ethical dimension to brand identity (Knight, 2010). Corporations engage in such initiatives, at least in part, to address the self-problematising character of brands. Corporate Social Responsibility and 'corporate sustainability' initiatives are crucially concerned with redefining relations between the firm and 'externalities': relations of interior (the firm's internal operations) and exterior ('stakeholders', supply chains, nature). As such sustainability is peculiarly suited for mobilisation by brands as a resource of authenticity.

This nexus between organisational identity, brand and sustainability is summed up well in a research report published by Ashridge Business School, the result of an extensive review of corporate sustainability programmes and interviews with corporate sustainability practitioners:

> "[W]hat differentiated the real pioneers was the intersection of brand, culture and how they are framing sustainability. Most significantly, the change strategies they employed took account (consciously or otherwise) of their organisation's identity…Organisational identity is where brand and culture meet." (Stubbings and Ceasar, 2012: 1)

This nexus has, furthermore, seen the development of a novel commercial field of 'sustainability communications' developing as a hybrid between brand management and Corporate Social

Responsibility, in which sustainability provides the resource for brands' projects of authenticity (Welch, forthcoming).

5.3 Authenticity at Work

A further field in which the nexus of authenticity, brand and sustainability is articulated is that which Honneth (2004) has referred to as "organised self-realisation", or "technologies of the self" (Foucault, 1988) enacted through work practices, whereby the authentic personality of individuals are articulated. In Honneth's normative account, "the presentation of the 'authentic self' is one of the demands placed on individuals, above all in the sphere of skilled labour," (p. 467) and where once the Romantic ideal allied radicalism and self-realisation (Berman, 1970), today the ideal of authenticity has become an institutionalised expectation "inherent in social reproduction [and] transmuted into a support for the system's legitimacy" (Honneth, op. cit)

If authenticity was once to be found in the private sphere of affective relations and the non-instrumental, creative genius of the artistic project, in this novel understanding the workplace becomes a means towards authentic self-realisation (Donzelot, 1991; Fleming, 2009). We place this in the context of what Boltanski and Chiapello (2005), in their analysis of '90s management discourse, call the "new spirit of capitalism": an identifiable complex of "shared beliefs, inscribed in institutions, bound up with actions and hence anchored in reality" (p.4), which, they argue emerged in response to the legitimation crisis of the late '60s and '70s as an ideology - understood in a materialist sense – "that justifies engagement in capitalism" (ibid).

If for Weber the exogenous values that animated the culture of early capitalism were drawn from Protestant religiosity, the cultural resources for the new culture of capitalism were found (just as they were by advertising's creative revolutionaries) in the countercultural critique of mass culture in which the ethic of authenticity plays such a central role. For Boltanski and Chiapello, the new managerial discourse "aims to respond to the demands of authenticity and freedom" (2005, p. 97) historically posed by what they call the *artistic critique* of capitalism, the bohemian revolt against the inauthenticity and disenchantment of bourgeois life

The rise of Boltanski and Chiapello's "new spirit of capitalism" accompanies the intensification in the processes whereby workers' cognitive, affective and social skills become integral to the labour process. Their appropriation therefore demands novel justification. Furthermore, changes in institutional organisation and everyday work practice associated with a move to post-Fordist forms of production demand a new, reflexive, self-governing worker (much as the liberal state demands a self-governing citizen) out of place with the older managerial ideology and techniques of control.

As brand management has extended its expertise into the realm of corporate culture, to processes internal to the organisation as well as external relations, it has sought to actively articulate processes of "employee engagement" which seek to align the affective investment of workers with organisational goals and corporate identity through 'brand values'. For example, the head of 'Business + Social Purpose' at Edelman, the world's largest public relations firm, notes:

> "Employee engagement is absolutely critical for every business today that wants to win in the market place...how the employee feels the authenticity and the relevance…We know from research [younger employees] expect companies to stand for something and provide opportunities for engagement…[they ask] 'How do I get involved with our green and

> sustainability strategy? In human rights policy? … Today it's a war for talent and companies must have a greater purpose so they can be successful." (3BL Media, 2011)

The new cultural politics of work that Boltanski and Chiapello (2005) elucidate have been with us for some time. The mobilisation of sustainability within them is, however, new. If the raison d'etre of the revolution in values in the workplace that Boltanski and Chiapello (2005) identify is ideological justification for engagement in capitalism, then the discourse of corporate sustainability has an important role to play, as business enthusiasm to marshall sustainability in the 'war ofor talent' avers.

Sustainability, then, offers a new and powerful resource for authenticity in the cultural politics of work, supplementing the existing resources of the artistic critique and enabling "technologies of the self" (Foucault, 1988) around engagement with practices of sustainability (both in terms of private consumption and professional practice) by which individuals seek to achieve authentic self-realisation.

6. Concluding Thoughts

We began by contrasting authenticity with other, very different and extremely important general understandings: nation, society, market, and public sphere. Any genealogy of general understandings will necessarily trace a contingent historical path in which understandings are articulated in and through very different institutional contexts. Perhaps there is therefore little general to say about general understandings. We have drawn to attention however how certain general understandings may operate simultaneously discursively, pre-reflexively and affectively. General understandings may be articulated in the 'sayings' of various practices, and their discursive nature enables articulations between practices and configurations of practice unavailable to other kinds of 'doings' of practice. They may subtend axiologies. At the same time they may be embodied, pre-reflexive and doxic (Bourdieu, 1977). Seekers of authentic experience do not have to resort to discursive articulations in order to embody an understanding of the authenti c as that which offers a direct expression of its essence

In our account of the translation of authenticity from Romanticism to brand management we focused on the identity mode of authenticity. We could equally have foregrounded the historical (or 'origin') mode (Lindholm, 2007). This mode has a perhaps more obvious articulation with the notion of brand, as a mark of origin. Here 'the genuine' is defined through provenance, heritage and tradition, and authenticity may operate as a mode of distinction, such as in, for example, food and wine connoisseurship (e.g. Johnston and Bauman, 2010; Beverland, 2005). Here again cultural intermediaries have a particular role to play, and we could look at the particular modes of instantiation of authenticity they employ to articulate brands as cultural resources (e.g. Lien, 1997; Smith Maguire, 2013; Holt, 2006a, 2006b). Alternatively, we could have traced how authentic artistic expression is articulated and commodified in the contemporary culture industries (e.g. Jones, et al , 2005; Peterson, 1997). These variations of inter-related forms of authenticity in contemporary culture underscore the value of approaching general understandings as relational nexuses (Brubaker, 1996), and the importance of specific social groups in their translation and instantiation.

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Sayings, Texts, and Discursive Formations

Practice theories have has brought much attention to the organized action nexuses where social life plays out. They have said relatively little, however, about language as an element of these nexuses. Pierre Bourdieu (1991) connected language to symbolic power, Andreas Reckwitz (2006, 2008) conceptualizes the social as a network of practice-discourse complexes, and William Hanks (1996) incorporates close attention to unfolding practice into a general account of language in human life. This is insufficient attention, however, for a phenomenon that some theorists have treated as constituting or instituting an abstract structure that pervades human existence, and that on any account is central to social life. The current chapter aims to help rectify this deficit. Its central question is, What might practice theory say about sayings, texts, and discourses? How can these phenomena be brought into accounts of a practice theoretical persuasion and be made part of their social analyses?

It so happens that a general research program called "discourse analysis," especially the work of Norman Fairclough, James Gee, and Ronald Scollon, has already plowed highly convergent terrain. Davide Nicolini (2012, 189) writes that these theorists' insights "are directly applicable, or at least highly relevant, to the understanding of social practice." More specifically, I would say, ideas of theirs are relevant to grasping the *discursive* component of social practices. The pertinence of their ideas partly reflects the fact that they treat discourses, not as abstract structures as many structuralists and poststructuralists have done, but as something to do with utterances (see Reckwitz 2008, 192-3, on this contrast). It also results from the fact that

each of these thinkers works with a conception of social practices and accords practices general ontological significance.

This chapter begins by exploring congruencies between discourse analytic ideas and practice theories. Following this, section two analyzes sayings and texts as elements of practices on the basis of my own account of the latter. A third section considers both the role language plays in constituting large social phenomena and what sort of large discursive formations might exist in the plenum of practices.

1. The Basic Ontologies of Discourse Analysis

Discourse analysis approaches language from what surrounds it. Instead of focusing on the properties of language as such (e.g., grammar, syntax), it treats language as an element of sayings and texts and sayings and texts as embedded in social life. It theorizes language as a social phenomenon and examines grammar and syntax only in so far as they either engage with fundamentals of social existence (as in Halliday's 1994 systematic functional linguistics) or reflect or implicate social phenomena.

As indicated, moreover, discourse analysis highlights activity and sets aside construals of language and discourse as abstract structures. These features reflect the ideas of two philosophers, John Austin and Ludwig Wittgenstein. Consider what is perhaps the most prominent definition of discourse: language-in-use. Because "use" refers to activities, this definition treats discourse as an element or feature of activity.

This way of thinking reflects Austin's contention that speaking is acting. Another widely cited notion of discourse is Gee's concept of Discourse:

> I use the term "Discourse"…for different ways in which we humans integrate language with non-language "stuff," such as different ways of thinking, acting, interacting, valuing, feeling, believing, and using symbols, tools, and objects in the right places at the right times so as to enact and recognize different identities, give the material world certain meanings, distribute social goods in a certain way, make certain sorts of meaningful connections in experience…. (Gee, 1999, 13)

This definition reflects an intuition that lies behind Wittgenstein's coinage of the term "language game." Wittgenstein (2009, §23) wrote, "The word 'language-*game*' is used here to emphasize the fact that the *speaking* of language is part of an activity, or of a form of life." This quote claims that speaking, which is an activity, is part of broader activities. As suggested by the expression "form of life," these broader activities encompass both further acts of speaking and nonlinguistic doings (doings that do not use words, phrases, or sentences). Wittgenstein's intuition, in other words, is that linguistic activity is interwoven with nonlinguistic activity in human life. This is exactly the thought expressed in the quote from Gee.

Discourse theorists advance different conceptions of the interwovenness of linguistic activity with other activity. Since each of the three theorists considered here works with a notion of practices, these different conceptions can be described as alternative understandings of the relation of language or discourse to practices.

Scollon nearly submerges discourse in practices. His starting point is the idea of mediated action (e.g., Wertsch 1998). According to this idea, human activity is always mediated by (meaningful) entities distinct from the actor. Material objects figure prominently among such mediators, as does language: when a person speaks or writes, language mediates her activity, that is, it is a means whereby her action is accomplished. For Scollon, moreover, a practice is a repeated action; the practice of x exists when actions of x-ing have been sufficiently repeated to be recognizable as x-ings. The crystallization of repeated x-ings as the practice of x also coordinates with the development of knowing how to x in the bodies of those who x (Bourdieu's habitus). In addition, actions, in the locales in which they are performed, for instance, classrooms, stores, kitchens, and airport terminals, are usually performed as part of combinations or sequences of actions. When each of the (types of) actions involved is a practice, the resulting bundlings of practices in locales are called nexuses of practice.

Gee, meanwhile, holds that discourse is language-in-use or strings of spoken or written sentences. As indicated, he adds to these the idea of Discourse, which denotes ways of combining language with nonlanguage stuff. The notion of Discourse is particularly important for the project of analyzing language as a social phenomenon, for according to Gee society is composed basically of Discourses (2014, 128). Identifying a Discourse, however, reveals little about the particular configuration of language and nonlanguage stuff that it embraces. The notion of practice performs some of this work. A practice, or game (as Gee Wittgensteinianly prefers), is a "socially recognized and institutionally or culturally supported endeavor that usually involves sequencing or combining actions in certain specific ways." (2014, 32) Examples are mentoring a

student, lecturing before a class, and playing Yu-Gi-Oh. Like nondiscursive actions, discourses as strings of sentences or as language-in-use are components of practices. Practices, in turn, are concrete forms of Discourse.

Fairclough propagates related views. He distinguishes discourse and practice in the singular from discourses and practices in the plural. His conception of these phenomena, however, shifts. Sometimes, for instance, “practices” refers to types and tokens of action (e.g., Fairclough 2015, 61). At other times the plural form is not used and “practice” more or less means situated action; in this usage, the expressions “discursive practice” and “social practice” mean speaking and writing as situated, respectively, in processes of text production, distribution, and consumption and in social institutions and organizations (Fairclough, 1992, 66-73). At still other times (e.g.,Chouliaraki and Fairclough, 1999), practices are analyzed as entities that combine (1) material activity (i.e., nondiscursive doings), (2) discourse (i.e., semiotic entities such as language and images as used in activity), (3) social relations and processes, and (4) mental phenomena. This third view offers a rich conception of practices that treats discourse as part of practices. As I discuss below, Chouliarski and Fairclough annex this account of discourse to Bourdieu’s theory of field and habitus and hold (104-5) that it provides the account of this phenomenon missing and needed in Bourdieu.

Discourse analysts, like practice theorists, disagree about whether the distinction between discursive and nondiscursive action is fundamental (cf. Giddens 1984, xxii). Scollon joins Giddens, Gherardi, and Shove et al. in upholding what might be called a “monolithic” theory that portrays all activity as of one basic sort (e.g., mediated action in Scollon). By contrast, Gee and Chouliaraki & Fairclough join Reckwitz, Taylor,

Bourdieu, and myself in treating the discursive/nondiscursive distinction as fundamental and in construing practices as composed of actions of both sorts. Note, incidentally, that Scollon and Gee, on the one hand, and Fairclough on the other take up opposed positions on the further issue of whether practices are regularities or manifolds.

The difference between discursive and nondiscursive actions is fundamental to conceptualizing practices and social life. Acknowledging it upholds the importance of language and facilitates a more nuanced understanding of what action accomplishes, for example, the varied differences and contributions that doings and sayings make to social existence. Consider, for instance, Gee's idea that when people speak or write they at the same time "build seven things or seven areas of 'reality'" (2014, 32). These areas are significance, practices, identities, relationships, politics (the distribution of social goods), connections (between things/topics), and sign systems and knowledge. Nonlinguistic doings contribute to these building tasks, too, though they do so in different ways and to different degrees than sayings do. Making the discursive/nondiscursive difference fundamental facilitates explorations of convergences, divergences, and entanglements in these contributions.

However, the conceptions of practices promulgated by most practice-minded discourse theorists lack a key element: organization. Practices are *organized* sets of doings and sayings. The only organizations that Scollon and Gee recognize are sequences, combinations, repetitions, and co-occurring repetitions of action. These phenomena are patterns and, thus, organizations only of the weakest, empiricist sort. What Scollon and Gee neglect is the organization of what informs action, in particular, of what informs the actions that compose practices.

What organizes practices in this way informs both the saying and the doings that compose given practices. This insight is fundamental to a proper understanding of practices. Recall, in this context, that Chouliaraki and Fairclough distinguish discursive from nondiscursive activities. They hold, further, that discourses are organized by what, following Foucault (see section three), they call "orders of discourse." Orders of discourse are socially ordered images, types of language, and nonverbal forms of communication that structure particular social practices or fields (in Bourdieu's sense of field; Chouliaraki and Fairclough 1999, 106, see 50-1, 56). Orders of discourse, however, structure only the discursive dimension of practices and fields. They have nothing to do with the "material activities," which according to Chouliaraki and Fairclough also compose practices: "an order of discourse is a socially structured articulation of discursive practices which constitutes the discursive facet of the social order of a social field" (1999, 114). Thus, although orders of discourse organize practices, they do not inform both the sayings and the doings that compose practices. In section three I return to orders of discourse and to the idea that the discursive component of practices has a distinct organization. At this point I want to focus on the organization that is common to doings and saying.

2. A Practice Theory of Discourse

Elsewhere (1996, 2002) I have argued that the organizations common to doings and sayings are made up of rules, teleological-affective structures, and both practical and general understandings. Practice organizations are strongly teleological and

normativized structures, in the context, and out of a knowledge, of which humans brought up to act for ends and to heed normativity proceed in their lives. The organization of a practice also determines which doings and sayings belong to it. To say that practice organizations pertain to sayings as much as to doings implies, among other things, that sayings are intentional, oriented to ends, parts of tasks and projects, and variously emotional, that they are carried out in response to rules, and that they, to varying degrees, articulate general understandings. People not just do, but also say, things when carrying on a given practice by way of pursuing ends, carrying out tasks or sets thereof, and being imbued by particular emotions and general understandings. As people proceed through different spheres of life—work, family, religion, recreation, provision etc.—they carry out practices through both sayings and doings.

Reckwitz's account of practice-discourse complexes conceptualizes the common organization of doings and sayings differently. Reckwitz construes practices (2002, 249-50) as routinized types of behavior (persisting blocks of bodily activity, mentality, background knowledge, emotion, motivation, and things and their use) and discourses (2006, 43) as practices of the production of regulated representations, or practices of representation for short. By "representations," moreover, he means textual and visual presentations (*Darstellungen*) of objects, subjects, and contexts (which constitute these as meaningful entities in the first place). Practices of representation include those of speaking, writing, science, painting, filmmaking, sculpture, and the like. Note that this list can be usefully expanded to include practices (in Reckwitz' sense) in which representations are consumed, thus such practices as those of listening, reading, looking at, and watching. Reckwitz claims that what holds practices and discourses

together in complexes are orders of knowledge. These orders are composed of forms of implicit knowledge such as "know-how, interpretive knowledge of routinized attributions of sense, and complexes of culturally modeled affects and motivations" (Reckwitz 2008, 202). Such orders imbue practices and discourses, giving them their form (*ibid.*). Discourses, in turn, produce knowledge orders and make them explicit (2008, 205). Knowledge orders, finally, are organized by cultural codes. These codes are networks of meaning patterns (*Sinnmuster*), "systems of central differences and classifications," for use in describing the world and dealing with it. These differences and classifications inform know-how, interpretation, and forms of motivation. I will return to codes in the following section.

Practice theory connects what people say (and do) to the organization of social practices. Practices, in turn, fill out the social context in which people proceed. This picture bears some resemblance to M.M. Bakhtin's (1986, 78,60) theses that people speak only in definite speech genres and that such genres are determined by the different functional spheres of activity and communication in society, for example, science, the technical, commentary, business, and everyday life. Each of these spheres, Bakhtin claims, develops its own types of utterance, which are constituted by typical speech situations, typical themes, typical expressivities, and typical addressees. These typicalities, moreover, reflect the conditions and goals of the spheres in which the genres they help compose develop. Relatedly, a speaker's choice of utterance type reflects not just thematic considerations and the concrete speech situation, but also the nature of the activity-communication sphere in which s/he speaks. Note that speech genres, like Fairclough's orders of discourse, concern discursive activity alone.

Oriented primarily toward discourse, both theorists overlook the common organization of sayings and doings.

To illustrate what it is to analyze sayings by reference to organizations that are common to doings and sayings, consider Hanks' notion of the participatory frameworks that belong to communication practices (practices such as conversations in which sayings take the lead). His notion is based on Erving Goffman's (1981) idea of a speaker's footing. A speaker's footing is her relationship to her own words. Direct, indirect, and quoted speech exemplify different possibilities. Goffman proposed that the status of speaker be replaced by a triumvirate of roles: the animator (the person who makes the sounds), the author (the person who selects the words and phrasings), and the principal (the person who is responsible for the statements and opinions expressed). This proposal underlies Hanks' idea (1996, 207) that communicative practices carry participant frameworks that are composed of roles open to those who speak or are the addressees of speech. According to my account, these communication roles, like roles more generally, are reference points for the apportionment of a practice's organization: which tasks, projects, and ends, for example, are acceptable for or enjoined of a participant in a practice depends on the role she occupies in it. In, for instance, the linked practices that the animator, author, and principle of a speech act carry on, the tasks, projects, and ends that normatively fall to the animator differ from those that normatively fall to the author and principal. This role-based apportionment can also affect what nonlinguistic doings people carry out: different nonlinguistic doings are acceptable for or enjoined of an animator who speaks at a meeting and the author who earlier typed the text on a computer. What's more, the apportionment of acceptable and

enjoined tasks, projects, and ends among people who occupy particular communication roles can be inflected by the wider roles that these individuals assume in the practices involved. For example, the doings that are acceptable for or enjoined of animators and principals will differ depending on whether the animator is quoting her friend, presenting a government administration's position, or acting in a play.

Any position that grants equal footing to sayings and doings is obliged to examine sayings as such. I will not say much on this topic. Sayings are a kind of activity. They are activities in which something is said. The idea, however, of saying something, however, is ambiguous. What a person says in saying something is, first, the words, sentences, and strings of words and sentences she utters. These words and sentences, as vocables, are texts. They are texts, of course, that usually perish in the event. What a person says in saying something is, second, what she says. If someone says, "The sky is blue" or "Bring me an apple," what she says in this second sense is that the sky is blue and to bring her an apple. Saying something in this sense is sometimes construed as assuming a relationship (e.g., asserting, wanting) to a propositional content. When what someone says in the second sense is so understood, sayings can be described as representings—as Reckwitz suggests in construing (linguistic) discourses as "sign-using practices viewed from the point of view of their production of representations." (2008, 203) Talk of representations (or of propositions) as opposed to representings raises a host of issues that philosophers have debated for decades. This is not the place to take these up.

Sayings as a general category of doing have been well analyzed in speech act theory (Austin 1962, Searle 1969, 1985). As especially Searle's version demonstrates,

to treat sayings as doings is to subsume one's account of speech into one's account of action. For instance, since practice theory ties actions to practices and practice organizations, in treating sayings as activities it holds that they are elements of practices subject to practice organizations. In this context, it is crucial to emphasize Wittgenstein's insight (2009, §23), seconded in speech act theory, that sayings can be actions of countless sorts, for example, asserting, denying, explaining, asking, complaining, describing, insulting, bothering, ordering, remonstrating, begging, celebrating, and so forth. Emphasizing multiplicity makes clear that what people are typically about in speaking is, not speaking as such, but performing an action to which the use of language is useful or crucial.

Under "sayings" I include acts of writing. Writing is a very different activity than speaking, but they share several key features. One is the use of language. A second is the saying of things. Reckwitz would add, controversially, that they both produce representations. What both incontrovertibly engender are texts, that is, collections of meaningful words and sentences, though these texts are usually evanescent in the one case and more durable in the other.

Sayings as activities qua token speech acts must be distinguished from what Bakhtin called "utterances," types of which he called "speech genres." Utterances are not like (token) actions of asserting, asking, or ordering that one can perform without ado by vocalizing some words. For Bakhtin (1986, 71) held that the boundaries of an utterance are given by a change in speaking subjects, and this claim implies that an utterance can encompass a series of actions, all performed by the same person. It is

useful to conceptualize Bakhtin's utterances as tasks, which people pursue by carrying out one or more actions, primarily sayings but also possibly nondiscursive doings.

To conclude this sketch of a practice theoretical account of sayings and texts, consider that some phenomena that transpire within bundles are best approached through bodies of investigation and theory that are different from practice theory but compatible with its ontology. A phenomenon transpires "within" a bundle when it is essentially composed of or dependent on components of the linked practices and arrangements that compose the bundle. When either situation obtains, the bundle forms a constitutive context in which the phenomenon transpires, though what this more specifically involves can vary. Examples of phenomena that transpire within bundles in this sense are interactions, the dissemination of knowledge, power and domination, experience, including aesthetic experience, and the constant adjustments that actors make to the world. Another example is understanding and interpreting texts and doings/sayings. Understanding is present in practices both as an action and as a condition, and to theorize it practice theory might be advised to draw on analyses of a philosophical sort. Another example is conversation, which is a type of interaction that transpires within practices, paired with conversational analysis, which is an established body of work that practice theorists might draw on in grasping conversations (see Nicolini 2012). A third example is texts, which can circulate within and among practices. A sort of approach that practice theory might appropriate in analyzing texts is text analysis: the analysis of the vocabulary, grammar, cohesion, and structure of texts (see Fairclough 1992, 75ff).

3. Larger Phenomena and Abstract Structures

Practices—organized manifolds of doings and saying—connect to material arrangements—composed of bodies, artifacts, living creatures, and things of nature—to form practice-arrangement bundles (e.g., Schatzki 2002). Such bundles, in turn, connect to other bundles to form wider constellations of practices and arrangements. Social life transpires within these bundles and constellations; all social phenomena consist of sectors, slices, or aspects of bundles and constellations. Bundles and constellations, moreover, assume diverse shapes and sizes. When, for example, bundles connect, the resulting constellations are typically larger (in the sense of spatial extension) than the original bundles; repeated connections that are not matched by significant decouplings result in very large constellations such as those in which governments or economic systems consist. Interconnected constellations, finally, blanket the globe and extend under the earth and into space. Taken together, bundles and constellations form one gigantic nexus of practices and arrangements, what I dub the "plenum of practice." (Schatzki forthcoming)

I wrote in section one that many discourse analysts neglect the organization of practices. They also do not analyze this wider plenum. For instance, Gee, in addition to writing that society is composed of Discourses, claims that interactions among Discourses determine both the workings of society and much of history (2014, 128). This is not, however, an idea he develops. Similarly, Scollon envisions practices forming nexuses (networks of repeatedly linked practices), imagines a form of analysis—nexus analysis—that would systematically and ethnographically study

intersecting cycles of discourse (e.g., Scollon and Scollon 2004, 29), and analyzes communities of practice as objectified nexuses, that is, as nexuses of practice that participants treat in discourse as bounded communities (2001, 155-6, 170). Like Gee, however, Scollon does not develop these ideas further, though some of his remarks suggest that he is not so much disinterested in social ontology as an advocate of a Garfinkelian view of the local occasionality of the social. Chouliaraki and Fairclough (1999), by contrast, are very concerned to connect discourses and practices to major issues in social theory. As suggested, moreover, they appropriate Bourdieu's notion of a field and, like him, construe fields as the principal container of practices. This is not, however, a matter they elucidate.

These observations are not criticisms. Discourse analysis is interested in discourse, not in social ontology, and it is not obliged to fill out the ontologies that it affirms or toward which its concepts point. At the same time, issues exist about the role of sayings, texts, and discourses in this plenum. The current section examines two such issues: how sayings, texts, and discourses contribute to the construction of the plenum, that is, to linkages among bundles and constellations, and whether large-scale discursive structures or formations characterize the plenum.

Elsewhere I have written that practices and arrangements are linked by relations such as causality (e.g., activities effecting and responding to arrangements), constitution (activities and objects being essential for each other), intentionality (e.g., the directedness of activities and mental conditions toward arrangements), intelligibility (practices making the entities that compose arrangements meaningful), and prefiguration (the bearing of arrangements on future courses of action). The resulting

bundles, too, are related to one another in various ways, including via common actions, organizational elements, or material entities; chains of action; common motivating events; participants in one bundle being intentionally directed to other bundles; overlapping, orchestrated, or mutually referring places and paths; orchestrations of (i.e., mutual dependencies among) actions, material entities, and organizational elements of different types in different practice-arrangement bundles; and physical connections and causality. It is out of relations such as these that practices link with arrangements and bundles form constellations.

Language, sayings, and texts play a myriad of roles in these relations. Space considerations require that my discussion of these be schematic. Sayings can motivate people to intervene in or to respond to the world and, as events, cause events that befall material arrangements; elements of practice organization, like people's directedness toward entities, are articulated, that is, given (explicit) content in the terms of language; sayings and texts contribute to what makes sense to people to do and the intelligibility of things in the world; sayings and texts can indicate events and matters, to which people in different practices and bundles react; sayings and texts in one bundle can be about other bundles, the components of other bundles, or events occurring in them; and sayings can be links in chains of action as well as contribute to orchestration. Clearly, language, sayings, and texts greatly contribute to the relations by virtue of which the plenum of practices is a mass of interconnected practices and arrangements.

Sayings and texts contribute to this interconnectedness in other ways. Texts, for instance, travel among bundles, among other things, disseminating ideas, topics, motivations, self-understandings, and focuses of attention, establishing intentional

directness among bundles, and leading to individual or joint actions. An example is what Reckwitz (2006, 67) calls “interdiscourses.” Interdiscourses are discourses, carrying descriptive-normative representations of subjects, that cross different social fields and diverse practices, thereby establishing representations of subjects as unified wholes. Closely related to the circulation of texts is what Fairclough calls “intertextual chains,” which are “series of types of texts which are transformationally related to each other in the sense that each member of the series is transformed into one or more of the others in regular and predictable ways.” (1992, 130). An example is a speech becoming a press release becoming both a webpage and an item on the evening news. Just like texts, sayings, too, both the activity and what is said, can give people ideas, shape their motivations, direct them to particular events and phenomena, lead them to respond, and contribute to what actions they subsequently perform, individually, connectedly, or collectively. In these ways, sayings contribute to the evolution of practices and bundles and, more broadly, to the course of history, in predominantly miniscule and occasionally large ways.

Sayings are also links, or parts of links, in what Bakhtin called “chains of utterances.” Bakhtin (1986, 91) pointed out that utterances are full of echoes and reverberations of prior utterances. People quote others, appropriate words or phrases that they have heard or read, absorb ideas expressed in others’ words, and are motivated or oriented by what others have said. What’s more, their utterances, explicitly or sotto voce, refute, affirm, supplement, rely on, presuppose, and take what others say into account. Utterances also anticipate possible responses and, of course, become part of the stock of utterances to which subsequent utterances “respond” in the ways

just mentioned. By virtue of all this, utterances form chains, each link in which responds to previous links. These chains circle within bundles and constellations and pass through and between different bundles and constellations, thereby connecting them into larger bundles and constellations.

Finally, types of sayings such as explaining or describing peregrinate through the practice plenum, appearing in large numbers of practices and bundles and thereby forming a commonality among them. Reckwitz (2006, 66) develops this idea by noting complex dispersed practices that show up in various domains of modern life, that is, as part of different constellations in the overall modern plenum. An example he mentions is the practice of experimentation, which marks postmodern culture in different domains of contemporary Western life.

Practices, bundles, and constellations are replete with sayings and texts. These sayings and texts link up with other elements of bundles and constellations, connect bundles and constellations, and make a considerable difference to the evolution of the latter. They are thoroughly imbricated with the nonlinguistic doings that are just as widely distributed through bundles and constellations. This distribution of saying and texts give concrete sense to the idea that discourse pervades the plenum of practice. Discourses as language in use and as strings of words and sentences are everywhere: interconnected, interconnecting, and always making a difference.

The second issue mentioned above concerns the existence of large-scale discursive structures or formations. One form larger discursive formations could take are constellations of sayings. An example is the discourses Foucault theorized in his archaeological phase (another is Lyotard's [e.g., ____] conception of practices as

sayings). Before turning to genealogy, Foucault (e.g., 1976) theorized discourses as discursive practices—arrays of statement-making sayings (Dreyfus and Rabinow 1982, 44-8)—that are organized by multiple sets of rules that pertain to the objects, concepts, theories, and discursive infrastructures (e.g., presuppositions) that characterize or are bound up with these arrays. The discourses that Foucault was particularly interested in were those of the human sciences (e.g., linguistics, natural history, demography, medicine, psychology). Discourses, accordingly, are different ways of structuring areas of knowledge (cf. Fairclough 1992, 3).

Foucault's discourses illustrate what William James called the fallacy of misplaced concreteness. Discourses are an abstraction, in the sense of a selective extraction, from the plenum of practices. The statement-making sayings that compose discursive practices always happen amid doings and material set-ups (offices, libraries, laboratories) that help compose the bundles as part of which they occur. The upholdance by these sayings of the organizations of the practices involved, like their happening amid these material set-ups, are essential to them. Yet, Foucault treated these sayings, together with what is said in them, as composing a distinct entity, which can be analyzed and explained. He thereby brackets essential contexts of sayings. It is true, as the notion of intertextuality indicates (see below), that sayings are significatively connected. They are significatively connected, however, *as* activities transpiring in practices. It is not surprising that Foucault's analyses of discourses gave way to analyses of apparatuses (dispositifs; cf. 1980) in his subsequent genealogical phase. A discourse is composed of statement-making sayings alone, whereas an apparatus embraces discourses, nondiscursive behaviors, and architectures.

A different sort of large discursive formation is exemplified in Hajer's (1995) notion of a discourse coalition, which is a group of individuals and organizations who work under the aegis of a particular set of ways of talking and thinking. The environmental discourse coalition, for example, works with key concepts such as sustainability, clean energy, saving the earth, conservation, and concern for the future and uses these concepts in particular ways in speech and writing. The discourse involved can thus be understood as a set of concepts together with their spoken and written (and thought) use in certain constellations of practices and arrangements.

This notion of discourse is unproblematic. It treats discourses such as environmental discourse as patterns in the use of particular concepts in certain interconnected bundles of practices and arrangements, for example, those of environmental activism, academic research, media reporting, and politics. There is no attempt to isolate these concepts and uses from the acts and bundles concerned.

A second general sort of large discursive formation that might characterize the practice plenum comprises abstract discursivities. Such discursivities can take many possible forms. One is the systems of differences that Saussure (1966) thought determined the signifieds of la langue. Another is the textuality that Derrida (1976) claimed pervades being and human being-in-the-world. A third is the rule systems that some social theorists (e.g., Parsons) have attributed to sectors of human life, where rules are unformulated content-ful instructions or directions. I will set all these ideas aside.[i] I want instead to consider two concepts of abstract discursivity championed by discourse theorists.

The first is Kristeva's (1986) concept of intertextuality, which is foreshadowed by Bakhtin's notion of utterance chains. Intertextuality comprises the ways texts are content-fully interconnected through links and explicit as well as implicit cross-references among their concepts, themes, topics, statements, stances, claims, and orientations toward subject matters (see, e.g., Fairclough 1992, chapt. 3). Intertextuality is an abstract discursivity because it, as a whole, is never encountered in experience, though elements of it are sometimes encountered when people speak and write. As an significative net through which texts in different bundles connect, it links bundles and is an important dimension of the plenum of practices.

A second concept of abstract discursivity is Fairclough's orders of discourse. As discussed, orders of discourse are composed of images, types of language, and forms of nonverbal communication that are associated with particular social fields. (An earlier [1992, 124-30] version of the notion held that orders of discourse embrace genres, activity types, styles, and discourses.) Such orders constitute potentials that acts of speaking and writing etc. can draw on. They are also abstract structures in the way intertextuality is: these orders, as wholes, are never encountered in experience, though their elements are encountered when used in acts of communication. According to Chouliaraki and Fairclough, orders of discourse "order" and "regulate" communicative acts and interactions (principally, speaking and writing) in two ways: they structure, that is, enable and constrain these acts and interactions (1999, e.g., 63), and use of their elements is a means through which relations of power as forms of control are realized (1999, e.g., 144-5). I will set power and control aside because an adequate discussion of them is too ramified for the present context.

Chouliaraki and Fairclough claim that orders of discourse are associated with fields à la Bourdieu. As features of an alleged type of large phenomenon, these orders are a kind of large discursive formation. On my account, accordingly, they are a feature of constellations of practices and arrangements. To simplify things, I will henceforth focus on types of language alone.

Types of language encompass various elements, which for simplicity's sake I will summarize as words, ways of using words, and ways of constructing discourses qua strings of words and sentences. Examples of types of language are eye-witness accounts, storytelling, and literary narrative (1999, 56-7). Types of language, that is, combinations of words, ways of using them, and ways of constructing discourses, enable communication in providing both the terms and the techniques for putting together spoken and written texts. I doubt, however, that specific sets of language types, as opposed to language types at large, enable acts of speaking and writing in particular bundles and constellations, including any that constitute fields. In the first place, types of language are mobile and circulate among bundles and constellations, both through lines of communication and by virtue of people participating in different bundles. This especially holds of language types employing nontechnical words, but also of some types that utilize technical ones. Moreoever, the elements of types can circulate within and among bundles independently of types. Nontechnical words, for instance, are remarkably mobile, as are some technical ones (e.g., "inflation" and "neurotic"). What's more, both within and across bundles words, ways of using them, and ways of constructing discourses can (re)combine and form a multitude of types. And the distribution of, especially, natural language types and their elements is

contingent and often haphazard; sayings anytime can, and sometimes do, import types or elements thereof into bundles or constellations where they have not hitherto appeared. Consequently, it is not distinct sets of language types that enable speaking, writing, and communicative interaction in particular constellations. Rather, language types *in general* achieve this.[ii] In addition, bundles and constellations might very well exhibit "typical" language types (cf. Bakhtin's speech genres). Typicalities, however, enable nothing: they are simply patterns in language use laid down in past usage.

Now, nothing can be spoken or written that is not spoken or written in words, in a certain way, and as part of some discourse. When, consequently, a person speaks or writes, s/he must employ some type of language, either an extant one or a revised (or even new) one for whose creation the current spectrum of types was the starting point. Either way, she is constrained by this current spectrum. Again, however, the mobility of words (especially those of natural language) and of ways of using words or constructing discourses suggests that language types in general, and not distinct collections thereof, constrain speaking and writing in particular bundles and constellations. Likewise again, the repetition (typicality) of certain language types in particular bundles and constellations constrains nothing, in this case not just because typicalities are patterns, but also because some sayings in many, if not most, bundles and constellations fail to use typical words or to exemplify typical ways of using words or constructing discourses—there is too much going on in any bundle. This is even true in highly regulated environments such as missile control rooms and courts of law. In sum, specific sets of language types do not order particular constellations—e.g., fields, if they exist—by enabling and constraining acts of communication in them.

Another, more promising way of construing how collections of language types (images, and nonverbal forms of communication) order and regulate bundles is to ascribe them normative force. Normativity is a contested notion, but under one interpretation for types of language to carry normative force is for combinations of words, ways of using them, and ways of constructing discourses to be acceptable for or enjoined (prescribed, required, expected) of people (cf. Fairclough 2015, 68). Such combinations enjoy this status, moreover, by virtue of people knowing about them, unreflectively using or exemplifying them, and sanctioning conformist and nonconformist activity. This is how teleoaffective structures on my account possess normative force. When normativity is so understood, some bundles and constellations exhibit distinctive sets of normative language types. It is true that the mobility of language types as well as the mobility and recombinability of their elements, together with the fact that most of what people say is acceptable in the bundles in which they say it, indicate (1) that broad ranges of language types are acceptable in most bundles (this has only become truer in the modern world) and (2) that a large common range of types is acceptable in the bundles and constellations where a given dialect of some natural language predominates. At the same time, bundles and constellations vary in the language types acceptable or enjoined in them in so far as, for example, they utilize technical vocabulary or slang (as in professional or subcultural bundles), embrace official procedures (as in governmental or religious bundles), exhibit command structures (as in military bundles), or are associated with particular ethnic groups (cf. Gumperz' 1982 communication styles). These are all contexts in which peer pressure, control by rule or command, or the situations in which people act require the use of particular types. So,

while the bundles in which a given dialect of some natural language predominates more or less share a large set of normative discourse orders, some of these bundles possess additional orders of discourse alongside this large set. Only these latter bundles carry distinct semantic spaces (Taylor 1985a) that are tied, inter alia, to the languages used in them.

I described above Reckwitz's idea that practice-discourse complexes are organized by orders of knowledge, themselves structured by cultural codes. Codes are systems of differences and classifications (e.g., hetero/homosexual, high/low) that provide meaning-frames (*Sinnrahmen*) for what is thinkable, sayable, and practicable (2006, 44). These codes structure knowledge orders—know how, interpretive knowledge, motivations, and emotions—by providing the terms in which the contents of these orders are articulated (e.g., the x in knowing-how to x, the y in interpreting something as y). Although Reckwitz never affirms the following, I will construe these codes as systems of natural language concepts, supplemented by technical concepts where these exist. For, in so far as meaning or intelligibility imbue or pertain to what people do, say, and think, the knowledge on the basis of which people proceed, and the bundles in which people participate, they are articulated in natural and technical languages. These languages provide the (linguistic) concepts in which (1) actions and knowledge in so far as it bears on activity have content (i.e., are the actions and action-shaping knowledge they are) and (2) entities in the world are articulated as what they are in however people have to do with them.

Reckwitz defines practice-discourse complexes as formations whose components are informed by a common set of concepts. He thus builds into these

complexes inherent association with particular sets of concepts. It is an empirical question what patterns of concept use exist in the plenum of practice, what collections of concepts are found there, and what associations exist between particular sets of concepts, on the one hand, and particular bundles and constellations of practices and arrangements on the other. The implications of the great diversity and peregrinatory character of concepts for his complexes are multiple. To begin with, because remarkably broad ranges of natural language concepts are used or are acceptable in most bundles and constellations, the set of such concepts that informs any complex must be immense. Moreover, the ranges of concepts that inform the bundles in which a particular dialect of some natural language predominates largely coincide. As a result, these bundles form one very large cultural complex informed by a common code. The exception, again, are bundles and constellations in which technical concepts or slang are extensively used; these formations can form smaller complexes distinct from, though interwoven with, the massive cultural ones. Slang and technical concepts, however, do not fully saturate these smaller complexes since, as noted, much goes on in bundles that employs or is articulated in common concepts. Talk of codes, meanwhile, is problematic. "Code" implies systemicity, but natural language concepts are not systematic. Nor are there "central" such concepts that inform either events occurring in or the interrelatedness that composes bundles; natural language concepts are not well-ordered. It seems odd, finally, to call such concepts at large a "code."

Like sayings and discourses, natural language concepts and types of language (themes, too) are distributed through the practice plenum. Many of their technical cousins, moreover, travel among bundles and constellations. The distribution of

concepts and types of language provides linguistic conceptuality and articulation to the intelligibility of human activity and the world in which it proceeds; it also makes intertextuality possible. To repeat, however, meaning suffuses bundles and exhibits only regions of conceptual order (codes) and semantic regulation (orders of discourse). Grammar and syntax are different matters.

In sum, discursivity pervades the plenum of practices in two ways: (1) sayings and texts, and thus language and concepts, exist throughout and are constantly circulating through it, and (2) sayings and texts provide linguistic conceptual articulation to human life and through this are intertextually linked. Sayings, texts, and language also contribute greatly to the interconnectedness of bundles in the practice plenum, while distinctive sets of concepts and types of language normatively order certain bundles and constellations. Language is an immensely important and in some sense omnipresent part of social existence. Its structuring significance for social life partly tracks the bundle-and-constellation composition of the practice plenum but more generally lies in providing an articulatory and intertextual potential for social life at large.

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[i] Some discussion of the second idea can be found in Schatzki, 2002. This book also extensively engages Laclau and Mouffe’s (1985) notion of discourses as totalities of systematically and inter-relatedly meaningful actions, words, and things. Note that textuality à la Derrida must be distinguished from the unformulated understandings that Taylor (1985b) believes pervade large domains of practice: these understandings are not discursive in nature. An idea related to Taylor’s is discussed in the essay by Welch and Warde in this volume.

For analysis of rules as unformulated contents see Schatzki 1997.

[ii] Chouliaraki and Fairclough recognize the mutability and mobility of language types and their elements, but they do not see that these features undermine the idea that such types enable and constrain communication.

Placing power in practice theory

Matt Watson, September 2015

Draft chapter for *Advances in Practice Theory*, Hui, Shove and Schatzki eds

Practice theory must be able to account for power. This imperative has two sides, one intellectual and the other pragmatic. The intellectual side of the imperative comes from the ubiquity of power as a property of social relations. Practice theory accounts for the social with all social relations, and the phenomena that arise from and shape those relations, constituted and reproduced through practices; as Schatzki states "both social order and individuality… result from practices" (1996: 13). Therefore practice theory must be able to account for power. The pragmatic side of the imperative may be less compelling, as it relies on a conviction that social theory should in part be valued for its capacity to make a positive difference in the world. For practice theory to meaningfully inform future change (or indeed to fully account for past change), it surely must be able to account for power. Of course, there is no necessary agreement that social theory has such an obligation, even with the problem of determining what might constitute a positive difference set aside. However, in the absence of agreement, the first side of the imperative still stands.

Given such a fundamental imperative, can it be that practice theory has not been well worked in relation to power? Power is of course a fundamental and perennial concern of social theory. Indeed of the topical terms defining the [draft] chapter titles in this book 'power' seems the most worn, least suited to a book of *Advances*. I am writing it for this book for two reasons, the first being the difficulty of analytically grasping what we take for power in a way consistent with the ontological commitments of practices (there being all sorts of reasons why that is so). The second is that the bulk of work comprising contemporary work identifying with practice theory, particularly in empirical application, is inherently conservative in any practical implications. Generally, applications of practice theory that seek to be relevant result in arguments about the technical preoccupations of policy approaches to intervention. This is despite the fundamental intellectual radicalism of practice theory, which posits an understanding of the social and of human subjectivity which embody a fundamental critique of the implicit theoretical foundations of dominant ways of conceiving and doing governing.

My ambition, then, is to draw together different understandings of power as expressed through different workings of practice theory, and related intellectual traditions, in the hope of moving towards enabling a more *critical* practice theory and one capable of meaningful application. This is a hubristic ambition, but there are of course abundant foundations to build on.

For Nicolini, one of the five distinctive features of practice theory common across the full range of its expression by different scholars is that they "foreground the centrality of interest in all human matters and therefore put emphasis on the importance of power, conflict, and politics as constitutive elements of the social reality we experience" (2012: 6). Attention to the spatial and temporal patterning of practices reveals how they are productive and reproductive of inequalities and differences. Key thinkers who have shaped contemporary understandings of power are also included in articulations of the intellectual heritage of contemporary practice theory, including Bourdieu and Foucault (Reckwitz, 2002) and Marx (Nicolini, 2012).

Meanwhile current workings of practice theory have increasingly articulated concepts which promise to enable practice theory to move beyond the localism of a focus on performances of practices, to engage with the sorts of social phenomena that can be identified with the exercise of power. As Schatzki (2014: *p.no*) has it "…all social phenomena – large or small, fleeting or persistent, micro or macro – have the same basic ingredients and constitution." So, practices comprising large institutions, including those of ministerial offices, cabinet rooms and corporate board rooms have the same characteristics as the practices of domestic life are comprised of meanings, rules, competences, embodied knowledges, materials, spaces, and more, brought together through largely routinised and mundane patterns of action.

In the following, I engage with these existing ways of thinking power and consider the ways in which current formulations and applications of practice theory articulate with them, as a basis for exploring the complementarity of current expressions of practice theory with Foucauldian analytics of power and governing. Bringing these together with aspects of some complementary intellectual traditions provides the basis for a concluding discussion of how power can be meaningfully engaged with and through practice theory, and reflection on what that means.

The semantics of power

It is impossible here to fully plumb the complexities of different ways in which power has been thought and deployed in social theory. It is though useful to engage with this terrain to scope out the relatively obvious poles of meaning, to frame up the path to be followed through the relations between power and practice that follow.

A first fundamental distinction is between understanding power as an object, or as an effect. In common sense usage power is an object, generally as a capacity of a person, institution or other social actor. Within such a framing, it is how both power and the effects of its exercise are profoundly unevenly distributed motivates both social action and critical theoretical engagement. Understood as object, power still has different meanings. It can refer simply to the capacity to act with effect (essentially making power synonymous with agency, conventionally understood. More distinctively, power can refer to the capacity to direct or purposively influence the actions of others. In this meaning, power can be identified as a property of an individual – say a monarch or corporate CEO – or collective social actor like the state. It is hard to escape understanding of power as object or capacity, not least as the word 'power' implies its referent as an object. The distinctions it brings with it – between capacity to act with effect and capacity to shape the actions of others – also provide useful ways of framing the steps of the following discussion.

It will however be a surprise to few readers that this chapter is written from a position which repudiates understanding power as an object or property. At least since Foucault, it has been increasingly normal for people meddling with social theory to understand power instead as itself an effect. It is this way of thinking about power which is implicit – and occasionally made explicit – within practice theory.

To be consistent with the ontological commitments of practice theory, power must be understood as an effect of performances of practices. As the chapter argues, power only has reality so far as it is manifested in moments of human action and doing. This position has pleasing ontological consistency, but seems unlikely to enable practice theory to move from the political impotence which I claim above as impetus for tackling this chapter. If power only has meaningful existence in moments of human action and interaction, how do we account for the production and reproduction of the bewildering inequities in how capacities to act, and to benefit from goods and suffer from bads, are distributed between people? Working with resources from 'within' contemporary practice theory, on organisations (eg Orlikowski,

2002) and large social phenomena (Schatzki, 2015) but also from closely related traditions (Foucault, Pickering, Latour) the chapter works through how far practice theory can provide an effective basis for critical engagement with such questions.

Isn't practice theory all about power?

If power can be understood at the most basic level outlined above as acting with effect, then practice theory can be understood as essentially being all about power. Indeed, all of the relations comprising the social are constituted and reproduced through actions of humans (amidst the many nonhuman entities also involved in those actions). In different ways all sorts of human action have effect in this way, whether the repetitive shared timing of eating reproducing fundamental shared social rhythms (Southerton, 2009) or the consequences of the routinized actions of day-traders (Schatzki, 2010) have cumulatively in reshaping financial markets. In accounting for both social change and for the reproduction of social stability as the result of human action, practice theory is inherently about power if that is seen as capacity to act with effect.

Of course, emphasising the power inherent in the actions of individual humans is only part of the story. In the broad margins of the rapid diffusion of practice theory into social research, it is in fact better understood for its emphasis on the shaping of human action by relations and phenomena external to the person performing any action; to the extent that it is sometimes cast as denying human agency or problematizing the possibility of social change. While a profound misrepresentation on both points, this does highlight the extent to which practice theory is centrally about the shaping as well as possibility of action. Arguably, this is much more the concern of practice theory than is the character of acting with effect, for all that the latter is as necessary to understanding the recursive relations between action (performance) and practice (as entity).

With a focus on the shaping of action, we move closer to the second basic understanding of power as object, as the capacity to direct or influence the actions of others. The engagement here though remains rather one sided, focusing on how action is shaped, rather than how power is wielded to shape it. Indeed, a practice theory analysis seeks to understand the broad and heterogeneous range of phenomena that share in the shaping of action, mostly without any possibility of empirically demonstrating who or what individual entity is a dominant source of that influence. Leaving aside the question of how to identify who or what wields influence, practice theory is replete with resources for understanding the shaping of (the possibilities for) human action.

Across the range of scholars identified as key protagonists in the intellectual history of practice theory, an emphasis on the role of rules in the shaping of human action is perhaps the greatest commonality, reflecting shared roots in Wittgenstein's work. Just what is encompassed by the concept of the rule varies across theorists. For example, for Schatzki rules are "explicit formulations, principles, precepts and instructions that enjoin, direct, or remonstrate people to perform specific actions" (Schatzki, 2010: 79). Meanwhile for Giddens, what Schatzki refers to here as rules are formulated rules, "codified interpretations of rules rather than rules themselves" (1986: 21). For Giddens, rules encompass a broader range of phenomena, being "techniques or generalizable procedures applied in the enactment/reproduction of social practices" (1986: 21) often only tacitly grasped, as knowing how to "go on" (1986: 22-3). Rules – or more broadly the normativity of practices, however understood – are both the grounds for and limits upon the possibility of meaningful and practicable action by individuals.

Amongst the ways in which the shaping of individual action is conceptualised, rules are easiest to grasp. Particularly in relation to more formalised or codified rules, they can look straightforwardly like means of

exercising power in a conventional sense – after all, laws are codified rules. Indeed, for Schatzki rules "are formulations interjected into social life for the purpose of orienting and determining the course of activity, typically by those with the authority to enforce them" (ref). However, these apparent means of power are amidst a great range of ways in which action is constituted and so influenced. The relations of power are much less clear in relation to aspects of practice understood through different concepts. Schatzki's articulation of rules is as one of four mechanisms through which the actions composing practices hang together. Practical consciousness, expressing the tacit understanding of how to go about an activity in the right way, similarly conveys the shaping of individual activity through collective, rarely with a clear sense of who or what is shaping action or by what means. Similarly, the inherent normativity in the teleo-affective structures of a practice are a product of the collective flow of action, internal to practices themselves rather than somehow wielded or channelled by actors external to the practice in question.

This character of the shaping of individual action finds similar expression as profoundly diffused in accounts from other theorists. In Reckwitz' (2002) 'ideal type' practice theory, it is the conventionalized assembly of the diverse elements and their interconnections comprising a practices which provides the pattern for its performances, in the action of individual practitioners. The routes through which power might be considered exercised are still more obscure in Shove et al's model of practices as composed by the relations between meanings, competences and materials, even if rules and other means of normativity run through accounts of how practitioners integrate these elements in moments of performance (Shove, Pantzar, & Watson, 2012). However, this stripped down model of what it takes to be able to perform practices can enable a sharp understanding of how social inequities are enacted and expressed through uneven distributions of what it takes to perform practices – whether in materials, meanings or competencies (Shove et al., 2012: 73). The model also provided the basis for outlining a number of ways of conceptualising of targets for governing intervention (152-163). But it has little to say about the means through which power operates.

Other, somewhat earlier, theorists' work at least appears more amenable to analysis in terms of power relations. Giddens' account of practices is within his setting out of a theory of structuration (1986), with practices the medium through which recursive relations between moments of human action and social structures constitute one another. Giddens invokes vocabulary of power that is absent in more current articulations of practice theory, with identification of structural dimensions of social systems, in signification, domination and legitimation; and in the role of allocative resources (capabilities) and authoritative resources ("types of transformative capacity generating command over persons or actors" Giddens, 1986: 33). This apparent affinity of Giddens' account with concern for apparent structures of the social, while promising a means of articulating practice theory with the operations of power, in its resonances with a structuralist approach, is also what has made Giddens unfashionable. This popularity is not helped by the difficulty of methodologically operationalising structuration theory (Nicolini, 2012: 51).

Bourdieu provides the most compelling account of the systematic reproduction of unequal distributions in relation to practice, through the concepts of habitus, capital and field (Bourdieu, 1984). The meanings of these concepts, their relations to each other, and of each and all of them to practice, are somewhat unfixed over Bourdieu's work. Moreover, the concepts – particularly that of habitus – cover aspects of what other theorists would consider part of practices, representing the socialised norms and tendencies of conduct guiding actions and dispositions, the ways in which social relations become embodied to persons in capacities, dispositions and ways of thinking. Habitus enables appreciation of social difference which a focus on practices as the principal unit of analysis obscures, without resorting to individualism. Similarly a focus on capital - allows sensitivity to how social actors accumulate means to act, and the means to accumulate. The concept of field provides a way of distinguishing the social arenas in which

action and interaction takes place, enabling a clearer grasp of the relations through which power is enacted and experienced. While Bourdieu might be considered to consequently hollow out the concept of practice of many of the relations understood by others as comprising it, in so doing he draws out concepts which make understanding of the production and reproduction of unequal distributions, including in those things which constitute the capacity to act, and the capacity to accumulate those things. These differences, and the processes through which they come about and are maintained, are the grounds of systematic social differences, as become reified into concepts of class, for example.

So, it is clear that practice theory can indeed be understood as being all about power. Fundamentally practice theories provide a distinctive understanding of what provides the capacities to act with effect, through its account of the relational, and profoundly social, grounds for action when understood as the performance of practice. Through exactly the same understanding, it enables grasp of the different phenomena and relations which shape and influence patterns of action, which logically include any means of executing power in the shaping or directing of the action of 'others'. As a result, practice theory must be in a position to cast distinctive light on, say, how inequality results from uneven distributions of the capacities to act – as explored by Walker (2013). However, there is little through which to understand how power is executed in the directing of another's action, of in what lies authority over others: the core of what it takes to understand and tackle the effects of power in the world.

This is unsurprising. The above discussion treads a spare line through some articulations of practice theory guided by an heuristic understanding of power as object. This understanding consistently cross-cuts with the fundamental ontological commitments of practice theory. An account of action which shows it to be both enabled and shaped by a broad and heterogeneous range of phenomena and relations, the ordering of which into recognisable patterns of action results from ongoing distributed social achievements, has no easy space for instruments of power which direct action. In its fundamental expression in action, power is similarly rendered a relational, socially constituted effect. Perhaps that is where the discussion should stop, in the interests of ontological coherence. But apparent phenomena in the social – powerful institutions, patterns of domination, the reproduction of social elites and of hegemonic ideologies – demand some means of understanding, if practice theory is indeed an account of the social. Power may be effected through all manner of social relations, but how come some relations look more like power than others? If practice theory is not consistent with an understanding of power as an object or property, how do we understand means through which certain social actors gain dominance? Inevitably, it attempting to grapple with power while understanding it as an effect, the next step is to turn to Foucault.

To this point has been a draft write-through from the start. Unfortunately this is as far as that write-through got before the (extended..) circulation deadline. From here are indicative notes which I hope are enough for critical discussion when we gather

Turning to Foucault to help theorise power is not unusual, but it is somewhat ironic. He disavowed both the analysis of the phenomenon of power, or elaboration of the foundations of such analysis, as the goal of his work (Foucault, 1982: 777). Fully comprehended as effect rather than object, power escapes analysis.

What can be analysed are power relations, agonistic.

Some people and institutions are systematically advantaged and some disadvantaged by their position amidst these power relations and can use those relations to pursue their own ends (which presumably can include shifting their location amidst power relations) but ultimately no one person or entity is has control of those relations – to understand them we need to …trace "down to their actual material functioning" (Dreyfus & Rabinow, 1982: 186)

Given the ubiquity of power to social relations for Foucault, the sorts of problems which motivated this chapter appear as unreachable as through the approaches outlined above [somewhere need to locate Foucault in relation to practice theory 'tradition']. However, Foucault's archaeology of the making of subjects entailed focus on *government*. "Basically power is… a question of government" (Foucault, 1982: 789). In Foucault's use, government is not restricted to formal institutions of state, but used in its more general meaning in shaping the conduct of others, to "structure the possible field of action of others" (Foucault, 1982: 790). In identifying the means through which this structuring takes place, we find a way of drawing towards the problematics motivating this chapter.

Tracing of power relations into specifics of practice, Discipline and Punish, panopticon?

But arguably questions of how institutions such as of state or market structure fields of action across space and time far beyond the immediate reach of practitioners – the situations that look most like exercise of power conventionally understood – are most easily tackled through the framing of governmentality. Foucault's own working through of governmentality, is as an analytic of specific historical processes. In his 1978 lectures, the concept is developed in accounting for the shift in governing he identifies in 1th century European, from defining the purpose of rule to be retention of territory, to the emergence of the governing of population. Governmentality is initially an account of this specific process, of "the ensemble formed by the institutions, procedures, analyses and reflections, the calculations and tactics that allow the exercise of this very specific albeit complex form of power, which has as its target population, as its principal form of knowledge political economy, and its essential technical means apparatuses of security" that characterises the rise and spread of government as the purpose of the state – a process of governmentalisation (Foucault, 1991). However, numerous scholars have run with the underlying ideas Foucault worked, under a burgeoning field of governmentality studies (Burchell, Gordon, & Miller, 1991; Dean, 2009).

Sketch out here key terms of governmentality, rationalities, technologies/techniques/apparatuses, regimes of practice

This vein of work has done so much to unpick the means – the rationalities, techniques and apparatuses – through which conduct is conducted (Gordon, 1991). But how is the conduct of conduct conducted? That is, what is *distinctive* (rather than the same) about the practices of governing, or of corporate influence? Through what practices, with what characteristics, do some individuals, institutions, locales, achieve influence over the performance of other practices?

How is the conduct of conduct conducted?

As Foucault makes clear in his introduction of the theme of governing, it is not the preserve of formal institutions. All scales of social phenomena are governed, from the self, to the international. The models of governing he identifies as arising as state concern from the 16th century are founded, he argues, on ideas of economy and governing for the collective good modelled on the proper management of households. In seeking to push practice theory to engage with problematics of power, though, it makes sense to push to understand the power relations clearly enacted over space and time by institutions that are in a position of dominance.

This is a stretch for practice theory thanks to the difficulty it has dealing with social phenomena which it makes sense to understand as large scale. As a flat ontology…

But as Schatzki articulates "All social phenomena… are slices or sets of features of the plenum of practices and arrangements, differing simply in the continuity, density and spatial-temporal spread and form of the practices, arrangements and relations that compose them. It follows that all social phenomena – large or small, fleeting or persistent, micro or macro – have the same basic ingredients and constitution" (Schatzki, 2015: p)

The observation that phenomena have the same basic ingredients and constitution, in whatever realm of the social or whatever apparent scale of social phenomena means that the practices of ministerial offices, cabinet rooms and corporate board rooms mostly have the same characteristics as the practices of domestic life or leisure pursuits. They too are comprised of meanings, rules, competences, embodied knowledges, materials, spaces, etc, brought together through largely routinised and mundane patterns of action. Increasingly, the lines of practice theory discussed above are being brought to bear upon institutional situations and approaches with more or less relevance with those lines of theory are well established in institutional settings – institutional ethnography (Smith), strategy as practice (Jarzabkowski), communities of practice approaches

…discuss… Lave, Suchman, Orlikowski – different angles in illuminating practices that accomplish the collective, distributed reproduction of institutions

Foucault acknowledges the value of institutions as an empirical focus for an analytics of power relations, recognising that they "constitute a privileged point of observation" (Foucault, 1982: 791). However he goes on to identify certain problems with such a focus, problems which typically can be associated with the practice theory informed studies of institutions above. Specifically, the risk that analysis of the practices comprising institutions will focus upon functions of the institution which are essentially reproductive of that institution, often with limited direct relation to the ways in which institutions act external to themselves. The ways in which institutions reproduce themselves are pertinent to understanding how institutions operate, but are only the grounds for the conduct of conduct. Stressing the sameness of the practices in these situations, while demonstrably useful for starting to account for the conservatism of institutions, so far fails to account for how power is done in practices. Foucault's solution to this problem is to approach institutions from the standpoint of power relations (rather than the other way round) (1982:791). But this in turn risks a focus only on the means of power – the technologies and apparatuses of governing, missing attention to the practices which articulate with, constitute and operate those technologies and apparatuses; the practices which enable the conduct of conduct, and the accumulation of the necessary resources to do so.

Governing over space, as for the institutions identified with the nation state, or a multinational corporation, is only possible through the marshalling, coordination and harnessing of countless other

practices, whether providing the financial resources (eg through the multitude of practices that generate and gather taxes or profits), the information (eg through census) or the influence (eg through the armed forces and police). The mundane, habitual practices that comprise the everyday life of the offices of state are the practices which hold together the complexes of practice which gather and accumulate what make governing possible. This includes much of the generic reproductive work of institutions that Foucault cautions against being distracted by. It is indeed the more difficult job of analysis to identify and understand those practices which directly articulate with the means through which other practices elsewhere are marshalled, coordinated and harnessed. The practices at stake here both enable and enact the uneven landscape of power as influence that characterises centralised states and large corporations.

Embodied action at the core of all performances of practices can only be spatially and temporally immediate. The extension and amplification of action can only happen through intermediation. Such intermediation in these processes can rarely if ever accomplished without dependency on other practices as well as technologies, institutions etc It is the ability of some practices to orchestrate others, only to themselves be orchestrated by others again, that offers the means for accounting for the appearance of hierarchy and scale while retaining a flat ontology.

Governing technologies/apparatuses and their articulation (co-dependency) with practices of governing, as well as how they operate to shape the conditions of possibility for action of others. Technologies of performance – targets, audits, indicators; or agency (Dean 2009).

Turning also to 'classic' Latour – power as an effect of the capacity of an actor to enrol and mobilise other actors in pursuit of goals.

Centres of calculation/power; inscriptions, mobiles, calculation. Rose and Miller 2010: Nicolini 2012, and Schatzki 2015, indicating ANT/sociology of translation/ theories of arrangement as means of tackling the problems of action over space and time.

Arguably, sociology of translation brings us closer to the practices that act through governing technologies, to act (shape conduct) at a distance than do governmentality literature – those of aggregation, construction of knowledge with properties of mobiles, comparable, abstracted.

Means of aligning – practices that align flows resources within institutions (which will include those that might appear largely 'reproductive' of the institutions – email, filing, water cooler chats) as well as those that act externally – ministerial briefing, lobbying, law making, advertising, product development and distribution, spatial planning…..

Institutions provide the ordering and stability necessary for the complex orchestration of practice that provides both the means and purpose of governing. Part of that institutionalisation is the alignment and co-dependence of practices within governing.

Solidification of the means through which capacities to accomplish practices of governing are delegated to technologies and procedures – buildings, information infrastructures, divisions of labour and hierarchical institutional relationships between people – are both the means of effectively aggregating the means to power, but also a form of ossification of the institution and so the obduracy

"Powers are stabilised in lasting networks only to the extent that the mechanisms of enrolment are materialised in various more or less persistent forms - machines, architecture, inscriptions, school curricula, books, obligations, techniques for documenting and calculating and so forth." (Rose & Miller, 2010 : 183-4)

These features, then, might underlie the obduracy of the practices of governing, and the way in which those practices share elements with other practices of governing (through parallel materials, competences and meanings framed within institutions and professions).

So, the conduct of the conduct of conduct happens through practices with distinctive characteristics. Through engaging with concepts appropriated from governmentality, and from the sociology of translation, it is apparent that those distinctive characteristics are those which enable practitioners (usually in concert with others in ways orchestrated by the institution(s) to which they belong) to aggregate and align the resources necessary to assemble, maintain and exert some degree of control over technologies of governing (etc). Practices of inscription, aggregations and calculation, rendering populations as knowledge amenable to manipulation, oversight; practices of accumulation – of legitimacy through alignment of other actors (institutions), discourses, problematisation;

[All of which are already well theorised, if at a remove from practice. Or, with connection to practice, within specific institutional settings with specificities of power relations, eg ethnographies of laboratories and analytics of scientific knowledge, Latour; Pickering]

Fleshing out those distinctive characteristics addresses the missing link in understanding the processes of governing as constituted, reproduced and enacted through practice all of the way through. Between well-developed understandings of how the grounds for possibility of actions in general are shaped an understanding of power relations operating across time and space which is ontologically consistent with practice theory. Which is nice, but does it that open up any fresh understandings of those power relations enabling of any different sort of critical engagement?

Domination, hegemony, resistance

Accounts of practices cannot help but look impotent in the face of questions that arise in terms of domination of some by others, the perpetuation of patterns of systematic inequality and the hegemony of ideologies. The presumptions of practice theory though mean that these features of the social too must be accountable in ways consistent with, if not dependent upon, the theory's ontological commitments. Whether or not it turns out that practice theory adds anything to a useful analytics of them, though, remains to be seen. It is easy to see that patterns of inequality are perpetuated because relative advantage and disadvantage between people do not reflect a different state but different locations in the flows of the resources and relations that enable the performance of different practices. More specifically, being in a location which gives a relative advantage in terms of access to those resources and relations does not only mean the individual there can do more things: specifically it enable performance of practices which maintain and extend those which bring relative advantage. This is of course a re-telling of accounts of relative capability across all sorts of approaches. The bewildering rate of increasing inequality in many Western countries indicates how different political and economic regimes affect the ease with which individuals can use their situation of relative advantage to increase their relative advantage. Does bringing practices into the story do anything more than, once again, draw attention to the diversity of resources and relations at stake in these processes?

As discussed, institutions represent the ordering or practices, and of the flows of specific resources and relations, in order to pursue institutional purposes. Their maintenance, reproduction and growth depend upon the relations and mechanisms which enable the pursuit of relative advantage through the orchestration of those practices. Whether that is relative advantage between commercial institutions defined in relation to the diverse economies going under the label of 'market', or between civil society organisations in the still less clear economies of morality, legitimacy, influence and funding that sustain them, closely related practices of institutional reproduction and action are at stake.

Institutional purposes are necessarily emergent. Company executives may sit in a room now and again until they have managed to articulate a vision statement, but the impossibilities of articulating the emergent, collective purposes of an institution condemn such attempts at clear representation to anodyne failure. Purposes are emergent from the flow of practices through which they are pursued, necessarily in relation to the far broader nexuses of practices comprising the world in which those purposes are defined and followed. The emergence, reproduction and reshaping of purposes results from dense networks of relationships, including not only the performances of multiple practices and the orchestration of flows that result from them, but also of the sedimented relations in procedures, materialities and technologies which enable, constitute and maintain those practices, at the same time as those purposes shape how the practices producing and serving them. Little wonder that a new vision statement generally makes no or little difference.

Processes beyond specific institutions - Pickering – collective direction of scientific endeavour temporally emergent effect of the 'mangle' of practices (Pickering 2001)

Logically, hegemonic societal ideologies, could be so understood – as emergent from collective push of the flow of practices that they in turn shape. Such understanding can accommodate the unequal capacity of some social actors to constitute that ideology, more often through pursuit and maintenance of the means to relative advantage which that ideology enables rather than deliberate actions for an abstracted ideal of societal wellbeing. It also leaves conceptual space for the innumerable practices which can be read as resistant to those ideologies. Foucault's understanding of resistance as ubiquitous [and probably need to recognise his resistance to the idea of ideology]; De Certeau, drawing out the practices, tactics, through which resistances are enacted.

What truth can practice theory speak to power? ....when power is dissolved into practices...(which produce truth – but that's another story)

Understanding power relations in practice requires attention to the traffic that flows between performances of practices, the dynamics within and between those flows that amount to the push of strategy and purpose that are the strategies and purposes of no one individual or organisation but of the collective flow of practices. Understanding the role of governmental technologies in shaping, generating, channelling those flows – of meaning, money, knowledge..

Practice theorists as much trapped within the conditions of possibility established by the practices and technologies of governing as anyone else. Concepts of human subjectivity which practice theory knocks against are fundamental constituent elements of the complex of interdependent practices, institutions, technologies and regimes which constitute the governing of society, specifically in relation to a) the means through which practices of governing construct the knowledge necessary to rule and b) the logic of the technologies of governing.

What grounds for criticality? Can critique models of human subjectivity and of human action implicated in the practices, institutions and technologies of governing (state and market); but are there any grounds within practice theory for suggesting that anything 'better' would result from so doing?

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Materials and people at the intersection of practices: variation and influence in the field of practices

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Draft for the *Practice Theory* workshop, October 2015

For contemporary theories of practice, as developed by authors such as Giddens, Bourdieu, Schatzki, Shove, and Reckwitz "the social is a field of embodied, materially interwoven practices" (Schatzki, 2001, p. 3). This has led to many suggestions that practices are the fundamental units within this theoretical approach. Reckwitz, for instance, states that practice theories "conceptualize the 'smallest unit' of social theory" as practices (2002, p. 245). Nicolini extends this even further, suggesting that practices, as "the basic units of analysis for understanding organizational phenomena," must be appreciated before questions of agency can be considered (2012, p. 7). While such statements are strategically important for distinguishing theories of practice from theories which foreground individuals and prioritize their rational choices, this chapter argues that they have also become an obstacle to theoretical development and inventive methodologies. Though practices may be important units of analysis or study, they need not be. That is, privileging practices is more important as an ontological underpinning of this tradition of work than as a methodological one.

This paper therefore argues that further development of practice theories could beneficially engage with not practices *per se*, but the myriad intersections between them. In doing so, it follows from both Schatzki's observation of the interwoven nature of the social field above, and from Giddens' statement that: "the basic domain of study of the social sciences… is neither the experience of the individual actor, nor the existence of any form of societal totality, but social practices ordered across space and time" (1984, p. 2). If social practices are both multiple and variously ordered in space and time, then methodologically a focus upon singular practices is not sufficient. Looking at dimensions of intersection between practices is presented as an area of investigation with the potential to further enrich understandings of social dynamics.

In particular, asking questions about the intersections of practices, and following these up with empirical investigations, has the potential to contribute to understandings of variation and influence in a world of practices. Though the multiplicity of practices has been widely acknowledged, existing work has often provided limited characterization of how they vary. Perhaps best addressed has been the variation between different performances of one practice – as in the recognition that the same set of activities can never be enacted in exactly the same way, making even 'routine' practices the site of ongoing reproducing and change. Variations that emerge through the circulation of practice-entities to new countries have also been addressed, as in discussions of Nordic walking, baseball, or yoga (Hui, 2013b; Shove and Pantzar, 2005; Wang and Shove, 2008). Yet much remains to be explored about how variation relates to not only difference or change within one practice, but to comparisons between multiple practices. Moreover, there is a need

to engage with how variation relates to inequalities in power and influence within the social field of practices. Considering the intersections of practices as nuanced, evolving, and potentially unequal provides one starting point for beginning such explorations. It facilitates an exploration of how influence might be enacted even in a 'flat' world of practices where power dynamics and inequalities cannot be presumed to endure except by virtue of repeated performances of a myriad of interlinked practices.

The chapter is divided into three main sections. The first of these further develops the argument that investigating intersections provides a counterbalance to the emphasis upon discrete practices in some recent empirical studies and lines of theoretical development. The following sections then illustrate what might be gained through further consideration of intersections by taking up two extended examples. The first considers materials as at the intersection of practices, looking at the case of passports and their differential role in administrative and border practices. The second considers how groups of people are situated at the intersection of practices, looking at funerals and the tensions that can exist when families who share few other practices take part in these rituals.

The importance of intersections

The relative lack of attention to the intersections between practices is in my assessment as much a methodological problem as a theoretical one. After all, despite their diversity, no contemporary theories of practice attempt to argue for the inherent isolation or separation of practices. They rather imagine a world of complex practices with varying relationships to each other. The challenge arises when the concepts that have grown out of this understanding evolve into trajectories of theoretical development and related methodological strategies. As Reckwitz reminds readers:

> social theories are vocabularies… [that] never reach the bedrock of a real social world, but offer contingent systems of interpretation which enable us to make certain empirical statements (and exclude other forms of empirical statements). The pertinent questions, then, are: Where does a certain vocabulary lead us? What are its effects? (Reckwitz, 2002, p. 257)

While Reckwitz pursued this line of thinking to consider differences between practice theory and other cultural theories, it similarly applies to vocabularies within the broad family of theories of practice. What he is pointing out is that theoretical vocabularies have methodological (and ontological, epistemological) consequences. By making some empirical investigations and statements easier and others more difficult, they encourage particular lines of development – both in terms of the accumulation of empirical cases and in terms of the refinement and expansion of theoretical vocabularies. Therefore it is important to consider why, despite acknowledgments of the intersections of practices, a significant amount of recent work has studied and characterized isolated practices.

This trajectory of development can be seen to grow, in part, from several very accessible and repeatedly cited definitions of what practices are. As Reckwitz notes,

practice (*praxis*) can be understood to generally refer to human action (2002, p. 249). However, one can also specify practices – *praktik* – where each is:

> a routinized type of behaviour which consists of several elements, interconnected to one other [sic]: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge. (Reckwitz, 2002, p. 249)

A practice thus becomes a unit "whose existence necessarily depends on the existence and specific interconnectedness of these elements, and which cannot be reduced to any one of these single elements" (Reckwitz, 2002, p. 250). This definition of a practice was developed after reviewing other theories of practice, some of which similarly define what a practice is. Schatzki, for instance, suggests "a practice is a 'bundle' of activities, that is to say, an organized nexus of actions" (2002, p. 71). Activities such as doings and sayings become organized through a variety of different links: "(1) practical understandings, (2) rules, (3) a teleoaffective structure, and (4) general understandings" (Schatzki, 2002, p. 77). While materialities or objects are not mentioned in this set of links, they also play a significant role in practices for Schatzki, who notes that actions can require them, be oriented towards them, refer to them, or be affected by them (2002, pp. 106-107). Following from these authors, Shove and her co-authors develop a definition of practices following more closely on Reckwitz's, which groups the elements within a practice into three types – "materials, meanings and forms of competence" (Shove and Pantzar, 2005, p. 45). The popularity of these definitions is attested to not only by their repeated citation, but also by subsequent attempts to extend or re-name them (Gram-Hanssen, 2011; Maller and Strengers, 2013; Warde, 2005). Yet the lines of enquiry they have opened up are, as all such lines, limited.

These concepts that help defining practices accomplish a number of things. They provide a point of entry for thinking about dynamics within practices, and the components necessary for the reproduction of any practice. This has contributed to discussions of the processes whereby practices might cease to exist though dormant elements endure (Shove and Pantzar, 2006), how a lack of access to particular elements can necessitate changes in practice (Maller and Strengers, 2013) and the importance of having elements for performing ideal practices (Shove et al., 2007). The vocabularies for defining practices have also been useful methodologically – allowing researchers to frame and justify studies that look at one or more practices with unique elements or linked activities. This has been particularly apparent in a range of work applying theories of practice to environmental issues, wherein everyday practices with a connection to sustainability, such as food shopping or cycling, are selected as a focus and then analyzed using this theoretical vocabulary (Aldred and Jungnickel, 2013; Hargreaves, 2011). In such cases, definitions of practices are used to analyze how particular practices are performed and identify any potential for their variation or change. In work such as this, Reckwitz's suggestion that practice theories "conceptualize the 'smallest unit' of social theory … [as] practices", rather than "minds, discourses [or] interactions" (2002, p. 245) is taken as not just a theoretical statement but a methodological one. That is, practices aren't just the "site of the social" (Schatzki, 2002) – they are also units that can be

sampled and investigated in order to generate new empirical data (and through analysis, potentially new concepts).

Though studying seemingly discrete practices has become a popular methodological strategy amongst those influenced by Reckwitz, Schatzki and Shove, even a cursory examination of wider theories of practice highlights that this is not the only strategy. Foucault, for instance, reflected upon how in his work, "In order to get a better understanding of what is punished and why, I wanted to ask the question *how* does one punish?" (Rabinow and Rose, 2003, p. 247). Focusing on the prison as an object allowed for consideration of this question and "regimes of practices" within the prison became the target of analysis – "practices being understood here as places where what is said and what is done, rules imposed and reasons given, the planned and the taken-for-granted meet and interconnect" (Rabinow and Rose, 2003, p. 248). This somewhat vague definition of practices situates them not only as places of interconnections, but also as inherently part of a wider regime observable in relation to a particular object of study – the prison. Asking questions which do not presuppose particular practices allows Foucault to examine how a range of intersecting practices have contributed to the normalization of particular systems of punishment. The isolating of particular practices is not as important as the identifying of their collective accomplishments. This focus upon questions that do not concern the naming or isolation of specific practices is also common within the tradition of actor network theory (ANT). Latour, in his well-known introduction to ANT, starts out by:

> redefining sociology not as the 'science of the social', but as the *tracing of associations*. In this meaning of the adjective, social does not designate a thing among other things, like a black sheep among other white sheep, but a *type of connection* between things that are not themselves social (Latour, 2005, p. 5)

Methodologically, ANT therefore regularly focuses not on practices *per se*, but on how connections and networks are made through a range of activities, and the consequences of their endurance or change. Again, isolating particular practices is not as important as looking at the networks and connections established through their performance.

In highlighting these different approaches to studying a world of practices, I do not mean to suggest that an emphasis upon seemingly discrete practices is a necessary consequence of Reckwitz, Schatzki and Shove's theoretical vocabularies. These have, after all, already been developed to highlight aspects of interconnection. Yet this theoretical and empirical attention has been limited. The potential of practices to share components has been explored through discussions of shared elements (Shove et al., 2012), of dispersed practices that do not have their own ends or goals (Schatzki, 1996), and of taste regimes that orchestrate aesthetic aspects of practice (Arsel and Bean, 2013). Yet how such sharing might not be on equal terms, or how practices hold varying degrees of influence through such relationships has not been explored. Relatedly, while a range of concepts have been introduced to name groups of practices with varying degrees of interconnection – including bundles, complexes, or nets (Schatzki, 2002, pp. 154-155; Shove et al., 2012, ch 5) – these have remained

inadequately explored, and potential lines of influence within them remain largely unarticulated.

Though some might suggest this is due to the inability of a 'flat' ontology to address such issues, as Latour points out flatness is not something to be maintained, but a place from which to start inquiries of "the very production of place, size, and scale" (2005, p. 171). Insisting upon flatness "is the only way to follow how dimensions are generated and maintained" (Latour, 2005, p. 172). Yet subsequent investigation of dimensions and power must follow, even if this does not always follow easily from an over-emphasis on practices as units to be sampled and analyzed. While defining a practice does not exclude such investigations, the existence of general definitions of practice can imply a certain self-sufficiency and independence that does not bear out in the social world. That is, some practices would not exist but for the existence of others – yet these influences are not routinely articulated within the vocabularies of practice and their elements.

Another way of highlighting this can be seen from considering the temporality of practices. As Bourdieu suggests, "because it is entirely immersed in the current of time, practice is inseparable from temporality, not only because it is played out in time, but also because it plays strategically with time and especially with tempo" (1990, p. 81). Researchers have therefore examined the temporality of practices by considering how processes of familial coordination (Southerton, 2003) and historical transformations (Cheng et al., 2007; Hand and Shove, 2007) relate to temporalities of everyday life. Yet what about the temporalities of the components of a practice? The elements or activities making up practices do not exist out of time – they too have histories and strategic relations to temporality. A skill cannot be demonstrated before it has been learned, a material used before it has been created. Similarly, a rule cannot link activities until it has been established. Looking at these components of practices temporally thus raises questions that potentially move away from a singular, bounded practice, to other parts of the social world where transferrable skills might be learned, materials produced, and rules formalized. Methodologies starting from the definition of practices are therefore useful for considering the temporalities of particular practices (as well as related spatialities and mobilities (Hui, 2013a; Schatzki, 2002, 2010; Shove and Pantzar, 2005)), but make more difficult the simultaneous consideration of cross-cutting temporalities related for instance to the components of practices.

The remainder of this chapter therefore pursues a different trajectory. Starting from the ontological position that "the social is a field of embodied, materially interwoven practices" (Schatzki, 2001, p. 3), it pursues a methodology that assumes this complex field can be difficult to disentangle and make sense of. While the practices with which people are familiar may be easily recognizable and seem to have distinguishable borders, visits to different countries can quickly highlight how inscrutable and indistinguishable unfamiliar activities and performances are. Abandoning the assumption that we can identify specific practices of interest at the outset encourages a different set of questions. Rather than asking, for instance, what sets practices apart and makes them unique sets of integrated elements, we

can ask what ties practices together. What kinds of links or intersections exist between the many practices in the social field? How is influence enacted through these links? How do practices vary according to particular dynamics of influence? In order to consider these questions further, and striving to keep in view the interwoven nature of practices, the rest of the chapter addresses two types of intersections between practices: shared materials and overlapping communities of practitioners, revealing through the discussion how these intersections relate to variations and influence within the field of practices.

Shared components at the intersection of practices: the case of passports

A perhaps obvious point to start from when considering the links or intersections between many practices is any shared components. As noted above, authors have already highlighted how the elements of practices can be shared. Shove et al. provide the example of understandings of masculinity, which are a point of connection between practices of driving and repairing cars (2012, p. 36). This highlights, they suggest, a "picture in which diverse elements circulate within and between many different practices, constituting a form of connective tissue that holds complex social arrangements in place, and potentially pulls them apart" (Shove et al., 2012, p. 36). Elements of practices can thus become "a point of *connection* between them" – albeit not fixed and static points but ones more akin to "zones of overlap and intersection" (Shove et al., 2012, p. 113). While not using the concept of 'elements', Schatzki similarly highlights the ability of practices to "overlap": "A particular doing, for instance, might belong to two or more practices by virtue of expressing components of these different practices' organizations" (2002, p. 87). In addition, he notes that components such as rules can apply to multiple practices. As a result of such overlaps, "practices crisscross and interweave, thereby forming densely interwoven mats" (Schatzki, 2002, p. 87). Since practices are also seen by Schatzki to be "intrinsically connected to and interwoven with objects"(2002, p. 106), it also follows that objects might similarly be points of overlap and intersection between multiple practices.

What happens if such overlapping components are considered as not mere points of connection but as potential junctions through which priority might be established? That is, what if we think about the metaphor of intersections differently? While the intersection of lines within mathematical planes may be a neutral relation marking only their connection, the intersections we encounter on streets, railways or waterways entail a more complex set of rules, meanings and negotiations. Signs or traffic lights establish relations of priority wherein paths of travel are appropriate at some times, and not at others. While in some cases these priorities may change each time the lights change, in other instances the priorities are relatively enduring – as with one-way streets or with waterways in which the water flow always moves in the same direction. So what if we imagine reading overlapping components as potential intersections through which priorities, and dynamics of influence, might be established?

While this line of thought might be pursued through a focus on any components of practices, here material elements, or objects, are taken as a focus. This is in part due to the range of existing work that helps situate this discussion. Follow-the-thing methodologies, for instance, have been used to highlight the "social lives" of objects (Appadurai, 1986) and the many practices through which they take particular shapes, meanings and roles. Within studies of consumption, this has highlighted the production processes through which things are created, and how shifting meanings over time can affect assessments of their potential for exchange (Cook, 2004; Cook and Harrison, 2007; Kopytoff, 1986). Within ANT, following things has highlighted the importance of practices in establishing the relationships that stabilize them. In some cases, objects such as maps are constituted as "immutable mobiles" in order to ensure they maintain the same relations while circulating to other locations (Latour, 1987). Seemingly the 'same' object can also become quite different when used in different locations, with varied practices (de Laet and Mol, 2000). Such literature, while not always taking up a frame of practices, thus begins to outline how objects might form more complex intersections wherein relationships and priorities are made and re-made.

Let us consider then the example of a passport. As Torpey notes in his interesting history (2000), while passports are most associated with border crossing and border control, their creation grew out of a bureaucratic need:

> To be sure, despotisms everywhere frequently asserted controls on movement before the modern period, but these states generally lacked the extensive administrative infrastructure necessary to carry out such regulation in a pervasive and systematic fashion. The *successful* monopolization of the legitimate means of movement by states and the state system required the creation of elaborate bureaucracies and technologies [including the passport] that only gradually came into existence, a trend that intensified dramatically toward the end of the nineteenth century. (Torpey, 2000, p. 7)

The invention of passports thus lies at the intersection of processes of movement and of administrating a system that seeks to control and manage this movement. Before passports can be checked, they must be created, and this involves what have grown to elaborate practices including filling out of forms, taking carefully-specified photos, collecting professional attestation of likeness or personal acquaintance, providing supporting identity documents, and submitting biometric measures such as fingerprints. These traces flow into administrative procedures wherein forms, photos, attestations, and documents are reviewed, assessed, and processed before the production of the object itself – a document that often remains the property of the state and is connected to a myriad of databases through computer-readable codes. These passports, traces of administrative and identification practices, have from their moment of creation a defined lifespan noted by their expiry date, as well as spatialities of relevance – the border checkpoints and immigrations halls where they become a part of different bureaucratic processes.

Even this brief imaginative trip highlights how passports have different relationships to different practices. For the person completing a passport application, the passport is something only imagined – a goal towards which activities are oriented. For those

working in passport offices, the passport is an output and trace of activity – something generated and circulated if inputs have been provided, assessments suggest the validity of these inputs, and appropriate documentation processes are completed. For border agents, the passport is a pre-requisite input that is then scanned, examined, considered, recorded, and potentially stamped. A necessary temporal sequence is thus established for any one practitioner, wherein border checks are not possible without having previously applied for and received a passport. In addition to being "a necessary but not sufficient condition to be admitted into a country" (Wang, 2004, p. 357), passports act as a necessary but not sufficient condition for the performance of certain practices. The sequences of which they are a part involve the orchestration of practices involving multiple sets of practitioners – applicants, government administrators, border security agents – and situated in different sites.

In this way, while there are diverse vocabularies of possible elements that can be integrated into social practices, these are not all equal. Some are more influential – becoming obligatory for the instigation of particular procedures and obstructing the continuation of practices if they are missing. In the case of passports, it is not only their materiality, but also how this is linked with particular meanings (authority, identity) and rules (regarding border procedures) that make them indispensible for practices at immigration checkpoints. While influential in these sites and practices, I am also arguing that this influence should be tied back to the practices that produce the influential objects in question. The application for and bureaucratic processing of passports are thus practices with influence over practices at borders because their outcomes prefigure the possibility of practitioners engaging in practices later in this sequence.

In some ways, this set of relationships may seem to re-describe what has long been discussed in terms of the control and power enacted by states through processes of immigration control and the surveillance of movement (Torpey, 2000; Wang, 2004). What I would like to suggest, however, is that starting instead from passports as objects at the intersection of practices creates the possibility for seeing them not only as "major institutional devices" (Wang, 2004, p. 353) but also as components that can link practices by request, rather than by force.

To explore this aspect, we need to imaginatively follow passports to other places and consider their multiple meanings. While on one hand passports are instruments oriented to the control and documentation of movement, and are indispensible for related practices, at other times they are interchangeable with other types of identification cards, which "establish the identity of the bearer for purposes of state administration" (Torpey, 2000, p. 159). As such, passports can provide access to not only national territories but also to other sites or services – verifying one's identity when applying for a bank account or commencing new employment, one's age for alcohol purchases or one's citizenship when accessing "certain rights of democratic participation (e.g., voting), public services (e.g., medical care), and transfer payments ("welfare")" (Torpey, 2000, p. 165; Wang, 2004). In such cases, a passport may be adopted or offered to fulfill obligatory identity checks, rather than imposed. While it

still has influence, in terms of facilitating the continuation of procedures and having authority as a testament to personal characteristics, its links to other processes of state administration and control may vary. Regulating access to medical care may be a part of coordinated state practices (if this care is publically funded), but when passports are given as proof of identity at hotels or banks, these ties could be considerably weaker or nonexistent. Identity documents may be adopted into a range of practices where they are not strictly required by rules, forms, or audits imposed by other practices. Thinking about other objects not produced through the bureaucratic practices of states makes this point even more clear – while mobile phones have been adopted as tools for in-class live polls, they were not initially created for this purpose nor is their use imposed by other organizations or practices. Nonetheless, by accepting passports as a form of identification (or mobile phones as live polling tools), their authority and influence is still reinforced.

This discussion has tried to make a series of moves. Firstly, it has suggested the potential for adopting a variation of methodologies that 'follow the thing', in order to investigate how materials are situated at the intersection of multiple practices. The aim is not only to highlight how these materials are made, as has already been shown in studies of consumption, nor to highlight how they can be vectors of power that facilitate action at a distance. In addition to these dynamics, imagining materials at the intersection of multiple heterogeneous practices allows for considerations of variation and influence.

Secondly, it has highlighted a number of ways that materials vary and have influence. Materials vary in terms of their intersectionality – some are used in a vast number of practices while others are used in very few. These variations should be read in terms of at least potential influence, because it suggests that any changes in their characteristics have the potential to affect a greater or lesser number of other practices. In addition, materials vary in terms of their importance to particular practices. On one hand, materials can be obligatory when there are no other materials that can be substituted and their presence is a necessary condition for continuing essential processes. On the other hand, they may be substitutable – as in the case of different types of identity documents – or negotiable – if different processes can be conducted in their absence – or entirely optional. Depending on these varying levels of centrality to a practice, materials can be seen to have different levels of influence within it – prefiguring to a greater or lesser degree subsequent activities within performances. Finally, materials are wrapped up in chains of actions and chains of inputs and outputs. By using some elements, practices transform them into others. Situating materials at the intersection of practices is therefore not just about identifying their individual lives, but also considering how they relate to series of materials that determine possible sequences of practices. Birth certificates are needed to obtain passports, which for migrants are needed to obtain health cards or numbers, which are needed to give birth to a child in a hospital, which will then prompt a further application for a birth certificate. Such sequences where one material is required for the production of another are an indication of variation – not all materials will appear frequently as inputs or outputs

– and influence, as the inability to obtain some materials may act as a barrier to participation in certain practices.

Thirdly, aspects of influence and variation between practices have also become apparent. By following things and not actions, it becomes possible to see how influence can be reinforced through the voluntary incorporation of materials, as well through the mandating or imposition of materials related to rules, policies or bureaucratic procedures. Once produced and made available, materials can be adopted into a wide range of practices – including those that their creators had not expected or intended. Influence thus emerges from indeterminate processes, through the incorporation of objects shared by other practices. To call this influence is not to suggest the role of these materials is the same in all practices – rather it is to highlight that the materials themselves, and the practices that produce them, come to have power due to at minimum their temporal priority within a sequence of practices and transforming materials. Amongst the interwoven field of practices it is therefore important to identify material intersections that establish obligatory or preferable temporal sequences as these can have a bearing on patterns of influence enacted amongst practices.

Groups of practitioners at the intersection of practices: the case of funerals

While the intersections within a field of heterogeneous practices become apparent in relation to shared materials, people also embody them. As Reckwitz highlights, people have a different position within theories of practice than within cultural theories that situate them as individuals: “As there are diverse social practices, and as every agent carries out a multitude of different social practices, the individual is the unique crossing point of practices” (2002, p. 256). People are thus inherently positioned at the intersection of practices – of working, cooking, eating, washing, banking, socializing, fundraising, exercising, gardening, reading, training and more. This positioning can bring benefits – such as the development of skills or understandings which can be incorporated into a different practice – and challenges – involving seemingly incompatible meanings or the competition between skills or competences that degrade or obstruct each other (as in tradeoffs between muscular strength and flexibility). Some aspects of this have been investigated within literature on multiple careers – especially in relation to women’s careers as mothers and professionals (Crompton and Sanderson, 1986; Eaton and Bailyn, 2000; Evetts, 1994). Much more remains to be said, however, about the dynamics arising from people’s positioning at the intersection of multiple practices.

In this section I will take up one particular aspect related not to any one person’s status as a ‘crossing point of practices’, but to the patterns of overlap that occur amongst groups of practitioners. For each practice a person participates in, there will be a group of other practitioners – some with whom performances might be shared spatially, temporally, or both and others with whom direct contact might be established occasionally, or not at all. Being at the intersection of many practices also means being at the intersection of many different groups of practitioners.

Some aspects of this positioning have been addressed within literature on communities of practice. Dissatisfied with what were at the time predominant understandings of learning as a formal process of mental changes occurring through knowledge transfer from teachers to pupils, Lave and Wenger proposed that learning instead be situated amongst a range of shared practices (1991). In addition to foregrounding practices, this framing suggested that learning is relational, and therefore needs to be studied through attention to not individuals but collectives or groups (Fuller, 2007, p. 19). This understanding has become popular within educational circles, despite criticisms about the limitations of Wenger's later elaborations on 'communities of practices' (Jewson, 2007, p. 69). Nicolini, for instance highlights how by reifying the notion of 'community' Wenger draws too strongly upon positive framings of the term and makes practice conditional upon it (Nicolini, 2012, pp. 90-91). Nonetheless, work developing these understandings has highlighted how competences, skills and knowledge are acquired by people within groups of practitioners who undertake practices together and learn from each other, regardless of their positioning as novices or experts.

While useful for understanding some aspects of learning, starting from this concern limits both the type of practices considered and the types of groups that might be important. Many household chores such as washing the dishes or folding laundry involve understandings and skills that must be learnt, but the relative simplicity of these practices makes it possible to learn by observation, brief interactions with a few family members, or by trial and error. The lack of community engagement around such practices can lead to a lack of awareness of possible variations that can cause tensions when couples begin cohabiting (Kaufmann, 1998). Wenger's point that not "everything anybody might call practice is the defining property of a clearly specifiable community" (1998, p. 72) is therefore important, despite receiving limited attention in this literature. Moreover, however, focusing upon groups that are invested in mutual processes of learning obscures the importance of groups that may not learn together, or even share practices regularly. That is, there are additional ways that shared practices might be important than those included within processes of learning.

To take up this possibility, I turn to a consideration of funerals. As the colloquial saying goes, the only inevitabilities in life are death and taxes, and most everyone will participate in funeral practices at some point in time. Yet despite the large number of potential practitioners, very few have built up significant participation or expertise in this practice. It is not uncommon for people to be thrown into the role of key participants when a family member passes away, having little or no experience and knowledge of required processes and possible elements. Centuries ago, religious leaders would have taken the primary role in guiding families through this process. Public health concerns in the wake of industrialization, however, led to the secularization and rationalization of funeral provisions, and "the rise of new specialists: registrars, pathologists, funeral directors, cemetery entrepreneurs and managers" who become positioned as expert practitioners alongside religious leaders (Walter, 2005, p. 176). Funerals practices thus involve a diverse set of practitioners, including many who will not perform together repeatedly. Religious

leaders, musicians, and funeral directors may share a series of funerals over time, but many family members and attendees will infrequently, or possibly never again take part in funerals with them. The group of practitioners involved in a funeral cannot therefore be said to be part of a community that is repeatedly engaged around this practice.

Families also have interesting positions in relation to funerals, due to their varied relationships to shared practices. Families are groups about whom a wide variety of meanings and general understandings circulate – children begin learning these through picture books and early schooling, and continue encountering them as adults through a wide variety of cultural products including housekeeping magazines, the anthropomorphized descriptions of animals in documentaries, the deriding of problematic families in news stories and the retelling of religious stories and parables. Yet the shared practices that families engage in can vary widely – in many countries shared meals at holidays are expected, but in harried households former patterns of shared evening meals may have fallen to the wayside. Shared religious practices that would have been widespread among families several centuries ago are no longer an expectation – with inter-religious marriage, higher rates of secularism and even greater residential mobility making this untenable in many places today. Moreover, a range of social and economic changes have shifted the necessity of shared family practices for survival – multigenerational family farms aren't an obligation when technologies have changed the productivity of a few people and systems of food provision make it easy to find food off the farm. Caring for elderly generations needn't be the responsibility of family members given the existence of an increasingly diversified range of professionally run facilities with progressive levels of medical and social care. As a result, some of the very practices through which meanings of care, love, dedication, trust might be enacted between family members have become less prevalent and in many cases largely voluntary. Nonetheless, in many places there still remains an understanding that families must share funeral practices – often regardless of tensions or disagreements with the deceased or other extended family members. Funeral practices can thus necessitate activities shared and shaped by people who share few other practices in common.

This potential for few intersections between the practices undertaken by different family members, or different participants in a funeral, has interesting consequences for the variations in funeral services. As Walter notes, in modern Western countries funeral services have evolved into three different (not always discrete) models: those that are institutionally commercial (led by a funeral director), institutionally municipal (led by municipal officials), or institutionally religious (led by religious officials) (2005, p. 177). Within each institutional model, religion may or may not play a cultural role – as for instance in U.S. funeral home services that are structured as Christian services or the predominance of church services in culturally secular Sweden (Walter, 2005, p. 182). Though Walter suggests that the different institutional models position families in different roles – as customers, members of the public and parishioners, respectively (2005, p. 177) – this implies homogeneity within families that as we have noted doesn't bear out. Whether planning a service in a funeral home or in a church, involved family members may have widely different

careers of religious participation and thus different understandings of the importance of including religious elements. The resulting service can thus become an eclectic mix of activities of different provenance and with diverse relationships to the family, attendees, and deceased. Humanist services can include the Lord's Prayer (Holloway et al., 2013, p. 41), Pink Floyd may be played at a church service (Szmigin and Canning, 2015, p. 755), or as I experienced the deceased's refusal to convert to Catholicism be discussed during her Catholic wake. In addition to variations in the form and elements of funeral services, such negotiations can also provide complications for those attending, as this interview excerpt from Szmigin and Canning's research highlights:

> Ian['s funeral] was in a church because he was buried in the churchyard, but I'm not religious at all so there's no religious aspect for me. We had some hymns, two or three hymns that his mother chose, and nobody knew them. I thought that was hideous, because nobody was singing, everyone was just looking around a bit, embarrassed, they were just hymns no one had ever heard of. (Szmigin and Canning, 2015, p. 756)

Such moments of discomfort bring to attention that those sharing in funeral practices often do not have histories of shared experience and do not sit at the intersection of the same practices. Therefore, activities such as singing hymns become problematic because what is familiar for one person is completely unknown to another. This affects not only any one person's ability to participate, but also the potential meanings of the ritual – that what should be a shared practice of remembrance and respect is only incompletely shared.

This discussion has highlighted a number of important points. Firstly, it has illustrated the importance of moving beyond communities of practice, and beyond a primary focus upon learning, in order to consider how groups of practitioners have varying degrees of shared experience. Even groups like families that are regularly associated with meanings of intimacy, care, and love may find that the practices they participate in have few significant overlaps. This matters because in some cases practices are performed not by those who share sets of agreed meanings and goals build up over a history of shared involvement, but rather sets of varied and potentially conflicting ones that need to be negotiated for one-off exceptional performances.

Secondly, this highlights how practices have varied degrees of continuity in terms of practitioners. While professions or 'serious leisure' practices (Stebbins, 2001) may involve dedicating effort over a long time to the accumulation of skills and knowledge, other practices including those surrounding rituals such as birth, marriage and death can be characterized more by intermittent participation and a vast number of participants who lack basic skills and knowledge. In the latter case, while there are a series of performances that might be shared by religious leaders or specialized professionals, the vast majority of people taking part in one performance will not take part in the next.

Thirdly, this hints at one way that influence may be enacted – by virtue of being a regular participant in what is for most people not a regular practice. The authority of

funeral directors, municipal officers or religious leaders to determine various aspects of funeral practices in part stems from institutional rules that determine where bodies may be buried, how deaths must be recorded, or to what extent 'standard' service structures might be adapted. But another form of influence arises from how these professionals are situated at the intersection of practices. They have more established careers in funeral practices, and thus are looked to for advice and guidance on what for others is an unfamiliar process. Their expertise is perhaps comparable to other professionals with established careers, but I am suggesting that their relational influence is greater due to the wider gap between them and other practitioners.

Conclusion

This chapter has explored what could be gained from making the intersections between practices starting points for methodological and theoretical development. Through the consideration of two extended examples, it has highlighted that such intersections could take multiple forms. Some might be shared components – elements or activities that are found in and move between different practices – but others could be embodied in people and the varied groups they perform alongside. In this way, taking seriously the question of how practices intersect requires attention to multiple dimensions of intersection and how these might work in concert or in conflict.

Exploring examples of intersections has also facilitated a consideration of different types of questions about the field of practices – including how variation might involve more than qualitative difference. While it will be important not to reify potential variations between practices, in order to ensure that their differential influence remains framed within understandings of continual enactment and transformation, these lines of investigation suggest the potential to engage further with issues of power and inequality. This chapter has pointed to how temporal sequences, necessary conditions, and relative expertise might be important for interpreting the influence operating at the intersections of practices, and future work will undoubtedly find other dynamics at play. Further investigation and identification of influential intersections therefore is an important opportunity for pushing forward understandings of the heterogeneous field of practices comprising our social world.

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Matters of practice

Elizabeth Shove

It is obvious that the lives of things and practices are mutually constituted and densely interwoven. It is also obvious that really significant trends like the massive increase in CO2 emissions over the last few decades, are outcomes of what Schatzki describes as 'practice-arrangement' nexuses (2010). Situated in the space between these two opening sentences, the purpose of this chapter is to develop a practice theoretically compatible account of material relations that helps conceptualise rapid increases in per capita energy demand.

The grand scale of this ambition is in part a critical response to those who contend that theories of practice are especially and perhaps only good for analysing daily routines and localised patterns of consumption (Welch and Warde, 2015; Geels et al., 2015). For the moment, and particularly in the environmental field, empirical work inspired by practice theory tends to focus on 'end' consumers: on those who do the cooking, have daily showers or twiddle with heating systems. However, this is not a necessary feature of taking practices to be the central topic of enquiry. As I hope to show, systematic consideration of the matters of practice provides a means of connecting otherwise separate realms of producing, manufacturing, making and using. Moving in this direction has the further advantage of demonstrating the relevance of practice theory for understanding processes that are commonly taken to be the preserve of disciplines that deal with resource economics, environmental politics and world trade.

In other respects this chapter is deliberately limited in scope. The methodological decision to think about how energy demand is constituted informs the way in which I characterise and slice material-practice relations and the examples I use. Although many of the issues discussed below are of wider relevance, what follows is not designed as an all-purpose exercise in mapping the many routes and processes through which practices are materialised (and vice versa). Accepting that materials and practices *are* interwoven, and that humans, artifacts, organisms and things of nature – are variously but unavoidably enmeshed in social life (Schatzki 2010), the project is that of understanding the emergence of configurations and practices that are distinctly resource intensive. This depends on developing a more detailed account of how specific flows of 'matter-energy' are formed.

With this problem in mind I start by considering three *roles* that things can play in practice.[1] Some things are necessary for the conduct of a practice, but are not engaged with directly. I suggest these have an 'infrastructural relation' to practice. A second category includes things that are directly mobilised and actively manipulated: I count these as 'devices'. Third, there are things which are used up or radically transformed in the course of practice and that figure as 'resources'. This way of thinking about things is distinctively practice-centric. It is so in that identical objects can have different roles, and thus fall into different categories, depending on how they are positioned within and in relation to different practices.

The main business of the chapter is to explore the relevance of such an approach and to show what it might have to offer within practice theory and beyond.

[1] Other roles are no doubt possible

More specifically, can this three-part classification help in disentangling and describing the packaging of material-practice relations across sequences and chains of production and consumption. I write about house building, home heating and watching television as a means of detailing relevant processes of connecting and prefiguring.

A second challenge is to use this scheme to think about how the status of things changes in practice. For example, when and how do device-oriented relations become infrastructural and vice versa? In the cases I discuss, shifts involving larders, fridge-freezers and frozen food chains are part of making and reproducing other distinctions and flows. I suggest that transitions of this kind are relevant for understanding how resources, including forms of energy, circulate and how 'demands' are built. In the third part I comment on how things which tend to have infrastructural, object-oriented or resource based roles figure in the spatial and temporal patterning of practices (and vice versa).

I finish by taking stock of what this method of dissecting material-practice relations allows us to see and to say. Before getting into these cases and questions it is useful to elaborate on the lines of thinking on which this approach draws and from which it departs.

Material relations in practice

Although there have been careful and detailed expositions of things within and as part of social practices (Schatzki, 2002; Reckwitz, 2002) there is rather less analysis of the range and variety of material relationships involved or of precisely how material entities figure in what people do.

To date, the most significant difference is between discussions of material *elements* which are treated as being integral to the conduct of a practice (Shove et al., 2012), and material *arrangements* amidst which practices transpire (Schatzki, 2010). For Shove et al. the material elements of car driving might reasonably encompass the road network, a system of petrol stations and the steering wheel itself. All are accorded the same material status. Meanwhile, Schatzki's concept of material *arrangements* amidst which practices transpire, does not distinguish between things which are directly, routinely or only distantly and occasionally implicated in the conduct of a practice. This is not in itself a problem. In both cases broad brush representations of 'material' are sufficient and consistent with the similar but not equivalent ambitions of the authors involved.

However, this language of elements and arrangements is of limited value if we want to know how and why specific patterns of production and demand arise and are engendered by correspondingly specific conjunctions of practice. Warde's (2005) observation that things, including energy and other resources, are consumed in the course of practice provides the starting point for a more differentiated account. The statement that "the enactment of any one practice (for example, cooking a meal or travelling to work) typically depends on the prior existence and availability of a range of energy sources (gas, electricity, oil), infrastructures (grids, pipes, roads) and devices (cookers, cars, bicycles)" suggests that objects can be grouped, in advance, under one or another of these ready-made headings (Shove and Walker, 2014: 50). This is a rather literal account.

A more subtle approach, and one that I develop here, is to distinguish between *the roles* that materials play in the enactment of any one practice. This is in keeping with those who write about objects not as isolated entities but as always integrated within and always inseparable from more

extensive assemblages (Introna, 2013; Ingold, 2007; Appadurai, 1986; Shove et al., 2014). It is also consistent with Rinkinen et al.'s (2015) method of characterising "object relations" in daily life. Rather than taking objects to have a fixed status, Rinkinen et al. adopt a similarly relational approach, distinguishing between the various ways in which people describe and engage with the materials involved in keeping warm in winter. Although I work with a more bounded and also more pragmatic view of things, the shared proposition is that materials are defined, constituted and positioned in relation to each other through their role within specific practices.

This method makes it possible to show how things switch between roles and to recognise that things which have a background or infrastructural relation to certain practices may be more directly engaged in the conduct of others. These theoretical moves are important but they do not prevent me from appropriating concepts and insights from disciplines and fields which define resources, artefacts and infrastructures in other ways and which focus on them for different reasons. As well as picking out useful points of connection the next few paragraphs provide a reminder both of the complexity of the material world, and of the specialisation of academic research.

Things in the background

Defining things which have an *infrastructural relation* to a practice as those which are necessary but that are not interacted with directly results in a situationally specific but potentially extensive list of possibilities. Depending on the practices at stake, homes, kitchens and a good supply of oxygen would be as likely to qualify as 'infrastructure' as power grids, harbours or pylons. There are no hard and fast rules about where to draw the line or what to count as 'necessary' background: as is usually the case this is a matter of judgement and purpose. In the examples discussed later in the chapter, an interest in conceptualising escalating energy demand provides one filter.

Although many things can have an infrastructural relation to practice, the systems and arrangements through which power, data and water are provided and distributed often figure in this role. As such sociological and historical literature on infrastructures provides a useful point of reference. Classic contributions to this field including Hughes (1993 [1983]), Nye (1992), and Hård et al. (2008) focus on the social, technical and institutional processes involved in establishing what are typically complicated, geographically distributed, relatively expensive and often relatively durable networks. Coming at similar issues but from a different angle, writers like Coutard et al. (2005), Bulkeley (2012), Graham and Marvin (2001) highlight the changing roles of institutional actors (cities, utilities etc.) and their consequences for the politics and the (re)development of networked and decentralised forms of provision. Writing of this kind tends to focus on infrastructures-in-the-(re)making, as distinct from infrastructures-in-use. This is intriguing and also ironic. When infrastructures become invisible in daily life, that is when they are functioning normally, academic interest in them seems to wane. Whilst there is widespread agreement that electricity, communication and data systems constitute an essential backdrop to contemporary life (breakdowns and failure providing tangible evidence that this is so (Nye, 2010) questions about how so many different practices become and remain electrified, or internet-dependent, or of what these processes mean for resource consumption fall between these disciplinary cracks.

Grand observations about "The growing dependence of modern societies on technological systems… [and] the steady increase of systemic vulnerabilities and risks due to the growing complexity of these systems" Silvast et al. (2013: 4) indicate what appears to be a collective transformation in the

material relations of many practices at once. However, infrastructural transitions do not occur in isolation. As Edwards notes, "the actual infrastructures of people's real work lives always involve particular configurations of numerous tools used in locally particular ways" (Edwards et al., 2009: 370). Networks of water, power or data are only of value and only develop and expand when they connect with and enable a proliferation of devices and appliances that are in turn enmeshed in practice. Things in the background are of necessity tied to things in the foreground, and to the ongoing mobilisation of things in action.

Things in action

It is fairly straightforward to identify things which have a device oriented role in relation to the conduct of a practice and that are visibly and actively used in the process of doing. The more complicated task is to conceptualise the conjunctions of human and non-human competence and capacity that follow.

Giard and de Certeau's discussion of 'instrumentation relationships' that exist between practitioners and things, and through which practices are configured, highlights a number of features that are picked up in related literatures and that are especially relevant for a discussion of energy demand. They write about how an influx of appliances "born of an intensive use of work in metals, plastic materials and electrical energy has transformed the interior landscape of the family kitchen"(Giard et al., 1998: 210) modifying the skills of the cook and his/her gestures and actions in practice along with the relation between bodily and other forms of energy.

Going into a bit more detail there are clearly different ways of representing the relation between cook and appliance. One option is to view such combinations as hybrid entities: part cook, part appliance. From this point of view, cooking is done not by the cook alone but by what Wallenborn describes as an 'extended' body (Wallenborn, 2013; Michael, 2000). A related but slightly different approach, also rooted in actor network theory, is to consider the manner in which the appliance (and its designer) script the cook, defining a programme of action that he or she may find difficult to resist (Akrich, 1992). [2] As well as bringing product and tool designers into view this strategy raises further questions about how aspects of knowing and doing are integrated, delegated and divided and how aspects of practice become 'black boxed'.

The common point is that things which are mobilised in practice are not merely 'used': rather such things are implicated in defining the practice itself. In this role things-in-action matter for the division of labour in society, for the extent to which practices depend on human or other forms of power, and related patterns of resource consumption.

One aspect of the 'instrumentation relationship' which is largely overlooked by Giard and de Certeau, and in much other writing about scripts, hybrids and consumption in general is that many, though certainly not all, practices involve making, repairing adapting or somehow intervening in the lives and flows of things. Acknowledging the material outputs of practices, including the uses of objects (and infrastructures) in the reworking of resources opens the way for a more detailed account of material transformation, circulation and exchange.

[2] Infrastructures and things in the background also 'script' and make some programmes of action easier or more difficult to follow, but they do so in different ways.

Things that are used up

It is not too difficult to itemise things that are consumed, in the sense of being used up, in the course of a practice. Staying with examples from the kitchen, making bread requires a pre-determined list of ingredients: yeast, flour, water etc., along with fuel to power the oven. Although sociologists of consumption have had relatively little to say about the unglamorous world of consumables, or the materially transformative outcomes of practice (Gronow and Warde, 2001; Shove and Warde, 2002), such topics are of greater interest to those who write about waste.

Key themes here have to do with the changing status of things as they are used and reconfigured. For example, Strasser writes about how the (low value) by-products of certain practices figure as (high value) inputs to others (Strasser, 1999; O'Brien, 2012). As well as drawing attention to the ways in which practices are linked by material interdependencies and by chains of waste and want, this literature underlines the persistence of the material world. Though constantly transformed, there is a sense in which materials are not literally used 'up'. This is also true for energy: technically defined as the capacity to do work, it is the quality and not the quantity of energy that changes through 'use' (Funtowicz and Ravetz, 1997).

Alongside but detached from these detailed accounts of using and transforming, and far from any social theory of practice, resource economists treat things like wheat and oil, as unchanging commodities the circulation of which reflects seemingly abstract political and economic processes.

In daily life, infrastructural, device-oriented and resource-based relations are thoroughly inseparable, being welded together in various combinations across a myriad of different practices. As the preceding paragraphs indicate, aspects of these relations have been selectively addressed by a range of academic interests, each driven by distinctive preoccupations and paradigms. In borrowing from across this repertoire of ideas and fitting them into an account of the different roles things play in practice the next parts of the chapter are haphazardly interdisciplinary. Organised around the same basic question: Do distinctions between infrastructural, device-oriented and resource-based relations help in detailing material-practice relations that matter for energy demand, and if so, how? – each section focuses on a different theme. The first examines the sequential packaging and prefiguring of material relations. The second considers the fluid status of things within and between practices and the third comments on spatial and temporal configurations of infrastructures, devices and resources.

Material relations in combination and in sequence

In his 2010 article entitled "Materiality and Social Life" Schatzki writes about how materials prefigure practices. In his words prefiguration should be "understood as a qualification of possible paths of action on such registers as easy and hard, obvious and obscure, tiresome and invigorating, short and long, and so on." He goes on to say that "the particulars of material arrangements prefigure the course of practices in indefinitely complex ways." (Schatzki, 2010: 140). The question for me is whether there are methods of narrowing this complexity down, not in general, but in relation to the specific issue of how such prefiguring matters for energy demand.

One method of exploring this question is to think about potential connections between house building, keeping a house warm, and watching television. Table 1 represents some of these

possibilities. Predictably enough, each practice – building, warming, watching – is defined by a particular combination of infrastructural, device-oriented and resource-based relations. The more interesting and also less obvious feature is that some of these material relations are sequentially linked and shared in common.

To start at the top,[3] house building today requires a power supply and scaffolding in the background. These infrastructural features enable the safe operation of an armoury of power tools (devices) that are used in linking and transforming resources and components through the construction process. This is not the end of the story in that the finished house including features of size, layout, insulation etc. acquires an infrastructural role with respect to the practices of heating. In in this context the boiler counts not as a resource to be installed but as a device that is directly engaged with. The nicely heated living room then combines with the national broadcast network in constituting an infrastructure that enables occupants to watch TV in comfort.

Examples of material relations	**Practices**
Infrastructural: electric power network, scaffolding	House building
Device-oriented: power tools, drills, mixers etc.	
Resource-based: electricity, cable, gas pipe, bricks, insulation and complicated ready-made components like boilers.	
	↓↓↓↓↓↓↓↓
Infrastructural: electric power network, the fabric of the home (see above)	Heating the home
Device-oriented: boilers (see above)	
Resource-based: gas and electricity	
	↓↓↓↓↓↓↓↓
Infrastructural: a warm room (see above); a broadcasting system	Watching television
Device-oriented: television, sofa	
Resource-based: electricity	

Table 1: material relations in combination and in sequence

This method of distinguishing between different yet connected material relations suggests that paths of action are *successively* and *repeatedly* qualified. This is relevant in that certain sequences of prefiguring may turn out to be self-reinforcing, potentially combining in ways that channel overall patterns of resource use.[4]

Taking a more lateral view, what Giard and de Certeau refer to as 'instrumentation relationships' feature in each of the practices described above. And in each case, electricity is involved. This is not

[3] Though this is just one slice.. there are other ways of defining top!
[4] Interesting that Akrich and others do not talk about chains of scripting.

just a matter of recognising that energy is embodied in the materials of which homes are made, and in the process of their construction. Rather, the point is that powered devices (which bridge between infrastructural relations and resources) have transformed the extent and the division of human labour on the part of the building contractors *and* of the future homeowners for whom they build.[5] From this point of view, practices like those of building, heating and watching TV are collectively involved in establishing and reproducing the 'need' for networks of power.

Figure 1 works with similar ideas but extends them, incorporating processes of manufacturing (especially of appliances) together with resource manufacture and 'generation', also indicating how these might variously constitute cooking, laundering and watching TV.

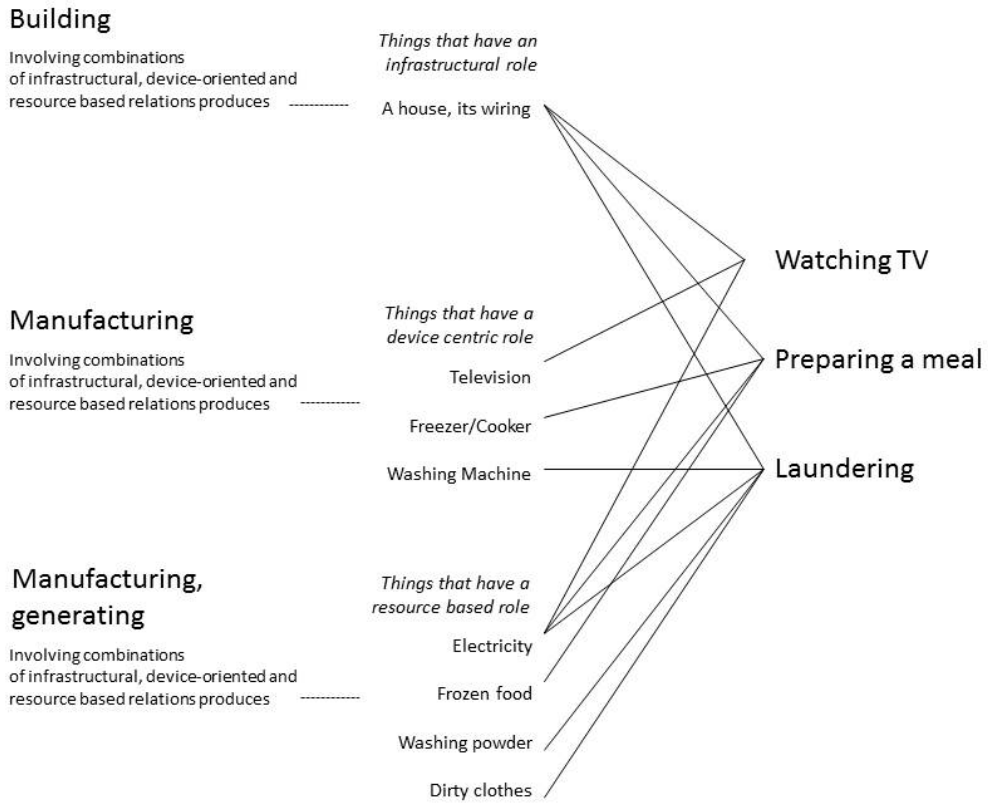

Figure 1: patterns of making and doing

This more elaborate image implies that domestic, professional and manufacturing practices interact in concert. It is an obvious point but what is involved in doing the laundry depends, in part, on what the machine can do. And what the machine can do in turn depends on how and of what it is made. In this way, the skills and practices of washing machine making are tied to those of washing.

Second, whilst the specialisation of devices is also evident (TVs are not used in laundering), some of the manufacturing and resource-related relations that lie behind these objects overlap. For example, small electric motors and other standardised components – LEDs, switches etc. - are embedded in a

[5] See Kris de Decker's article on drilling holes http://www.lowtechmagazine.com/2010/12/hand-powered-drilling-tools-and-machines.html

range of otherwise diverse appliances, and again the use of these parts has widespread and not practice-specific implications.

Third, and as is increasingly evident, energy demand is constituted right across the map. Electrified instrumentation relationships occur in factories as well as in kitchens; appliance designs matter for the relation between human and other forms of power (as in cooking and laundry); and with electrical wiring in place new practices (TV watching) are enabled. More than that, forms both of automation and delegation (to machines and non-human forms of power) reconfigure the distribution, definition and constitution of competence (Shove et al., 2007).

Categorising and defining things in terms of their role in a practice helps bring these topics to the fore and provides a means of thinking about forms and types of interconnection and of prefiguration. However, it is important to remember that material roles are often ambiguous and always provisional.

Material relations in flux

How do things come to have the roles they do, and how do these relations vary and change? In this section I comment on instances in which things switch status, for example between device-oriented and infrastructural roles, and in which they flip between background and foreground depending on the practices within which they are situated.

Some of these movements are extensions of processes discussed above. For example, the 'full' automation of heating or lighting systems removes the possibility of direct interaction meaning that these services are actively provided by building managers but passively encountered by building occupants. Distinctions between things that have an appliance or device-related role and those that figure as background infrastructure quite often mirror other boundaries, including institutional roles of management and responsibility.

One currently controversial example concerns the status and hence the design, ownership and provisioning of electric vehicle charging points. Should these be conceptualised in a background role, that is as something which enables the use of an electric car, but which is not in itself 'used'. Alternatively does the charging point figure as a discrete device that is actively used as part of a new practice: namely that of charging the vehicle? It is not yet clear how the material politics will evolve but it is evident that whatever the outcome it will be an expression of a shuffling of practices between households, car manufacturers and utilities. More subtly, concepts of state and market, and of consumption and production, are made real through interactions of this kind.

A second insight, again arising from this exercise in thinking how things figure in practice, is that certain entities simultaneously occupy different roles. The fridge freezer is one such item. To elaborate, the entire frozen food sector, and the systems of agriculture, manufacturing and distribution of which it is comprised depend on the background co-existence of millions of home freezers. From and industry point of view these appliances have an infrastructural role in relation to practices of producing and distributing frozen food. Meanwhile, each individual freezer has a more localised and also a more 'foreground' status within a specific complex of shopping, cooking and eating practices. Recognising that the freezer's device oriented role (in the home) defines and depends on the freezer(s) infrastructural roles within practices of production and distribution

enables us to detect the interpenetration of material relations threading through the complexes of practices that together constitute frozen food systems – and the forms of global trade associated with them.

In brief, tracking material roles as they span and flip between practices and across 'supply chains' helps explain how large technical systems are multiply sustained and how such infrastructures become embedded across different areas of daily life. Moves like this promise to counter what remains a rather lopsided emphasis on the social and institutional processes involved in establishing and reconfiguring networks of provision and power. As mentioned above, energy demand is constituted right across the map. Paying attention to the ways in which material relations (infrastructural, and device-oriented) are arranged and bundled promises to reveal the contours of this map as formed both by 'flows' of energy through sequences of practice, as discussed in the previous section, and by the demarcation and flipping of material roles, as considered here.

Material relations in time and space

Given that consumption occurs in the course of social practices, the spatial organisation and timing of such practices matters for the spatial organisation and timing of consumption and for the circulation, distribution and storage of the materials involved. What this means, in detail, again depends on the roles things play in practice. For example, consumables which are 'used up' need replenishing. By contrast, things which stand in a background or infrastructural relation to practice, or which have a device-orientation are rarely depleted in the same way. Such things are, however, crucial for the range and extent of resources involved, for how these are distributed and for when and where they are consumed.

Systems that are intended to have an infrastructural role, like electricity, road and rail networks, or data systems, are typically designed and sized to meet present and sometimes future 'needs': the common logic being that of 'predict and provide'. From an engineering perspective infrastructures should deliver resources and enable the operation of devices involved in doing all manner of different practices. Since the scale of demand depends on the number and the type of devices in use at any one time infrastructures have to cope with daily and seasonal fluctuations related to *when* and also *where* multiple practices are enacted. Systems are consequently sized for moments when lots of people are simultaneously engaged in travelling, exchanging data or in doing things that draw energy through the system.

In terms of practice theory, understanding how peaks and troughs of demand come to be as they are depends on thinking not about one practice at a time but about how complexes of practice relate to each other and how sequences and rhythms are formed. From this point of view, the sociology of time has a potentially central role in understanding and explaining escalating patterns of energy demand, and in characterising relationships between resources, devices and infrastructures at different scales. Although not written with such questions in mind, Zerubavel's sophisticated account of the ebb and flow of people and practices in hospital life is, at the same time, an account of organisational and societal synchronisation (Zerubavel, 1979). Since practices often depend and are in part defined by co-existing infrastructures (electricity and data; water and gas, etc.) their coming together and their separation in space and time is felt across different systems of provision. This is significant in that the strategy of designing systems to cope with the peaky-ness of rhythms and complexes of practice depends on building in redundancy, and on systematically 'over' sizing.

By implication, energy use, in aggregate, is not only an outcome of the enactment of specific practices: it also relates to spatial and temporal relations between practices.

One final observation is that things which are likely to figure in infrastructural, device-oriented or resource based roles tend to be differentially distributed, socially and geographically. Amongst much else, doing any one practice typically depends on the coming together of all three 'roles'. However, the fact that infrastructural arrangements and necessary background features are in place is of limited value if potential practitioners lack either the devices or the resources/consumables required. Also important, certain infrastructural arrangements are designed to prevent the use of certain devices: for example, motorways exclude the safe, comfortable or legal use of bicycles. As indicated here, disaggregating material roles promises to be of value in analysing the social-spatial qualities of arrangements that make certain practices harder or easier to enact.

Discussion

Theories of practice have made important contributions to the analysis and understanding of social life, and will continue to do so *without* distinguishing between different material roles. However, this discussion suggests that it may be useful to tease the world of things apart in this way when developing a practice theoretical approach to problems like those of understanding escalating resource consumption. The series of thought experiments outlined above highlight the potential and the limitations of such an approach.

On the positive side, this exercise draws attention to a handful of themes that deserve further attention within practice theory. One is the point that many of the things that people do involve making or modifying materials that feature in other practices. Following sequences of material conjunctions and transformations provides a fresh way of conceptualising 'consumption' and 'production' and the threads of matter and inter-practice-relationships that bind these seemingly separate spheres together. As indicated above, capturing and characterising these connections depends on recognising the fluid status of things and their role in the foreground or in the background of different practices. Second, there is something intriguing about how different material relationships are involved in bounding what count as separate practices, and in related processes of merger and hybridisation. The relationship between device-oriented and infrastructural roles appears to be especially critical in this respect (for example, in cases of automation, delegation and 'infrastructuralisation'). Third, this method makes it plain that the production and circulation of goods and commodities is thoroughly and unavoidably embedded in the ongoing conduct and transformation of social practices around the world. To put this more concretely, the 9.6 billion tons of stuff that was transported in container ships in 2013, [6] along with the estimated 93 million barrels of oil and liquid fuels that are on average consumed each day[7] are not expressions of economic and political forces or the circulation of capital, or outcomes of multi-level or other kinds of transitions, as if these were somehow detached from the realm of social

[6] http://unctad.org/en/PublicationsLibrary/rmt2014_en.pdf

[7] IEA http://www.iea.org/aboutus/faqs/oil/

practice. In so far as energy use and patterns of escalating demand are consequences of what it is that people do (Shove and Walker, 2014) theories of social practice could and should occupy a central and not a marginal place in explaining forms of resource consumption and trade.

In relation to the analysis of energy demand in particular, this chapter makes a handful of contributions. One is to show how infrastructures[8] and systems of provision interlock with the uses of devices and resources. By implication, demand is made through all of these relationships: it is not an outcome of consumer 'need' as if this had an independent life of its own.[9] Two other observations point to new ways of thinking about how demand increases and how it might reduce. One is to notice the critical role of the idea that infrastructures should be capable of meeting foreseeable forms of 'demand'. Because they have a background role, infrastructures have what seems to be a distinctive part to play in configuring, prefiguring and multiply enabling many different practices *and* the relation between them. Current infrastructures will not last forever and how they are repaired, re-shaped or renewed over the next few decades will have a big impact on other aspects of material-practice relations, and hence on future energy demand – whether for good or ill.

On the down side, the ideas explored here are derived from a problematically instrumental view of the part things play in social life. I have been writing as if things were tools, not toys, and I have taken no account at all of things as carriers of nostalgia or novelty, or as signifiers of meaning and status.

I have also moved away from representing things as ready-made 'elements' that are integrated in the course of enacting and reproducing/transforming a practice. The strategy of characterising things *in relation* to practices makes sense theoretically and is analytically productive, providing a means of revealing sequences of 'production' and 'consumption' and the different implications of these processes for things in the background, in action and that are 'used up'. But as a methodological position it is decidedly slippery: in this analysis things-in-relation-to-practice are always multiple, never stable and never fully defined. The aim of using theories of practice to account for global transitions in resource consumption and trade remains, but it is by now clear that it will be difficult to establish points of connection between a relational account of things in practice and what are, of necessity, much more 'fixed' interpretations of goods and services of the kind that underpin discussions of resource economics and energy demand.

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[8] Here taken in a literal sense – e.g. meaning power grids etc.

[9] It therefore makes no sense at all to talk of 'End Use Energy Demand'.

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Technological Relations In and Out of Practice

Draft chapter for 'Advances in Practice Theory' edited collection
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September 2015

This essay examines the role and positioning of technologies within theories of practice. It explores an intuition, arising through empirical research into energy demanding areas of practice, that by focusing on what human-bodies do, practice theories are limited when it comes to a wider consideration of what humans collectively do *beyond* their bodies; that is, through technological systems. In broad terms, the definition of practices and technology share much in common. From the same etymological roots as 'technique', technology can be defined as a way of doing something; not dissimilar from a common understanding of a practice. Indeed, some philosophers define technologies as technique alone, not as hardware (Ellul, 1964). But whether materialised into artifacts or not, technologies are designed, developed and deployed as a means to particular ends, thereby extending human capabilities (Kline, 2003 [1985]). Whilst practice theories recognise that the central doings by which practices are defined, are (nearly) always doings *with* a particular artifact, there is an asymmetry or overlap: not all of what artifacts do is directly and pragmatically relational to such human-bodily activity. Artifacts carry out processes at varying degrees of distance, in time, space and awareness from the activity of people. Moreover, the 'extensions in capability' materialised in technologies are always in some sense additional to the capabilities of bodies. I argue that this raises a subtle problem for defining and analysing what people, collectively, do, and especially how this changes over time through 'technological development'. This discussion focuses on an understanding of practices as being comprised through integrations of elements. I consider three cases in which the significance of technologies is defined beyond or outside direct, pragmatic 'use' within a practice. First, however, I will briefly elaborate the apparent problem posed by what some technologies do and why this matters for element-based theories of social practice in particular.

Machine-Practice Relations

As part of a widespread, and ongoing, debate about materiality in social theory, it has been argued that theories of practice make an important step by recognising the important constitutive and structuring role that material entities of many different kinds play as participating elements in social activities (Reckwitz, 2002a). In a much cited excerpt Reckwitz (2002b: 249) defines a practices as:

> "a routinized type of behaviour which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge".

Building on this idea, Shove, Pantzar and Watson have developed a framework for analysing how practices change, in which a practice is composed and defined by elements of different kinds (e.g. Shove and Pantzar, 2005; Watson and Shove, 2007; Pantzar and Shove, 2010; culminating in Shove et al, 2012). These are materials, meaning and skill and are actively 'integrated' by practitioners as they undertake a given practice. The range of elements commonly associated with carrying out a practice both define that practice, as an entity, distinct from other activities and also act as a set of 'resources' that help to organise particular instances of engagement in the activity (or performances). Practices are taken to be the primary unit by which social life is organised, and they change as the elements and their interconnections change. Key to these changes, in turn, are the ways that elements are shared by multiple practices, and so circulate between them. In this form, practices relate other practices, and

form more or less tightly interdependent groupings. In this scheme, there is no account of what lies or occurs outside or beyond practices (indeed, it is not intended as a comprehensive social ontology). Accordingly, things that matter socially must come to do so (only) through practices.

This is also true of Schatzki's (2002; 2010) more elaborate theory of social practices. Likewise, in this approach social practices are bound to bodily activity. However, Schatzki develops a broader scheme which situates practices (as organised human activity) within the context of encompassing material arrangements, to which they are recursively, multiply and intimately related in many different ways. Both these variants of practice theories privilege what people do (as bodily actively) and pay less attention to what people do through technologies that are in some way set-aside from bodily activities. Although Schatzki's writing provides more responses to this, I focus here on Shove et al's (2012) element-based model because this is where a 'problem' framed in this way is more relevant.

Working with the notion of material that are actively combined with other elements of activity in the flows of what they do, it is hard to escape the image of materials as being largely "'things' and their uses". Although the category of materials is much broader, inclusive bodies and air or whatever, it is rather the concept of active integration that tends to frames certain materials (use-objects) as candidate elements. Thinking about other types of relations between practices and material entities thus becomes a problem. As Rinkenen et al (2015: 1) remark, objects are encountered and engaged in multiple relations beyond "enactment of social practices". How is an element-based scheme of social practices to respond? Does this area 'beyond' the performance of social practices matter? Does it call for more analytical symmetry in the treatment of humans and non-humans, as Latour and Callon have argued for elsewhere?

I address this by exploring a set of particular relationships between practices and technologies. This could have been defined much more broadly, yet it is technologies as a form of what people do, that seen most problematic if and where analysis of 'technological change' seeps beyond social practices. In particular, if we are to better represent and analyse how multiplexes of practices hang together and change together, then a greater elaboration of these relationship could help. This discussion focuses on machines. I use this term provisionally to distinguish a general type of technology, which stands in contrast to tools. Tools are 'handled', or otherwise controlled directly and thereby participate in the activities that define social practices. In contrast, machines denote a degree of autonomy from direct bodily energisation, they operate relatively well-defined procedures designed to achieved particular tasks. The distinction is not unfamiliar; it has been used to various purposes (e.g. Latour 1987 (cited in Orlikowksi and Iacono (2001); Illich, 1978). In particular, Schumacher (1989) quotes thinkers from Buddhist economics in distinguishing forms of technology that undertake and replace 'human work' (machines), from those that serve to supplement it (tools). In fact, we might argue that the distinction between tool and machine functionality arises, not from the essential characteristics of technologies themselves, but from the way that social practices are defined.

In what follows, I discuss three exemplar machines: automated production, central heating and computers. These are not presented as empirical cases (although some of my empirical research has concerned the latter two). Rather, these are presented as emblematic ways to explore different types of 'distance' between technologies and practices. The case of fully automated production is used to explore a direct and purposeful spatio-temporal divide between what technologies and what human bodies are up to. The case of central heating also concerns automation designed to minimise effort and intervention, but in this case the process is (at times) much more closely located as a background to people's activity. The final case, computing, is selected to show how even in use-objects, technologies can do things that go beyond the activities of 'users'.

Case 1. Automated Production: Isolation and Evolution

The very concept of automation is tied up with reducing human intervention, by introducing technologies and setting up systems to run with a minimum of input or labour. Automatic and semi-automatic technologies, like washing machines, cookers and freezers are familiar in homes, but I start this discussion with an emblematic example of 'full' automation: the case of automated production in 'lights-out' factories, so called because there is little (or no) routine involvement from human workers on site. This offers an interesting route in to the question of how automated technologies relate to practices, and how these relationships in turn matter for social change. It seems intuitively to be the case that such production does matter in terms of how society is organised, and the trajectories of development that unfold, yet it is not immediately obviously how this takes place through and in relation to practices. In particular, if and how does such a machinic contribution, which has been set-up to be removed from practices, come to matter through them in *an ongoing manner*? Can automation be significant because of its very *absence* from practices?

Let us first consider the premise that automation exists and proceeds 'outside' of practices more carefully. I think it is fully consistent with Shove et al's (2012) framework, and with Schatzki's (2002; 2010), to claim that the processing machines undertake is not *in itself* a social practice, since there is no human bodily activity that is a part of this process. Fully automated machines do not require a 'user'; they stand-apart. Yet this is not quite the same as saying that such processes are not *part* of a practice, even if that is not in the capacity of a use-object. Do objects constitute and contribute to practices in other-than-use ways?

Maybe so, but in this case, it is difficult to see how the processing undertaken in fully automated factories of machines does constitute, as a distinctive element, any particular well-bounded activity. Which is not to say that the machines and factories themselves and their inputs and outputs are not elements in a range of associated practices. Indeed, through these means automated processing is firmly embedded with a system of practices, existing in the activities of managers, engineers, mechanics, designers, marketeers, delivery drivers and so on. Across this broader set of production practices, it is evident that such machines are useful and used, even if they have no 'users'. Thus by shifting focus away from a single practice, to a system of practices, we can appreciate how automation is positioned in relation to practices. Whilst obvious in many ways, this recognition is useful because it suggests that analysing larger agglomerations of practices is at times needed to make sense of technologies and their uses. Whilst this reframes 'use' beyond single users, it does not dissolve it.

Moreover, the positioning of (relatively) autonomous technologies within systems of practices does not counter the claim that such processes are nevertheless (relatively) independent of any particular practice, however, fleeting that independence or isolation may be. Whilst this may seem petty, I think it is important to a full understanding of the nature of these relationships. Namely, what these machines *do* and the relative dissociation of this from bodily activities is relevant for how technologies and practices change. This can be demonstrated from three perspectives.

In the first instance, automation of production comes to matter through the practices in which it is instigated and to which it is useful as well as those it changes, namely those of the production workers. Secondly, automation may lead to a series of reconfigurations and adaptations in a range of other more indirectly related practices. For instance, changed participation in production practices will most likely lead to changes in other income-seeking activities. Thirdly, least obviously and most important for this discussion, is how such automation comes to matter by virtue of a sustained and ongoing absence from people's activity. This is through dependence relations to practices.

To explore this further, let me stretch this scenario. Imagine it is over 50 years hence since the full automation of a particular production process. Many of the initial changes in the surrounding system of practice are 'sunk'; they

are long forgotten. There is no longer any differential bearing on employment patterns or overt practical consequences for management practices. The arrangement is taken for granted. Yet it remains 'useful'. In fact, there is an implicit and ongoing dependence upon the processes and outputs that the machines deliver; not just within the organisation and industry, but beyond it, in the practices through which the outputs and inputs circulate. Whilst such a dependence is clearly not unique to fully automated processes, and is just as apparent in any staffed or manual form of production, the fact that it is machines and not humans doing this work, does have a bearing on the character of this relationship. For one thing, a process that requires no human intervention compared to one that depends upon large numbers of workers with particular skills presents a different set of 'challenges' for managing in the wider flux of economic, political and industrial changes. But most importantly, what once originated as a substitution for human bodily activity is unlikely to remain so for long as practices and technologies continue to change. I propose that the emerging non-equivalence and irreversibility, and hence practice-related dependence on these automated technologies, is deepened through their relative isolation from the surrounding practices.

Generally the machines, and indeed tools, add something beyond the possibilities of bodily capacities alone. Where this contributes to reducing, removing or avoiding inputs of bodily activity in pursuit of a particular task, the very absencing from these activities means that the degree of integration and mutual ongoing co-constitution that occurs when objects are necessary and participating elements in a practice is reduced. In principle, the ongoing integration into practices that people also inhabit in time and space brings with it certain parameters that define technologies, in terms of how they are used and understood and how they are designed. These are intimately connected. For instance, De Wit et al (2002) argue that the practices that combine and interact in offices have given shape to generations of accounting and computing technologies over the last century or so. This mutual shaping of technological use, form and practice over time is plausibly different where technologies and practices (and thereby bodies) are at a remove.

Even if these automation technologies are not updated or changed, the systems of practice that develop around them do so in a way that is predicated on their presence and operation. Types of employment, leisure and economic organisation shift in ways that they would not otherwise have done, if people were still involved in the processes. The locus of competence in accomplishing any given task changes as technologies become more involved in it, and people less so. The tasks for which technologies were introduced may also be redefined as this shift both in competence and activity takes place. The general point is that if the technologies are improved, modified and replaced, and as these processes themselves evolve the functions they serve are likely to become less and less equivalent and reversible to human activity, even if that is ostensibly what they were initially designed to replace. At the same time, the bodies, skills, expectations and economics have 'moved on' so that such a re-instatement of human labour would be doubly 'impractical'.

This adds to a sense of deepening dependence, as time goes by, in the relationships between fully automated production facilities and the systems of practices in which they are positioned. To an extent, the same could be argued for any technology regardless of how intimately embedded it is in a practice or set of practices. However, drawing on an element-based framework we might suggest that the ways in which material elements circulate through fully automated technologies is pre-configured and not subject to ongoing and potentially less 'faithful' integrations that result in practices, however 'rationalised' and well-regulated they are. In this relative stability we get a sense for how automated machines contribute to the broader environment or texture in which other practices evolve and interact by their relatively set-apart and isolated positioning. Much like buildings, which do not have to be continually re-performed in practices, even if they often are re-interpreted and re-configured (Gieryn, 2002), it could be argued that fully automated technologies provide something of a stabilising context to connecting practices. In this direction, and by inclusion of concepts of context and background as more limited forms of exchange with multiple sets of practices, may be ways of elaborating the ongoing weaving in of certain automated technologies and their capabilities into the fabric of social life.

In sum, this rather particular example of 'lights out' production has allowed us to explore, in distilled form, some aspects of the relationship between practices and automatic and semi-automatic technologies in general. It might be argued that the relative detachment of what such technologies do is problematic for theories that 'attach' practices to bodily activities: should these machine performances not be included and given more equal weight in definitions of society and of what people do (Latour, 1992)? In contrast, I have attempted to demonstrate that recognising this degree of dissociation a useful outcome of working with bodily-bounded concepts of practice. Moreover, even fully automated processes are positioned within systems of practices across which they are defined as useful, and through which (material) elements nevertheless circulate to and from them. Yet this positioning within does not dissolve the relative pockets of isolation in which automated processes are situated. Rather, it points to the value of careful further conceptualisation of this interior and active kind of context (or absence) and the way it is held in place by the interweaving of practices. In Schatzki's terms, such arrangements are "established under the aegis of this practice meshwork" (2002: 97). Thus, active and dynamic entities and systems which are not practices (on either Shove et al's or Schatzki's terms, and of which automated technologies are very limited subset) infuse, subtend, and are held in place in this meshwork of practices. In combination, this meshwork defines the looser more-than practice system of activity in which society occurs. Inspired by Ingold (2007, 2010) we might also imagine such a meshwork[1] as loosely suspended within much wider "currents of materials" (2007:7).

Case 2. Central Heating: Background Circulations

I now turn to the case of central heating, as another example of a technological process that is set-up specifically to operate 'outside' of practices. Yet in contrast to fully automated production this does not take place at spatial remove from people and their flows activities; by design, it might be argued that it is intended to support and enable activity, just not heating activity. Automated central heating provides a specific case of material flows, as orchestrated by technologies, in which practices are at times situated but in non-co-constitutive ways. That is, the process of central heating is not necessarily accompanied by or contingent upon the activities of people; nor is central heating a necessary component of many of the practices that are, at times, performed in parallel. So at first glance, this suggests another area of 'other-than-use' relationships between technologies and their roles in practices.

Let us start, again, by qualifying the claim that the heating of buildings can be positioned 'outside' of practices. In general terms this is deeply questionable. Clearly not all heating or cooling systems are equivalent, and some require a lot of ongoing time and attention. For instance, Jalas and Rinkenen (2013) describe the rhythms of work through which wood heating is achieved. Here, the wood, the trees from which it is harvested, the tools that used to fell and chop, and in the stoves which fires are built are as much part of what people are doing, as those people are a part of the process of wood heating. However, where heating systems are automated these links are stretched to the point that ongoing human activity is not required for their operation. As Ihde (1990: 108) describes:

[1] Ingold (2010) uses the term meshwork, borrowing it from Lefebvre, to refer to the lines of flow and growth along which the lives of things (organisms and materials) extend. In this image, the lines of the mesh represent "conditions of possibility" for interaction between entities, but are not themselves representations of such interactions. They are not relations "between but along" (2010: 12). This is intricate, and is more than I have space or need to address here. However, in conceptualising the relations between practices this could be useful. In some sense, Pantzar and Shove's (2010: 458) notion of a circuit between practices goes in this direction.

> "…there is some necessity for an instant diestic intrusion to program or set the machinery into motion or to its task. I set the thermostat; then if the machinery is high-tech, the heating/cooling system will operate independently of ongoing action."

Were it not for its inclusion in a discussion of human-technology relations, such a quote would appear as a commonplace observation. Yet here Ihde is using the very same example to define a category of phenomenological relations between technologies and people that he describes as 'background relations'. This is where "in operation, the technology does not call for focal attention" but as an "absent presence, it nevertheless becomes part of the experienced field of the inhabitant, a piece of the immediate environment" (1990: 109).

By taking practices as a unit of analysis, and defining them and distinguishing them from one another by the particularity of their organisation, such generalised and backgrounded environmental experiences are difficult to accommodate within the practices that take place in heated environments. Indeed, in exploring how diarists in Finland, described and related to wood heating in their everyday lives, Rinkenen et al. (2015: 1) conclude that they "weave together encounters, tactics and judgements, encountering objects in ways that extend beyond the 'mere' enactment of social practice". Drawing on Ingold and Barad's (2003) conceptualisations of materials not as fixed and crystallised entities but as dynamic, in process and inter-relating flows, Rinkenen et al (2015) emphasise the multiple and flexing roles of things in everyday experience and also their temporality.

On the first of these points, Rinkenen et al (2015) stress the dynamic nature of 'usefulness' as the same objects switch from background to foreground, and from evaluative and encountering modes of engagement to tool-type action-oriented engagement. Such a point is a general one, applying to possibly all artifacts, and relates to shifting attention and intentionality in flows of activity as an outcome of practices. But there is another point embedded within this account of how things-in-themselves shift and change. And it is no accident that these arguments have emerged in relation to the indoor climate. Like with Ingold's (2007b) analysis of the air and sky, the air inside as well as the things immersed in it like bodies, floors, clothes, food and drink, computer servers and other equipment are not static entities but media of ongoing (thermal) exchange and flow (Shove et al., 2014; Royston, 2014). This helps me to elaborate what heating systems do along with the building-systems within they operate within. Much like automated production factories "they carry on, overtaking the formal roles that, at one time or another, have been assigned to them" (Rinkenen et al, 2015: 12). However, in this case it is much clearer that 'things' other than machines have such roles (such as walls, roofs, windows) and they do so by virtue of their material characteristics. In other words, it is not just through interpretation and use within practices that apparently passive objects *do* things: they do things also through their dynamic relations with other things.

In a sense, this much is obvious, but it is significant to emphasise in the current discussion because it, again, helps us to reframe the question I started out with. Perhaps it is not so much that heating systems, the heat they produce, or the building envelope that more or less successfully contains it not *used* as elements in any particular practice, as much as that usefulness is positioned within a wider mesh of practices. To follow this requires careful attention to what things do "in the flow of events and the need for sequencing, synchronisation and temporal coordination" (Rinkenen et al, 2015: 13). In emphasising the roles of materials and when where they take over, we might start to appreciate how chains of action are organised and distributed in more-than practice systems. This is the second point which Rinkenen et al (2015) help to highlight.

Stepping back, we might, like Schatzki (2010: 137), be justified in making reference "to the practice of warming houses". This is an outcome which doesn't just happen, it requires activity and human intervention in the flow of materials to set things up: "the fact that a particular heating system heats a particular house at a particular moment because oil or gas combusts in it can be credited to human activity" (Schatzki, 2010: 138). It is difficult to argue with this. But there is still perhaps a distinction to be made between "setting things up" (Schatzki, 2010: 129) - in the activities of builders, plumbers, window and insulation fitters, and the efforts of the inhabitants to

understand and configure systems - and performing heating. Namely, these setting up practices come to matter (for building inhabitants at least) at other times, when there is no active involvement in arranging or performing heating. These are times when arrangements 'do their bit' so that people don't have to. In this light, buildings and heating systems might be conceptualised as a form connection, or flow, between practices. Indeed, they function a bit like batteries: storing up, carrying and carrying on chains of action initiated at some remove. But care must be taken to recognise that this is not a circulation of elements per se, but something else. Some things have meaning by not being directly integrated into particular performances. Hence, even within a wider more-than practice system, the distinction between what people do (through their bodies) and what people do (through technologies-set-aside-from-bodies) remains significant.

Case 3. Computing: Distributed and Differentiated Competence

Let us finish with a case in which the 'outside-ness' of the doings of machines and other things is not so much defined in relation to functional and temporal dissociation from bodily performance, but by a dissociation that is evident even when using an object, a computer. In this section, I argue that that this dissociation could be just as important when analysing the respective evolution of related practices and technologies. To do so I refer to the concept of competence.

In the first instance, it is important to acknowledge that there is more to competence within a practice, as defined by Shove et al (2012) than the skills required for acting. The category also includes knowledge of strategies and ends, of knowing *what* actions to undertake as part of a practice as well as *how* to do them. In Schatzki's terms, this might be termed as the understanding of the tasks involved in a practice. Arguably, machines and other objects inherently lack this aspect of competence in identifying, defining and understanding 'tasks'. Yet once ends and tasks are formulated, however implicitly, indirectly or historically, competence as defined in terms of the ability to do a particular some*thing*, that is a particular task, is almost always relational: its achievement involves a blend of materials beyond the body, whether that be the surrounding air, or a more classic tool-like object, such as a hammer.

This is essentially a hybrid conceptualisation of 'distributed' competence. Shove et al (2007), drawing upon Latour's analysis of 'delegation' from humans to 'non-humans' describe how competence in DIY tasks can be re-distributed between objects and their users, as they are redesigned. Radiator valves, as an example, can be designed so that those with non-specialist plumbing skills can fit them. In contrast, to add another example, the maintenance of cars is becoming a more specialist pursuit. Through design, many car repairs are effectively closed off to amateur mechanics who lack specialist tools and skills to interact with increasingly electronic and digital components. By changes in the type of hybrid competence required to perform particular tasks, its distribution amongst practitioners also changes, which in turn, contributes to changes in participation in DIY practices. So competence is a very relevant for who can and will perform a particular practice.

We can further illustrate the relationality of competence by returning to the hammer, a classic example in the analysis of technology and tools (after Heidegger). Hammering is a task that requires certain capacities both of the hammer and the hammerer. The qualities of the hammer are relatively fixed into its material form, which is also true for the hammerer to an extent: hands and arms that have the muscular strength to grip are required. Yet beyond this, the skill in initiating and controlling the action, also resides with hammerers. It is something that can be learnt (and forgotten, if not in by individuals then across generations). It is only in binding with a human with this skill that the hammer itself could be considered to have any capacities of its own: its capacities are entirely relational. So too are the motor skills of hammering, which require hammers or object with similar properties. This in turn this touches on ideas of human-non human hybrids, such as cyborgs (Harraway, 1991). Yet, ironically, the image is less apparent with computers, at least in my analysis.

In contrast to automated production, there is already and immediately no sense in which whatever computers do could be substituted for by reorganising people's activity. This means that there is no apparent sense of 'delegation' from human to computer, no *shift* in competence. Rather, a new set of competences are coming into being, and coming into practices. This suggests that competence could be an exceptionally useful concept for thinking about technologies and what they do. Technologies are not simply material elements, and competence is not only that which enlivens human bodies, and allows them to act in the world. Rather, I would suggest that materials other than human bodies, and other organisms, also have competences. This is especially important when it comes to analysing computing.

Computers are very particular type of machine because they run software. Much like a human body, a computer can 'learn' to do something different, without any substantial material reconfiguration of hardware. Because of software, a single computer can also carry out manifold and varied tasks. Moreover, not everything that a computer does is part of a particular task in which a user is engaging; rather there are also a number of processes running at any one time to support the general functioning of the system. In other words, it is not entirely unfounded to think of computers as complex packages of competences, all of which are additional to bodily competences; some of which are relationally hybrid as only defined in the performance of particular practices, such as writing an email; some of which are required to maintain these relational functions; and most of which are entirely inscrutable to most of their users. This points to a relative dissociation between computers as technologies and the practices in which they are used. What computers do and are capable of leaches beyond their role as material and competence elements in practices, and some reconfigurations and redesigns may have little effect on what people do with them.

Overall, the concept of competence seems a relatively under-explored 'element' of practices and their (internal and external) technological relations. It would be interesting to further develop notions of flow and notions of storage in analysing the competence of bodies, materials and hybrids. The discussion by Royston (2015) and also the work of Dant (2005) and Orlikowksi (2002) could be particularly useful, in speaking to the senses of competence both as a storing up (by embodying or embedding) and also as process of ongoing and unfolding combinations, negotiations and histories.

Discussion: Marking distinctions

This essay embarked from a concern that an element-based of model of social practices, as suggested by Reckwitz (2002) and developed by Shove and colleagues (e.g. Shove et al, 2012) is limited by the instrumental way it frames materials. Missing are the relationships between activities, meanings and materials that abound beyond praxical concepts of 'use'. I have suggested this is limited in coming to terms with the contributions of machines that work in a way that is set-apart or removed from bodily activities, and with the role of accumulations of such technologies within society. In considering three examples that vary in the apparent relationship between 'users' and technologies, I have considered different ways of elaborating these relationships within the element-based scheme. In the case of automated production, 'use' appears to remain a relevant relationship but only when considered across a wider complex of organisational practices. Central heating highlights the importance of how the flows of activity are organised across people and technologies and the case of computing stresses how distinctly non-bodily capacities are worked into use-relationships which may only very loosely connect technologies and practices.

Extrapolating from this, many appliances in the home can be characterised by automatic or semi-automatic functioning. Freezers will store a frozen pizza ready for the short interlude in which someone takes in out and pops it in a oven, which will then proceed to cook the pizza, thereby achieving a hot "meal", whilst the would-be chef is doing something else. Washing machines and dryers 'take care' of doing the laundry, and dishwashers the washing

up. In these cases, I would argue that the degree and character of blending or separation between the operation of machines and of the activities people is important. Rhe relative separation of the overall process from human capabilities (and the limitation of time, strength, economy) means that the process is likely to evolves in different ways (though not in any predetermined fashion), than would otherwise be likely. In addition, the practices to which a task or process is connected are also likely to change differently. The degree of separation and the precise mixing of machine and bodily contributions seems important: especially so when it comes to analysing energy demand, although I do not propose any general formula here.

In each case considered above, I, somewhat unexpectedly, discovered how useful it might when analysing social and technological change to highlight rather than blur or dismantle the distinction between what people and what technologies do. This runs counter to the principle of symmetry which is so influential in science and technology studies research and thought on what artifacts do (e.g. Latour, 1992; 1993). This suggests considerable scope for differentiating a set of quite different relationships between practices (not necessarily people) and whatever lies beyond them.

At first inspection, this is precisely what Schatzki's framework offers: not only does it position practices in the co-constitutive context of arrangements, he also outlines a range of relationships between practices and arrangements: causality, constitution, prefiguration, intelligibility and intentionality. In some ways, these could be developed to analyse the cases discussed here. For instance, Schatkzi (2010) suggests that heating systems can be considered as arrangements that prefigure practices, and we might add that this can be more or less intentional and constitutive, as systems and their control come into and out attentional focus, as people adjust and tinker with them. And indeed, in this it certainly helps to think about arrangements of relating technologies, bodies and other materials as opposed to isolated 'elements'. These terms, perhaps with further supplements, do offer ways of thinking about relationships beyond use. In approaching this topic, I was expecting to explore more of this potential. That I have not may reflect that in the examples I have selected the notion of use and usefulness remains very relevant in these cases, though not in the conventional sense of interactions with technologies. What seems more pressing is to move towards more collective, distanced and even "inverse" (or absent present) conceptualisations of 'use' and the related distributions of tasks between people and other materials.

I suggest the reason why a distinction between what technologies and people may often be useful analytically power is because of another current of ‘flow’ besides materials, competences and meanings that 'crosses' through practices, and within which practices exist, are enlivened and re-produced. This is of flow of peoples activity. Simply put, the configuration of practices - what it means for people to do them - has implications for patterns of participation, and vice versa. So whilst, on the one hand, Wallenborn's (2013) argument that practices take place across extended hybrid bodies is a fascinating direction, and shares many of the same starting points as my own discussion in aiming for a better understanding of what technologies do within theories of practice, I think the usefulness of thinking about practices as 'recruiting agents', suggests careful attention to the nature of ‘performer’ units. In fact, this is potentially another interesting line for analysing social practices: what default, ready-formed hybrids or embodiment relationships (Ihde, 1990) tend to engage in particular practices? Families, couples, driver-cars (Dant, 2002), human-electric bikes (McHardy, 2013), commuter-laptops, teenager-smart phones?

Finally, I note that turning attention to flows also, in some sense, turns attention to what is more or less ‘free’ to circulate, and of what these circuits (or circulations) consists. I am conscious at the point of closing this discussion that I have not said much about the conceptualisation of technologies themselves. It is also surprising in writing this that this has not so far been necessary. Yet what I have been thinking that in many ways, if understood always in relation to practices, even at some remove from them, then technologies are akin to 'media', both in the sense of media content, of capturing, storing and circulating relatively closed packages (of meaning, competence and material) and in the sense of texturing the wider, encompassing background medium in which practices hang together.

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Advances in practice theory: problems, frontiers, and opportunities

Shove, Hui and Schatzki (Eds)

'Epigenetics, theories of social practice and lifestyle disease'

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Words: 7564/8834 excluding/including references

Introduction

In the spirit of investigating new frontiers and territories this chapter heads in between two different bodies of theory: social practices and epigenetics, a sub discipline of genetics. Its purpose is to examine the effects of practices on practitioners' bodies[1] and in so doing, advance theories of social practice towards new frontiers in health. So-called 'lifestyle diseases' are a persistent and growing global issue and the leading cause of death and disability, despite decades of intervention (Daar et al. 2007). As there are many varieties of practice theories, in relation to practice composition, this chapter draws on the work of Shove et al. (2012) as it incorporates central tenets of theoretical and applied work to date, in particular the three elements of materials, meanings, and competence. Explorations of possible benefits and tensions of joining ideas from social and natural theories, or the so-called 'soft' and 'hard' sciences, are not new. In fact, they are consistent with the materialist tradition of which theories of social practice are a part (Nicolini 2012; Schatzki 2001a).

Although these investigations are generally carried out unevenly, where ideas from the natural sciences are applied to the human social world, exploratory cross-fertilisation maintains its appeal when seeking explanatory mechanisms of complex phenomena and how to change them. Aside from sub disciplines such as evolutionary psychology and human sociobiology, other more metaphorical explorations venture between the social and natural sciences. For example, Shove and Pantzar (2005) used metaphors of fossils and fossilisation to understand social life and how it changes. Although these explorations have potential, they also have their challenges, some of which Schatzki (2001b) highlights in his critical account of 'sociocultural selectionism', which like sociobiology attempts to apply ideas of biological evolution by natural selection to social phenomena.

Deliberations aside, recent work on theories of social practice has benefited from numerous concepts sourced from the natural sciences of population biology and ecology, including terms like 'recruitment', 'reproduction', 'convergence' (Shove et al. 2012), 'competition', 'cooperation' and 'predation' (Pantzar & Shove 2010). Similarly, ideas about muscle memory from sports medicine and exercise science are useful in understanding how practices are remembered in the body through 'practice memory' (Maller & Strengers 2014). Practice

[1] The term 'bodies' refers to 'body-minds' or 'doings and sayings' as Schatzki (2002, p. 23) and Reckwitz (2002a) among other more recent practice theorists have noted (e.g. Nicolini 2012).

memory, like muscle memory (Shusterman 2011; Staron et al. 1991) 'relies on the notion that through performance, imprints of practice elements are codified and can remain linked in the mental and bodily patterns of the performer' (Maller & Strengers 2014, p. 150). These theoretical explorations, although not free from the problem of incommensurability (Kuhn 1970), have the potential to break new ground by offering critically reflective explanations of and transformative ideas about social change, and how it might be (re)directed in more sustainable, equitable or healthier directions.

There is a need for positive change in regard to health and wellbeing and the rise of chronic non-communicable diseases (NCDs), characterised as typically not passing from person to person and being largely preventable (Daar et al. 2007). NCDs are attributed to 'unhealthy lifestyles' associated with post-industrialisation (WHO 2015a). However, evidence suggests this distribution is uneven, since aside from socioeconomic differences, 'social habits, routines and conventions provide a source of general resistance' (Warde et al. 2007, p. 381). NCDs include cardiovascular diseases, respiratory illnesses, some cancers and type 2 diabetes— responsible for killing 38 million people each year (WHO 2015a), or 60% of all deaths globally (Daar et al. 2007). Associated with NCDs, and in particular cardiovascular disease and type 2 diabetes, is obesity and overweight—'a highly predominant nutritional problem and one of the world's greatest health issues' (Patel et al. 2015, p. 430). According to the WHO (2015b), in 2014 an estimated 1.9 billion adults were considered overweight and 600 million were obese. Public health, despite decades of apparently productive research aimed at intervention has had only marginal success, where 'no country to date has reversed its obesity epidemic' (Roberto et al. 2015, p. 2400). NCDs and obesity are particularly interesting health challenges as they are defined by the complex interplay of people, their bodies and environments, or 'the reciprocal nature of the interaction between the environment and the individual' (Roberto et al. 2015, p. 2400).

The chapter has two interlinked aims. Firstly, to work through possible points of intersection between theories of social practice and epigenetics to explore the effects of practices on performers' bodies. Secondly, to see if ideas from epigenetics can extend the reach of theories of social practice to intergenerational and environmentally related health problems attributed to 'lifestyle'. As there are a number of possible diseases attributed to lifestyle, the chapter focuses on obesity. In achieving these aims, some challenges that arise when aligning two very different theories are presented. Specifically, they include reconciling the units of analysis or the site where action occurs and conceptualisations of the body.

The chapter begins by providing an overview of the main ideas in epigenetics relevant to a discussion about social practices and practitioners' bodies. The next section explores the possible points of intersection between theories of social practice and epigenetics, highlighting tensions and potential incompatibilities. Using obesity as an example, the chapter takes familiar ideas about performance and recruitment and explores them at a more detailed level than previously attempted. The approach raises a series of questions about the inner workings of practice, the intricacies of action and doing, and effects on practitioners' bodies. For example, what types of changes might practices have at a molecular and cellular level? Are some practices better able to make imprints than others? What happens to these

imprints over generations of practitioners? Could these molecular changes be a new form of recruitment? The subsequent section takes ideas outlined previously to examine how a social practice-epigenetics perspective may further encourage the application of theories of social practice to understand and intervene in lifestyle disease.

Epigenetics: What is it?

Epigenetics is a relatively new and somewhat 'controversial' (Bird 2007) field of study in genetics that seeks to understand and explain the effects of gene-environment interactions on the body, in other words, 'the interface between genetics and the environment' (Milagro et al. 2013, p. 784). Its focus is at the cellular and molecular level; how environmental exposures change the way genes are expressed, thereby changing the physical appearance—or phenotypes—of bodies, without changing the underlying genetic makeup, or genotype (Skinner 2014; Tammen et al. 2013). In other words, epigenetics studies changes to the physical form of individuals that occur in response to *environmental* instead of *genetic* factors (Handel & Ramagopalan 2010) (emphasis added).

Various environmental exposures change the way genes are expressed (switched on or off). They include weather, drought, chemicals and environmental toxins, high or low calorie diets, stress, exercise, drugs, including tobacco and alcohol, as well as pathogens (Skinner 2014; Tammen et al. 2013). Exposures can result in changes to the phenotype affecting conditions such as physical shape, disease susceptibility, stress response, behaviour and longevity (Tammen et al. 2013). These conditions are associated with a range of pathologies, from obesity, diabetes, cardiovascular disease and cancer (Milagro et al. 2013), to changes in social behaviour (Keverne & Curley 2008; Skinner 2014) and mental states (Karlic & Baurek 2011), although the evidence for social and mental change is inconclusive (Januar et al. 2015)). This means:

> Epigenetic marks are therefore a reflection of an individual's environmental exposures and as such change during the lifetime of a cell/tissue. Thus, we are 'acquiring' changes to our epigenome all the time (Handel & Ramagopalan 2010, p. 2).

Epigenetics is proposed as an explanation for why monozygotic twins with identical genes often diverge in their physical appearance and disease susceptibility over time (Fraga et al. 2005). One of the most exciting prospects of epigenetics is that it represents a form of 'soft' inheritance (Handel & Ramagopalan 2010, p. 2) or 'epigenetic memory' (Karlic & Baurek 2011, p. 279). Accordingly, past environmental exposures and their effects on bodies pass to future generations, despite the fact the genes themselves are unchanged and that future generations do not necessarily experience the same exposure as parents and grandparents (Skinner 2014; Tracey et al. 2013). Epigenetic inheritance arises from a number of mechanisms. In *multigenerational inheritance*, multiple generations are exposed to the same stressor simultaneously (e.g. via pregnant females). *Transgenerational inheritance* occurs when transmission of epigenetic changes pass through the germline (i.e. eggs and sperm), to future generations not directly exposed to the same environment (Skinner 2014).

Theories of epigenetic inheritance have been contemplated in both the social and natural sciences, from the prospect of inheriting artistic talent or a propensity for genius (Karlic & Baurek 2011; Shenk 2011), to disease and obesity (Patel et al. 2015; Rhee et al. 2012). Not surprisingly, epigenetics is considered to represent 'some of the most exciting contemporary biology' (Bird 2007, p. 396). In terms of the social sciences, how can these ideas link to theories of social practice? To begin, environmental exposures may occur during the performance of social practices—where genes and environment interact. Following this, the logic of epigenetic changes and how human-environment interactions leave imprints on the body parallels theories of social practice, where 'a social practice is the product of training the body in a certain way' and 'can be understood as the regular, skilful 'performance' of (human) bodies'(Reckwitz 2002b, p. 251). This is a principal point of intersection between the theories, which with others, are explored in the following section.

Linking epigenetics and theories of social practice: points of intersection, tension and the role of bodies

Theories of social practice have long recognised the importance of doing and performance (e.g. Bourdieu 1990; Giddens 1984), more recently distinguishing moments of enactment from the 'pattern' or 'block' of the recognisable practice entity that persists over time (Reckwitz 2002b; Schatzki 1996; Shove et al. 2012). As Nicolini (2012, p. 29), notes by 'challenging centuries of Western rationalist and mentalist tradition and to legitimate *real activity*' (emphasis added), Marx was one of the first to reinvigorate ideas of praxis after centuries of neglect. In the moment of doing, or performing a practice, all the elements are integrated. In this state of action, two things occur: 1) bodies interact materially with the world and its artefacts; and 2) in carrying out action, bodies experience certain material conditions, receiving a range of environmental exposures. Both affects can result in material changes in and to bodies. Performance then, is where genes, bodies and material environments interact—and consequently where epigenetics and theories of social practice interface.

Theories of social practice are concerned with the 'enduring' practice entity (Shove et al. 2012, p. 8); whereas, epigenetic theories are concerned with the gene, or more precisely, its expression (Patel et al. 2015; Tammen et al. 2013). These differences in the unit of analysis are where the theories potentially diverge. However, despite having different foci, both involve human bodies and change over time. Thus, this possible point of tension instead serves to highlight that action and its effects are taking place at multiple levels or bodily scales and have varying impacts over time and space. This multiplicity implies questions of timing and sequence. In epigenetics, there are likely to be multiple instances of exposure that trigger a series of cellular events or molecular processes culminating in a change of gene expression and phenotype at a later date—or quite feasibly, as I subsequently discuss in more detail, in another generation (Milagro et al. 2013). Similarly a practice does not arise from a single performance; instead, it requires multiple performances by many performers across time and space (Reckwitz 2002b; Shove et al. 2012). These temporal patterns lead to further speculation that the respective theories describe different types of action that fit together, or link, in a causal or dependent fashion whereby epigenetic changes to bodies are reliant on,

and the result of, the performance of practices. As performances are repeated over time, bodies are continually shaped by and through practice in different ways in order to generate 'skilful performances' (Reckwitz 2002b, p. 251). These include mental patterns and corresponding bodily development of muscles, tissue, and bones consistent with theories of social practice on one hand, and biochemical or metabolic processes leading to epigenetic changes on the other.

Considering material changes to performers' bodies are central to both theories, it raises questions about how the body might be conceptualised in each, and whether correspondence, commensurability or compatibility should be expected (Kuhn 1982). In contrast to epigenetics, in theories of social practice, the body has a 'present-absent' practice status. It is clearly present in that bodies are the carriers of practice, essential for the continuing performance and persistence of the entity, and that practices are 'embodied' by their performers. The body is 'absent' in the way that its physical and sensory qualities are largely unrecognised or *dematerialised*. To further explicate this concept, it could be argued that in theories of social practice, human bodies are recognised as carriers, as contributing to the elements of meanings and skills or competence (Reckwitz 2002b; Shove et al. 2012) and as 'sites of embodied understanding' (Reckwitz 2002a, p. 212). However, how they might be conceptualised beyond this is unclear. In particular, there is no specificity or delineation as to what parts of the body might be implicated in certain practice performances. This is despite the trend to '[put] the body back into sociology' (Shilling 2003, p. 17). Reckwitz (2002a, p. 212) briefly acknowledges the body's materiality in this way:

> One can say that both the human bodies/minds and the artefacts provide 'requirements' or components necessary to a practice. Certain things act, so to speak, as 'resources' which enable and constrain the specificity of a practice.

However, in this instance, Reckwitz only refers in general to the body. There is clearly a bodily presence in Bourdieu's concept of 'habitus' (1984) as 'a system of dispositions' (Bourdieu 2005, p. 43), where habitus is considered both 'a medium and outcome of social practice' (Wainwright & Turner 2006, p. 240). Further recognition of the materiality of bodies is rarely mentioned in recent work. Perhaps the materiality of the body is largely insignificant to practices where the materiality of non-humans is often central. Alternatively, the range of practices studied to date largely concern energy and water consumption rather than health. Therefore the materiality of bodies has been less important; exceptions include Pink (2012; Pink & Leder Mackley 2014); and Wallenborn (2013; Wallenborn & Wilhite 2014)).

Concerning the health outcomes of practices, the central role of the body is paramount. Most practices have health implications, whether healthy or unhealthy (Blue et al. 2014; Maller 2015). Further, as NCDs and obesity arise from people-environment interactions (Patel et al. 2015; Roberto et al. 2015), there is an opportunity for theories of social practice to contribute to understanding and potentially intervene in these issues (Andrews et al. 2014; Blue et al. 2014; Maller 2015). Before proceeding, a brief review of some of the ways bodies could be further conceptualised in theories of social practice to foster links with epigenetics will be

helpful. As an obvious first step, the body and its parts could be considered material elements, depending on the practices at hand; secondly, bodies could be considered an 'assemblage'; and finally, they could be a 'boundary object' between the theories (Star & Griesemer 1989, p. 393). In what follows, I discuss these conceptualisations, and, in particular, the body as a material element.

That bodies rarely count in a physical sense as contributing to the material elements of practices is somewhat surprising as bodies—literally—can provide a number of possible materials to practices. These include energy in the form of physical strength, cellular and molecular processes, and substances of various kinds necessary for basic and higher order functioning. Furthermore, they are a substrate or repository for practices (Bourdieu 1984; Maller & Strengers 2014; Shove & Pantzar 2005; Wallenborn & Wilhite 2014). Bodies also offer a range of sensory capacities that enable practices. Pink and Leder Mackley (2014) propose that by not incorporating bodily perceptions and sensations, theories of practice are of limited value in understanding the processual nature of everyday life; that is, the senses, perception and movement implicated in daily activities. To account for this they redirect their empirical work to draw on ideas from sensory ethnography and Ingold's anthropology of the senses (Pink 2009; Pink & Leder Mackley 2014).

It can be said that some practices are more bodily than others, requiring greater bodily involvement, movement and skill; for example dancing or playing a sport compared to working at a desk or commuting to work. To do professional ballet, or indeed any sport or artistic performance, performers bodies must be 'fast, strong, supple and have impressive stamina' (Koutedakis and Sharp 1999 in Wainwright & Turner 2006, p. 242). In these types of performances bodies move in deliberated and precise ways, often the result of years of training from a young age, where movements are tightly coupled with the other practice elements (competences and meanings) (Shove et al. 2012; Wallenborn & Wilhite 2014). Another way bodies materially contribute to physically demanding practices is aesthetically, where the body must be shaped, sculpted, presented and tightly maintained through rigid routines of training and body-care to meet visual requirements and expectations (Wainwright & Turner 2006). The bodily requirements of these practices contrast with those around the home; domestic practices requiring skill and bodily involvement are less demanding in terms of corporeal precision, aesthetics and discipline.

In other practices, the body has a more biological role. For example, in pregnancy and childbirth, bodies contribute a large range of materials to the developing foetus including genetic information, proteins and blood. Whether bodily components of genes, fat or muscles will be relevant to a particular study depends on the line of inquiry, but these examples serve to highlight the fundamental material role bodies can play in practices.

In underplaying what the body offers materially, theories of social practice and their proponents have rarely considered the bodily impacts of practices in relation to health outcomes. Some practices shape bodies more profoundly in their effect on health. As I discuss in more detail below, recent evidence shows that due to epigenetic changes and nutritional exposure in-utero, obesity is now considered a heritable condition (Rhee et al.

2012; Skinner 2014). In relation to the aims of this chapter, there are also different time scales to consider, as practices have different bodily impacts in the moment of performance compared to the accumulated effects on the body of the performing over a lifetime. One example is smoking tobacco (or the practices that involve smoking it) where, in the performance of inhaling cigarette smoke, nicotine has an immediate effect on the body by releasing dopamine, while over the lifetime of the performer this can result in a number of detrimental changes, including lung cancer (Hatsukami et al. 2008). These examples show that bodies do not only provide vital materials to practices, without which they could not be performed (Wallenborn & Wilhite 2014), they are also systematically affected and made by them, sometimes in profoundly detrimental ways.

Another way to conceptualise the body relevant to theories of social practice and epigenetics is as a 'human-non-human assemblage' (Bennett 2010; Greenhough 2011) or an 'extended body' (Wallenborn 2013). Thinking of human bodies as assemblages is not a new idea (see Deleuze and Guattari (1987, p. 4) 'body without organs' (BWO), Greenhough (2011) and Fox (2011)); but it is worth briefly reflecting on this notion in the current context. Assemblages can take many and multiple forms, as summarised by Marcus and Saka (2006, p. 102)

> [An assemblage] can refer to a subjective state of cognition and experience of society and culture in movement from a recent past toward a near future (the temporal span of emergence); or it can refer to objective relations, a material, structure-like formation, a describable product of emergent social conditions, a configuration of relationships among diverse sites and things… And of course, if not explicitly delineated, *it can refer to all of these at once*. (Emphasis added)

The above definition reveals the multiplicity inherent in the nature of assemblages, which assists in considering how to link theories of social practice with epigenetics. In attempting to make this link, the body as an assemblage (a 'body *with* organs') differs from Deleuze and Guattari's (1987) intention to de-privilege or de-medicalise the body (Fox 2011; Greenhough 2011). It differs only slightly however, in the sense that the body and its parts and functions are accounted for without removing the 'sea of relations that may be physical, psychological or cultural' (Fox 2011, p. 360). This is similar to Wallenborn and Wilhite's (2014, p. 57) conception of the body in practices of energy consumption, 'where bodies are thus inserted into practices without subtracting any of the other relevant entities'. For example, the body as an assemblage might include muscles, genes, tissues and bones, together with the practice elements of meanings, materials and competences. Furthermore, there are vast numbers of microorganisms, which bodies' host (bacteria, viruses and parasites) as well as the things, objects, technologies or other materials required for the performance of a practice.

There is also recognition that objects and other organisms that permeate the body as part of a human-non-human assemblage have agency; in Bennett's (2010, pp. vii, xvi) terms they have a 'vital materiality' or 'thing power'. In the case of any practices related to the ingestion of materials such as food or drugs for example, these actors have a material presence in

practices in interacting with the body and create certain effects leading to varying health outcomes. As Bennett (2007, p. 137) argues in relation to fat:

> It is more likely that an emergent causality is at work: particular fats, acting in different ways in different bodies and with different intensities, even within the same body at different times, may produce patterns of effects but not in ways that are fully predictable—for a small change in the assemblage may issue in a significant disruption of the pattern. The agentic assemblage in which persons and fats are participants ought to be figured as a nonlinear system.

The same point applies to the vast number of microorganisms that enter or are already part of the body, as Turnbaugh et al. (2007, p. 804) observe, 'the microorganisms that live inside and on humans (known as the microbiota) are estimated to outnumber human somatic and germ cells by a factor of ten'. In concluding this brief summary, one of the most useful aspects of thinking in 'assemblages' is that boundaries are immediately called into question; not only boundaries between organisms, but between bodily parts and their components. This type of conceptualisation allows for thinking about permeability and unsettles the illusion that human bodies—and practices—have fixed or discrete edges in the world, unconnected to life, matter and action around them (Bennett 2010).

A third, and, perhaps, a more straightforward way the body could be reconciled between the two theories, is as a 'boundary object' (Star & Griesemer 1989). Star and Griesemer (1989, p. 393) define boundary objects as those:

> Which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites…They have different meanings in different social worlds but their structure is common enough to more than one world to make them … a means of translation.

Although human bodies are not necessarily what the authors had in mind when devising the term, it works in relation to linking epigenetics and social practices. The discussion on assemblages above, and on performance and materiality before that, described the multiple ways practices implicate and transform the body. These transformations have varying health outcomes, some of which epigenetics can explain. In seeking ways to link the theories, it appears that the body and its transformations is where they intersect; yet fortunately, neither sees individual human bodies as the unit of analysis. This suggests that in the case of theories of social practice and epigenetics there is enough 'overlapping coin' to argue for connecting these two different social worlds (Star & Griesemer 1989, p. 413).

This section has reviewed three ways bodies could be thought of as commensurate with theories of social practice and epigenetics— as a material, as an assemblage or a boundary object. It could be all or any of these conceptualisations. It is not the aim of this chapter to provide a definitive answer about the role of the body. Rather, these ideas are presented for future discussion, elaboration and exploration. In epigenetics, the body and its materiality play a central role. In fact, the body is scrutinised and quantified from its phenotypic state

right down to its molecular processes and genetic material. In theories of social practice, the body's role is less clear, leaving room for more detailed investigation and definition, which this chapter initiates.

Interestingly, congruent with both theories, as discussed at the beginning of this section, is that body-environment interactions are the central focus, but bodies are not the unit of analysis in either theories. In considering changes to practice entities (in theories of social practice) or gene expression (in epigenetics), it is bodies (phenotypes) that modify in space and time. What appears to make sense in terms of health to both epigenetics and theories of social practice is that bodies are the medium or pathway through which change happens. To explain this idea in more detail, it is useful to provide an example.

Obesity seen through the combined lens of epigenetics and social practices

Obesity is a complex, contested and moralised condition that is a classic outcome of human-environment interactions. It cannot be explained by environment or genes alone, but instead is the product of interactions between the two (Rhee et al. 2012). In obese[2] people, fat deposits are said to be the result of 'an imbalance between energy intake and expenditure', attributable to the availability of high calorific foods and a lack of physical activity (Milagro et al. 2013, p. 783). Multiple genes have been associated with obesity such that there is a 'human obesity gene map'; however, the main contributors are environmental, including lifestyle, food consumption, levels of physical activity and sleeping patterns (Patel et al. 2015, p. 430). Hence, the causes of obesity are not as simple as an energy-in/energy-out equation. As Patel et al. (2015, p. 451) explain:

> Research suggests that inherited genetic factors under the influence of environmental signals determine susceptibility of individuals to developing obesity and associated complications.

What is clear is that from an epigenetic perspective, obesity arises from a range of environmental conditions or exposures (Milagro et al. 2013; Patel et al. 2015; Rhee et al. 2012). As mentioned earlier, environmental exposures associated with epigenetic changes to bodies are often material (Skinner 2014; Tammen et al. 2013). Of relevance to obesity, these materials are likely to include food, alcohol and other drinks or substances consumed by the body.

From a practice perspective, having a body labelled as obese could be described as the outcome of recruitment to certain practices and not others. Evidently, like genes, a single practice cannot explain obesity. Shove et al. (2012, p. 111), referencing Evans' (2006, p. 261) critique of obesity policy and research, states that 'the concept of obesity brings *multiple*

[2] 'According to medical convention, overweight and obesity are defined on the basis of body mass index (BMI), which is calculated by dividing weight (in kilograms) by height squared (in meters).The BMI of healthy, overweight, and obese individuals is defined as 18.5 to <25, 25–29.9, and ≥30kg/m2, respectively' (Patel et al. 2015, p. 430).

practices together in its moralising fold' (emphasis added). Hence, taking a practice-centred approach, obesity is the outcome of recruitment to a set of practices, bundles or complexes (Shove et al. 2012). These might include formulations or arrangements of shopping, cooking, eating, food provision, exercise, socialising or commuting to work; or in other words the 'disparate practices' of everyday life (Shove et al. 2012 p.110).

Recent work in epigenetics has discovered that some epigenetic changes pass from one generation to another. This means past human-environment interactions—or practices—persist over time, not only affecting the lives of people in one generation, but as inherited by successive generations under certain conditions (Skinner 2014). Epigenetic inheritance has found to be at work in obesity whereby practices of pregnant mothers result in epigenetic changes affecting descendants in adult life (Rhee et al. 2012; Skinner 2014). For example, epigenetic mechanisms affecting genes regulating glucose, insulin-responsiveness and appetite can result in changes to the mother's phenotype as well as her adult children (Patel et al. 2015). It seems early developmental periods 'during which the epigenetic code is partially removed or reset, are vital' (Patel et al. 2015, p. 446).

First suggested in earlier work on practice memory (Maller & Strengers 2014), the logic of epigenetic changes and how human-environment actions imprint the body is interesting from a social practice perspective when contemplating recruitment and the trajectories or careers of practices and their practitioners. It is highly likely practices leave epigenetic imprints, inherited by future generations. If so, this raises the possibility that epigenetic mechanisms are a new form of recruitment to practices. Considering current work in epigenetics is contemplating how health conditions as well other human capabilities such as artistic talent might be inherited (Karlic & Baurek 2011; Shenk 2011), this conjecture is reasonable. The question is how. One way to contemplate how practices might be heritable via epigenetics is to think in terms of an simplistic sequence of actions and accompanying changes to bodies (note, this is not necessary a linear process, but is represented as such for the purposes of illustration) (Figure 1).

According to Figure 1, the usual processes recruit a practitioner to a practice. Their body trains in a certain way, assuming sufficient repetition of performances. Epigenetic processes then take place, changing the expression of genes and the practitioner's phenotype. These changes remain in the body and are passed onto the next generation of practitioners, whom the practice in various ways, *genetically* recruits.[3]

[3] It is important to stress, that genetic recruitment not another form of genetic determinism; a key feature of epigenetics is the plasticity of effects that arise from certain environmental exposures i.e. humans are *not* hardwired by their genes (Bird 2007).

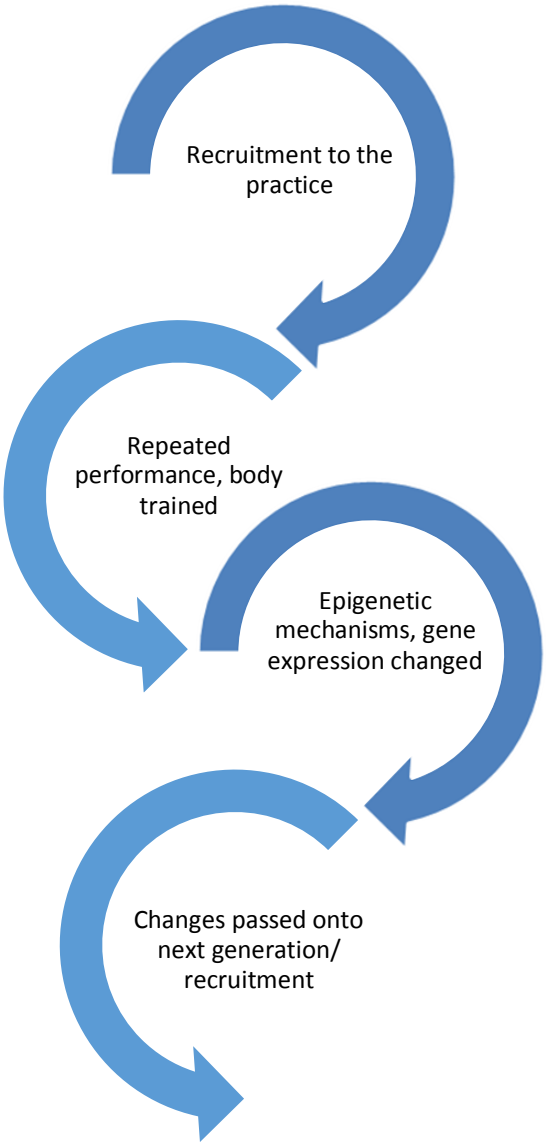

Figure 1: Sequence depicting how theories of social practice link with epigenetics and the heritable nature of changes to bodies over time

There is no denying this process is conjectural, but considering recent developments in epigenetics, it is not implausible. One point of contention is whether the epigenetic changes involved are associated with changes in practices or only affect physical appearance or biological functioning. As many authors concur, much work remains to understand the interplay of environment and genes as expressed through epigenetic means, particularly in regard to humans (Patel et al. 2015; Rhee et al. 2012; Tammen et al. 2013). Tammen et al. (2013, p. 761) note:

> Compared to animal models, humans are exposed to a much higher variety of environmental factors that may also interact with genes. Thus it is not an easy task for researchers to infer the epigenetic effects of particular environmental exposure in humans.

Nevertheless, what Figure 1 shows is that combining theories of social practice and epigenetics can reconceptualise how obesity, and other 'lifestyle diseases', are understood

and intervened in. The following section explores what the implication of the process might offer interventions to improve, or at least better understand diseased blamed on lifestyle.

Intervening in lifestyle diseases: a social practice-epigenetic perspective

It is clear that global deaths and illnesses said to arise from lifestyle are escalating in a trajectory unlikely to shift in the short term. In order to correct this trend, there is a need to reconceptualise how such conditions arise, focusing on new understandings of health and disease from the latest thinking in both the natural and social sciences. In the natural sciences, epigenetics is emerging at the forefront of innovation, in particular in regard to obesity. In the social sciences, theories of social practice are beginning to make a similar impact in analysing a range of health and wellbeing outcomes. In bringing these two fields together, this chapter postulates alternative ways to intervene. The timing is ideal as there is growing recognition in public health and health promotion in particular that prior approaches have not delivered desired outcomes. For example, Roberto et al. (2015, p. 2401) examine the 'false dichotomy that obesity is driven by either personal choice or the environment' and instead suggest 'these two competing perspectives be merged to show the reciprocal relationship'.

The first contribution from a combined practice-epigenetics perspective is the problematisation of lifestyle diseases. The main point is that individuals perform practices, but are not the unit of analysis. Instead, health problems arise from *practice-gene-environment* interactions through practice performance. In carrying out or performing practices, practitioners (individuals) are exposed to (and ostensibly create) a number of environmental conditions that make and remake bodies, results in varying states of health or disease. Therefore, interventions must target the practice, not the performer (Blue et al. 2014; Maller 2015; Shove et al. 2012; Spurling et al. 2013; Strengers & Maller 2014).

There are four other components to the problem from this perspective, consistent with other work based on theories of social practice (e.g., Strengers and Maller (2014). These are: 1) practices are intricately linked to other practices through bundles and complexes and do not exist in a vacuum. 2) The body and its parts count as material elements that are made and remade through performance and bodily processes and mechanisms, including epigenetic means. 3) There is more than just the agency of human bodies involved in practices, such that other various materials, objects, technologies and organisms also have agency. 4) Practices are inheritable such that those performed in one generation can pass to the next, changing ideas about recruitment, health outcomes, and disease aetiology. These contributions inherently involve thinking beyond individual humans and their 'lifestyle choices' said to result in health or ill-health (Blue et al. 2014; Maller 2015). As Fox (2011, p. 360) writes, 'Ill-health is too quickly accepted as an attribute of an individual body, rather than a wider, ecological phenomenon of body organisation and deployment within social and natural fields.'

Although bodies are not the entity of study, they are the medium or pathway through which change happens and health outcomes are realised, and not the target of intervention. In thinking about how to intervene in lifestyle diseases, the starting point from a practice-

epigenetic stance is to identify and attempt to change the *practice entity*, its elements and related bundles and complexes (Schatzki 2014; Shove et al. 2012). Blue et al. (2014) and Maller (2015) have usefully introduced types of health interventions using a social practice framework. I expand these types of interventions below, with a practice-epigenetic twist. The approach resembles Wallenborn's (2013, p. 149) argument for a 'practice perspective combined with a body-centred analysis.' However proceeding, it is noted that:

> Whilst a turn to practice makes great strides in overcoming critical, problematic dichotomies between individuals and social structures, rational actions and habits, it does not generate simple guidelines for intervention (Blue et al. 2014, p. 11).

This difficultly can be explained by the emergent nature of practice phenomena (Shove et al. 2012), and their 'ceaseless movement and incessant rearrangement' (Schatzki 2002, p. 189)—or the 'uneven front of change' (Schatzki 2014, p. 17), presenting a challenge to attempts at control. Another point concerning interventions is that there are many opportunities to leverage off existing efforts (Blue et al. 2014). However, these are reframed, repositioned and based on different starting points; that of the practice entity rather than the usual dichotomous framing of the problematic behaviour of individuals or the barriers created by external structures (Blue et al. 2014; Shove et al. 2012; Strengers & Maller 2014).

Like all intervening approaches based on a practice-centred view, the focus should be directed at practices that comprise everyday life. These include seemingly innocuous ways of going about everyday doings, so habituated they almost become invisible, or, at the very least, unremarkable. Epigenetics is demonstrating the profound impact of the practices of parents and grandparents on the health of future generations 'pervad[ing] all aspects of development' (Keverne & Curley 2008, p. 398). From the outset, it implies that forward-looking interventions seeking to influence the health of future populations should first look to the practices of the current (and possibly previous) generation/s. This implies that practice-based interventions also need to take a long-term view, often already recognised (e.g. Schatzki 2014; Spurling & McMeekin 2014). The importance of maternal health and early childhood development is accounted for in a range of public health intervention efforts, particularly those aimed at reducing multigenerational health inequities (Klawetter 2014). From a practice-epigenetic point of view, this serves to highlight the importance of childhood and interventions in practices associated with pregnancy, maternal health and child-rearing. Work using theories of social practice has to date not yet ventured into childhood or childrearing, and it therefore represents an area where practice thinking augers well for the future.

Aside from this, the key strategy to change health outcomes from a practice-epigenetic perspective is to intervene in practice elements of meanings, materials and competence, and orchestrate the making and breaking of links that sustain the practice, as well as those between practice bundles and complexes (Blue et al. 2014; Shove et al. 2012; Spurling & McMeekin 2014). Elements are usually not unique to single practices, so intervening in one or more elements may affect more than one practice, or bundle of practices. This move has been recommended by others (e.g. Blue et al. 2014; Shove et al. 2012). From a practice-

epigenetic viewpoint, however, it could take on a different flavour by the intervention in new, or to date unrecognised material elements, such as genes, cells and molecules implicated in epigenetic modifications. For example, the control of fat as a material element in practices resulting in obesity could be implemented through coordinated efforts at intervening, including: changes to diet and food consumption by developing competency in preparing low-fat meals (resulting in changes in gut flora and microbiota); changes to the meanings of meals in relation to size and content; policies to reduce the availability of fatty and sugary foods and drinks; and medical or surgical interventions, such as bariatric (lap band or gastric) surgery. The latter has shown to be effective in circumventing epigenetic changes that result in the birth of overweight children (Rhee et al. 2012). Of course, these interventions are not particularly new ideas, however from a practice-epigenetic perspective, the difference is to recognise and capitalise on where and how these attempts intervene in *practices* (or their elements) and to therefore better coordinate and systematise what are usually treated as separate or independent interventions, targeted at individuals and their behaviour. In Spurling and McMeekin's (2014, p. 79) words 'intervention should not be viewed as "external" or "one-off" but as continuous and reflexive, historical and cumulative.'

Turning to performance, targeting the recruitment and defection of practitioners from practices is another way to intervene. A practice-epigenetic take on this would involve consideration of the heritability of practices and take a multigenerational perspective, as suggested elsewhere (Maller & Strengers 2014). This may involve exploration of potentially controversial recruitment means through epigenetic mechanisms explained earlier, or it may involve other interventions aimed at recruiting and training new practitioners. In addition, focusing on childhood and the development or 'training' of practitioners, interventions to improve health and lifestyle would begin with children to create lasting imprints and practice memories (Maller & Strengers 2014). In public health, childhood is already recognised as a key part of the life course in creating healthy outcomes, as established by the social determinants of health literature (see Wilkinson & Marmot 2003).

Finally, in intervening in lifestyle diseases with a practice-epigenetic outlook, effort would be directed towards monitoring and responding to shifts in practices (Blue et al. 2014). As Schatzki (2014, p. 17) observes, 'changes of all kinds constantly befall practices, arrangements and bundles, which undergo halting, irregular, not necessarily infrequent, and sometimes rapid development.' This would include responses to interventions aimed at redirecting practice trajectories, as well as other emergent changes arising from the inherently dynamic nature of social practices and practice-gene-environment interactions. For example, long-term monitoring of practices and epigenetic variations across generations as programs and policies are introduced or modified. All policies and interventions regardless of intentions will affect the emergence, persistence and disappearance of practices (Shove 2014), implying that interventions are an ongoing phenomena in addition to being practices in themselves.

Conclusion

This chapter has two aims: explore the territory between theories of social practice and epigenetics, in particular the effects of practices on performers' bodies, and consider what this thinking might offer health interventions. In undertaking this theoretical exploration, it discussed differences in the units of analysis and conceptualisations of the body as possible points of tension, but found these able to be reconciled between the two theories. A main point of intersection is that neither social practice nor epigenetics see the human body as the unit of analysis. Instead, in epigenetics it is the gene (or the processes that change its expression) that are of interest; and in theories of social practice, it is the practice in relation to performance and the entity. However, both recognise the body as a medium or substrate of change.

A useful outcome of these explorations is the considered effects of practices on practitioners' bodies at a very detailed level, both in the moment of performance and over one (or more) lifetimes. These explorations are valuable in understanding complex health issues involving human-environment interactions, using the example of obesity. Furthermore, they have potentially opened up new frontiers in health promotion, health education and medicine. In particular, there is an opportunity for theories of social practice, drawing on a practice-epigenetic stance, to venture into the practices of childhood and child rearing. There is a strong case for this move, considering the importance of early childhood development in all aspects of health and wellbeing. Furthermore, interventions based on ideas of recruitment, training and heritability generated through practice-epigenetics thinking have the potential to shift the current burden of disease into more equitable and healthier directions; although the timeframes will necessarily be long-term, over several generations.

Empirical work studying theories of social practice and epigenetics would no doubt be a challenging endeavour, but is worth consideration in the face of the scale and global impact of diseases now attributed to lifestyles. A final implication of linking theories of social practice to epigenetics arising from the potential heritability of practices is that it calls into question the idea that most lifestyle diseases are non-communicable, or unable to be passed from person to person. Considering obesity has been found to be heritable, it paves the way for future investigation into the heritability of other diseases and forms of ill-health currently in the NCD category.

Although there appears to be a rich body of work developing in epigenetics that will have profound implications for future work on lifestyles, there is acknowledgement more work needs to be done, in particular to understand the underlying molecular mechanisms in human epigenetic dynamics. These concerns aside, according to Bird (2007, p. 396), epigenetics has 'caught the general imagination' and there are no signs the enthusiasm it has generated will slow down any time soon. As Dawkins ventured forth a new gene-centred view of evolution in his classic 1970s text 'The Selfish Gene', perhaps the future will see a gene-centred view of social practices? Time will tell.

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(first draft; translated by Robert Mitchell)

Learning in Practices. Enablement in-between Self-Making and Subjectivation

I Introduction

Practice theories have a vested interest in studying how social order emerges in and via the interplay of things, artefacts, and bodies. However, they barely reflect upon how the participants in the order-making get to be or, indeed, put themselves in the position to be able to participate in this interplay and become competent 'players'* in praxis** in the first place.[1] One reason for this oversight is, from our perspective, that practice theoretical discussion still mostly operates within the framework of familiar alternatives, namely whether social structures constitute and, thus, presuppose social action and its actors or whether the structures are presupposed by activities within the bounds of preformed individuality or agency. Accordingly, two perspectives can be differentiated – albeit with some simplification –, which are characterised by their proposed relationship between their conception of praxis and the status of social actors: If praxis is seen as pre-structured, then actors receive the status of mere dependent variables keeping this routinized action 'going.' If, in contrast, praxis is conceived as a contingent accomplishment, then the model of an (autonomous) actor tends to be brought to bear, these actors, for their part, possessing a store of practical knowledge, enabling them to deal with the contingency of practice in a skilful and creative manner. All these differences notwithstanding, the perspectives have a common denominator in that they both pay very little attention to how play-ability*** arises. Furthermore, within the framework of their respective conceptions of praxis, the participants are presupposed in one way or another as pretty much 'play-able' out of the box, so to speak, be it either as executive organs or as the focus of social action.

Here, we wish to contrast these two extreme perspectives with an approach that aims to reconstruct praxeologically how play-ability arises. This we do in accordance with our diagnosis that practice theories require a theory of learning if they are to resolve the issue of both how practices are transmitted and reproduced and how they are situatively accomplished. We conceive 'learning' specifically – and in contrast to mere repetitive training – as a process inherently embedded in praxis within which the ability is continually being formed to orient one's own action intelligently towards practice specific requirements; this can also entail the critique and transcendence of these requirements. The prerequisite of this ability's formation is *recognition* from other participants: the

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1 Play-ability proves itself in this relational perspective not to be an attribute of individuals, but rather to be formed within the framework of 'distributed agency' (Rammert/ Schulz-Schaeffer 2002): things, artefacts, and bodies mutually enable one another in their play-ability and, by doing so, bring forth a specific 'practical reflexivity' (Bourdieu 2002: 59). In this context, it is prudent to differentiate different forms and levels of agency and, thus, play-ability since not all participants are equally capable of self-organisation in a practice. For instance, people are, potentially, capable of adapting to changing situations and of actively positioning themselves within unfolding events in contrast to simple tools or objects, in which only specific usage possibilities are objectified.

participants reciprocally ‘make’ themselves into competent players and become, thus, (re-)cognizable as subjects for one another. Our focus is on the matter of how human participants side-by-side with non-human participants reciprocally take part and take shape as competent players in situated practices and, in this context, enable one another to deal with the uncertainty, ambiguity, and imponderability of every practice. In this context, we utilize the processual category *enablement*[****] as it expresses, on the one hand, that participants only become carriers of specific abilities through their participation in practices. On the other hand, it connotes that the status of a competent participatory subject is dependent upon reciprocal acts of recognition, in which normative expectations assert themselves. Thus, we suggest a conception of learning as a triad consisting of self-making, enablement, and subjectivation in order to incorporate the ambivalence of activity alongside passivity, adaptation and defiance, routine and reflexivity, all involved in the formation of play-ability.

If play-ability, on the one hand, requires specific dispositions for participation and, on the other, arises in and through interactions in praxis, then the question presents itself of how the ability of self-organisation can be formed in praxis. Our suggestion is to view the formation of this specific type of play-ability as the emergence of ‘partially autonomous’ subjectivity. Conceived thus, the formation of play-ability can be understood as learning self-making in the sense that participants via their participation in practices become the practices’ specifically enabled players (subjects). Thus, learning can be seen as a process of self-making and subjectivation whose origin is to be found in the contingent accomplishment of praxis: each individual is enabled (and enables themselves) to learn, to orientate oneself from their perspective in line with the expectations and requirements of a practice, to position oneself within the order of the respective practice. Since, however, this process only creates provisional frameworks for interpretation and evaluation of cooperative action, the ensuing social order is also constantly subject to change and can be put up for discussion or completely rejected: the participants engage each other in the game and, thus, simultaneously are perpetually calling the game into existence (Alkemeyer/ Buschmann/ Michaeler 2015).

By conceiving the unfolding of practices and the learning formation of subjectivity as a co-constitutive relationship, we attempt to do justice to the ultimate, and not yet fulfilled aim of practice theories of disposing with the traditional contrast of methodological holism and methodological individualism. In pursuit of this aim, practice theories must take an interest especially in the following questions: first, who are the possible ‘candidates’ who can be engaged by a practice and engage themselves in a practice (Goffman 2009: 52pp.); second, how do these candidates form themselves via their engagement as recognizable players and, within this process, further develop their play-ability; and, third, how do they, for their part, contribute to the (both reproductive and transformative) formation of the practice in which they are participating as players. In sum, how can the emergence of play-ability within the framework of the practice theoretical paradigm be described without succumbing to the old habits of either attributing deterministic power to practices over the activities of their participants or, vice versa, presupposing a fully formed, ready-for-action actor?

II Practice Theories and Learning

With this line of questioning, we are entering a research field which is usually synonymous with terms such as learning or education. Within the ‘family’ of practice

theories, this research field is most notably cultivated with the concepts of socialization, habitualization, and embodiment. These concepts have the advantage of bringing, oftentimes neglected bodily, prereflexive, and nonlinguistic processes to the fore; they, thus, avoid the reduction of learning and education to cognitive processes and the acquisition of propositional knowledge. However, they portray the participants mostly in the light of passive embodied receptacles of practice-specific stores of knowledge. In the view of these approaches, practices are conceived as 'entities,' which "recruit" their participants (Shove et al. 2012: 63-79) and, thus, transforms them into an acting subject by 'incorporating' (Schmidt 2012: 70) their bodies. By assuming a fit between field- and practice-specific orders and participatory competences, they focus primarily on what participants have to (be able) to do for practices to follow their routine course. To put it succinctly: the position that teachers hitherto occupied in mechanistic theories of learning has been filled in these approaches by practices, which teach individuals practical know-how and, thus, make them into their players. Taken as such, learning appears foremost as adaptation to the status quo so that the issue of the acquisition and the constant (re-)creation of play-ability in praxis never becomes pertinent (Nicolini 2012: 78).

This neglect of issues pertaining to learning in the currently most discussed practice theoretical approaches in sociology (Schatzki, Reckwitz, Foucault, Butler etc.)[2] is not lastly connected to a preference of considering how practices succeed and a bias towards connections and sequences that 'fit together.' However, the metaphor of a successful 'choreography,' within which all the participants' actions interlock frictionlessly is an artefact of observation. It owes its existence to the overview inherent to a "theatrical perspective" (Bourdieu) on the social world, within which it remains inherently invisible and behind the scenes, as it were, how this world presents itself to the participants in its concrete situative constellations (Alkemeyer/Buschmann 2015). As a consequence of this perspective, these approaches neglect, *firstly*, the multitude of differentiations, which inherently present themselves, due to the principal uncertainty of practical accomplishments, with regard to the requirements for engaged participation. In the flow of activity, the participants are required to always be able to adjust to the necessities and possibilities of praxis in the moment – even in the case that this contingency, e. g., in bureaucratic organisations is minimized as much as possible via a clear (hierarchical) distribution of roles, tasks, and functions: in situ, openings constantly present themselves, which must be filled ad hoc by participants (Hatch 1999), and there is always a "potential of the situation" (Jullien 1989) for the transformative intervention of individual and collective actors requiring specific competences. *Secondly*, these approaches overlook that learning requires activity on the part of the participants who must be amenable to being taken in by the practice and engaging themselves therein. By extrapolating from practice-specific orders to participatory competences, they learn very little about how participants mindfully, actively, and purposefully partake in their formation as players of a practice (Brümmer 2015: 72). Thirdly and relatedly, the status of artefacts also appears in a different light here. Normally, they are viewed within practice theoretical debate either as 'proposals for being' whose potential can only be fulfilled in the successful practical connection with other agents, or they appear as (already and always extant) objectivations of practical knowledge, stabilizing practices beyond the limits of a singular situation. However, the verily important finding that things as warrants of their usage 'thicken' the contingency of practical accomplishments

2 In contrast, action theory, pragmatic, and activity theory traditions have played a less prominent part in these discussions (cp. Nicolini 2012; Alkemeyer/ Schürmann/ Volbers 2015).

(Schmidt 2012: 55), should not hide the trouble and resistance which emanate in situ both from the artefacts themselves as well as from embodied habits. Their potential for being troublesome is founded both in their material resistance as well as their direct – even though this is always socially communicated and context-specific – "affordance" (Gibson 1979) with which they evoke not only a certain practical usage, but also emotions and associations, which can stem from other contexts (Prinz 2014; Massumi 2010). In that things and artefacts are objectivations of human history, the practical confrontation with them is to an extent always self-confrontation, which goes beyond their function as warrants of usage. Thus, which affordances artefacts invoke within learning processes and to what extent they become objects therein which present and deliver practice-specific knowledge, cannot be ascertained at the outset, but rather is an empirical matter which must be investigated in each socio-material constellation (Kalthoff/ Rieger-Ladich/Alkemeyer 2015: 22-26).

These aspects, which tend to elude practice theories, are, however, much more strongly represented in pragmatic and interactionist traditions of practice theoretical thinking and in approaches, in which – as in (post-)Marxist theory or the practice theory from Boltanski and Thévenot – the multipositionality, multiperspectivity, and power asymmetry of praxis is emphasized and, thus, evoking more strongly the instability of practices. The focus of these approaches is then shifted towards the conflictual processual construction of social order. Praxis is not conceived of as a unit in the sense of a regular and continual sequence of events that recruits its participants, but rather as a contingent on-going accomplishment: a cooperative creation in the here and now. Consequentially, these approaches are concerned with making empirically visible the diverse methods, strategies, competences, activities, and activity forms utilized for the practical creation of a specific intelligible social reality (Garfinkel 1967; Nicolini 2012: 134-161). Attention is, thus, shifted to the participants' coping strategies, their coordination attempts, their decision-making and acts of creativity. The pendant to the 'flow' of praxis is the constitutive improvisation of participatory subjects, from whose perspective the practical accomplishment-in-the-moment appears as a never completely predictable sequence of situations, which are characterized by concrete space-time constellations of bodies and things specifically relevant to what one is doing. Every one of these situations confronts the participants with a specific task, requires of them concentration, readiness, attention, and responsiveness. Thus, the imperative necessity of learning only becomes visible when, through a reconstruction of the disparate participants' perspectives, the oftentimes conflictual demands and requirements, which put the participants under pressure to act and with which they are confronted in concrete situations, are taken into consideration: learning is required in order to be able to deal with conflicts, ambivalence, and uncertainty.

Only in the case that, alongside the prefiguration and structuration of praxis through rules, material arrangements, objects, and systems of 'human differentiation' (e. g., us/them, male/female, etc.; Hirschauer 2014), also its open-endedness, fragility, and unpredictability are taken into account (Alkemeyer/Buschmann 2015), only then do the bodily, mental, and cognitive resources, competences, and efforts come into view, which the supposed 'recruits' must bring to bear in the situative accomplishment of all practices (Barnes 2001; Brümmer/Mitchell 2014: 159p.). This even applies when the diverse 'elements' of a practice seem for all appearances to harmonize in a routine manner as appears to be the case when soldiers march in formation: what may appear from the top-down theatrical perspective as a "continuity of form" (Giddens 1979: 216), becomes tangible from the participant's perspective as an uncertain string of events in

which every single soldier must invest their own effort – e. g., in their breathing (Lande 2007) – in order to be 'recruited' by the practice of marching in the first place and to be able to contribute to the formation of a collective body (Brümmer/ Mitchell 2014: 159p.). Each individual must, thus, first learn to fit themselves in a self-organized manner into the order of such a collective body and to maintain this state.

Thus, a praxeology of learning cannot stop at viewing the emergence of play-ability as a mere fitting into an extant order, nor should it succumb to the individualistic myopia of reducing learning to an internal process within solipsistic individuals. Rather, it must attend to the reciprocal production of social order and play-ability, which can only be successful if there are participatory candidates who are ready and willing to be engaged and engage themselves in praxis physically, mentally, and emotionally. Only then does it become plausible how skills are acquired and made available via the participation in practices, allowing participants not only to make a routine contribution to the workings of a practice, but, moreover, to intervene creatively in events, to cooperatively shape them, and to find (new) meaning therein. Accordingly, the approach presented here emphasizes that it is the participants who produce the regularity of the social in praxis as an empirically concrete structuration (Bourdieu 1979: 184) and, in doing so, undergo a transformation themselves, enabling them to competently participate in the practice in a process of learning self-structuration: they appear through their active engagement in practices as carriers of specific competences by adopting practices' demands and by being enabled via the interplay with other participants to not only (automatically) reproduce the social order, but also, and if need be, to modify it (reflectively) and to (critically) transcend it[3].

At this intermediate juncture, we can summarize that with our approach we emphasize the fundamental heteronomy of the acquisition of participatory competences and we stress that participatory candidates reciprocally make themselves through reciprocal addressings, i. e., interactively, into players by equipping themselves with situational possibilities of action and, at the same time, delimiting them. Thus, to be enabled means both to be put as well as putting oneself in the position to fulfil the requirements of a practice. By establishing specific contexts, expectations, and requirements interactively, participants' acts become (re-)cognizable as competent or incompetent actions. Conversely, participatory candidates only become 'activated' and are engaged in events as players when they can identify a comprehendible frame of reference, which speaks to their "sens pratique" (Bourdieu 1987) and their previous experience. Thus, learning comes into view as a process encompassing both active and passive elements, as a process both opening up new realms of possibility, but also entailing moments of resistance and limitations, making it necessary to find new or different forms of organisation within the relations of praxis, i. e., requiring further learning. Hence, learning self-making proves in our perspective to be an ultimately interminable process characterized by power relations, standardization, friction, and conflicts, to which practical critique, resistance, and defiance also firmly belong. However, instead of assuming that this enablement is a quality of pre-practically extant subjects, a practice theoretical perspective must aim to reconstruct how such agency is formed in praxis and is brought to bear performatively.

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3 Thus, critique comes into view as a component of all practices. Its consequences are empirically open-ended, but it is always transformative in praxis: even in the case that a practice, which has become precarious, is stabilized by adapting elements of the critique, this still means that a transformation has taken place.

III Learning as a Precondition and Form of Social Membership

By understanding learning as a process of self-making within the participation in practices which is inherent in the formation of play-ability and, thus, is always taking place, it becomes no longer sufficient to study the transfer of propositional knowledge in societally cordoned-off areas of learning and teaching. Rather, learning knows no bounds: it is both in explicitly educational forms of drills, exercises, and trainings as well as in 'structure exercises' such as games, rituals, or competitions and even in the 'implicit pedagogy' of everyday life (Bourdieu 1979). Thus, learning is neither reducible to a purely mental process nor is it limited to the space within the walls of educational institutions. Instead of this segregation of learning from practices, to which it pertains, all situations should be taken into account, in which people and things (inter-)act together (Barnes 2001: 25).[4]

This is also the main idea behind the concept of *situated learning* (Lave/Wenger 1991), which aims to avoid any form of reification of learning as a self-contained activity. Thus, learning is divided from its exclusive connection with explicit pedagogical intent insofar as it is not identified as a top-down process driven by experts, but is interactive, allowing for a variation of positions which participants can occupy with regard to the respective activity and the other participants. Learning is not reduced to the mere acquisition of new competences, but is a process of participation in practices, within which alongside specific (practical) *knowledge* also *identity* and *social membership* is formed. Thus, learning and social membership are co-dependent: Learning is a precondition as well as a (nascent) form of membership in the sense of agency in practices.[5] It requires involvement and contributes simultaneously to the development and transformation of a practice. Therefore, learning processes do not just merely stand in a matching relationship with participatory competences, on the one hand, and with practice-specific competences, on the other, but can themselves transform what is being learned.

In this view, learning is located in interactions of praxis which introduce novices to the participation in collectively shared knowledge, which, however, is being simultaneously created in these self-same interactions. Within an interplay of socializing acts, they learn by taking the perspective of the senior members to constantly correct themselves, to recognize rooms to manoeuvre in, and, thus, to keep themselves within the order at

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4 In turn, explicit learning could be studied as a type of practices, in which specific subjects of learning are formed. Then the question would be how this form of learning relates to the practices or contexts which are supposed to be learned or for which the learning aims to prepare.

5 This membership already reveals itself in a direct sensory manner through 'social motor skills' (Gebauer 1998) in the sense of a 'family resemblance' (Wittgenstein) of movements and gestures shaped through learning. This is observable in diverse practical communities: in skilled trades, sports teams (e. g., Brümmer 2015), classes in schools (Alkemeyer 2006; Pille 2013), families, etc. The shaping of these motor skills always involves objects. Georg Simmel (1910) describes this, e. g., with regard to the 'sociology of the meal': the usage of spoons, knives, and forks, historically emerging in the upper classes, leads to a social standardization, codification, and regulation of the body's movements, a fixation of 'eating habits' (ibid.: 188). By adapting their movements to the cutlery and, simultaneously, slipping into a social form with a certain aesthetic value, the eaters become more and more similar in their stance and gestures: they form a sensorially recognizable communality, which would not have come to pass with eating with one's fingers because the 'supraindividual regulation' (ibid.) on the part of the cutlery would have been missing. Such an embodiment of membership is especially noticeable when individual participants deviate from the social motor skills.

hand. They learn not only from designated instructors – as theories seem to imply, equating learning with being (explicitly) instructed[6] –, but rather also from other participants, including other novices: *All* participants teach themselves and each other specific knowledge in the interactive unfolding of praxis and, thus, come into view as players. They reciprocally socialize each other, converging on a collective practice, and, in doing so, gain a specific position within the respective collective, which itself is constituted as a *community of practice* (Wenger 1998) within this process.

Learning is, in this view, also a socially structured process of positioning, equipping participants with different resources and possibilities to participate. Thus, it always takes place in historical contexts shaped by power relations (Nicolini 2012: 79): both the historical and social structure of a practice as well as power relations, which define a specific regime of participation, determine the possibilities of learning and the learning trajectories of novices. Since every practice provides for different social positions, which come with their own amount of power and influence, the responsibility for the 'product' is, in accordance with the participatory position, distributed and attributed differently. This allows for an understanding of why learning is associated with conflicts: The established members of a community of practice are forced to impart novices with some of their knowledge; they must, however, keep part of it for themselves, if they are to maintain their position of power. The novices, on the other hand, are looking for possibilities to do things differently and innovatively in order to gain some autonomy and claim some originality for themselves. Conceived in this way, learning is not only the (passive) repetition of the already extant, but rather proves to be an (active) negotiation of interests, interpretations, and knowledge, which contains moments of critical reflexivity with regard to practice-specific requirements.

Lave and Wenger's interactionist approach brings to light, *firstly*, how learning actually takes place practically, how techniques, knowledge, and know-how are passed on between generations. Partaking in socially dispersed knowledge, thus, arises through the participation in a community of practitioners and knowledge which is constituted through the interactions between novices and more established members. *Second*, Lave and Wenger point out that the passing on of knowledge involves conflicts, the setting up of boundaries of and divisions between memberships, and the 'attribution' of identities within power relations. This makes apparent that the development of competent participation is inherently connected with the reproduction and transformation of the social structures, in which the learning processes are located. *Third* and lastly, the authors refer to the circumstance that within learning specific norms are established. The participants, especially the novices, do not only acquire the necessary skills, but also learn how one does something 'well' and in a morally correct manner. Seeing this clearly brings, in turn, the immanent didactics (Schindler 2011) of every practice into view: the participants show each other what is to be done and how they should go about it in order to be (re-)cognizable as correct, situationally adequate, and proper.

Thus, in contrast to both structure theoretical socialization concepts and individualistic theories of learning, Lave and Wenger's concept of situated learning offers diverse starting points to 'open up' practice theoretical research approaches for the formation of competent participation in learning and, thus, for play-ability. However, just as with Bourdieu's habitus concept, this model has more explanatory power for persistence and perpetuation than for change and innovation. This tendency is due to a preference for

6 For a critique of this theory cp. also Holzkamp (1995).

the success and finality of learning processes: Since their empirical material is mostly composed of cases from the area of trade, Lave and Wenger emphasize the common sense constituted within a community of learning, which arises through reciprocal engagement, work on a shared object, a shared pool of resources, and a shared history of learning. Conflicts are primarily located in conflicts *between* generations *within* a community of learning. In doing so, this model neglects the diverse other conflicts, resulting from the internal multiperspectivity, polyphony, and differentiation present in all praxis (Boltanski 2010; Warde 2005) as well as in the external differentiation of practices coming from different "social worlds" (Clarke 1991), especially in the highly differentiated society of Modern Times. Accordingly, a praxeology of learning must pay closer attention to the matter that every practice distributes the practitioners it gathers together into different positions with their respective perspectives, resources, and possibilities, thus, differentiating them (Nicolini 2012: 94) and also pitting them against one another. Neither linguistic communication nor cooperation can bring these disparate perspectives, interests, tendencies, and ambitions into complete convergence (Boltanski/ Honneth 2009: 101). In this regard, it becomes clear that the norms showing what is 'good,' 'correct,' or 'proper' depend on the perspectives which the participants take due to their positioning. Thus, work on a shared object does not by any means inevitably produce a consensus shared by all players. Rather, the normativity of what and how is to be learned emerges as a contested 'product' in the continual process of positioning in praxis.

IV The Physicality of Learning

The over-expansive use of the concept of common sense and the corresponding undervaluation of the role of conflicts and disagreements have their root in the neglect of materiality and physicality of praxis. As made clear in (post-)Marxist practice theories (Nicolini 2012: 103-133) or in the practice theory of Boltanski and Thévenot (e. g. 1999; Boltanski 2010) conflictuality of all praxis is fundamentally presupposed by the fact that the participants are engaged *as bodies* in a practice. Thus, they inevitably occupy a specific position in time and space, granting them an irrefragable perspectivity on events: each participant views themselves in their position as being confronted with specific expectations and demands and is also aware of the relativity of each perspective. Moreover, by taking the participants' physicality into consideration it becomes clear that learning cannot be reduced to a purely mental interaction with the world: as embodied beings humans are primordially interwoven with and subjected to the material-symbolic world; their actions and thoughts are unavoidably corporeally and materially mediated.

For making this insight known within sociology, the credit must go to Bourdieu's praxeology. His concept of habitus is an important starting point for a praxeological conception of learning. It is true that this concept has been criticized on many occasions of – although being able to explain the reproduction of the structures of social inequality through the actors themselves – not being able to analyse social change (e. g. Reckwitz 2000: 337-339), because it prescribes the dominancy of structures vis-à-vis the individual actors' possibilities in action (King 2000; Jonas 2014: 160pp.). That said, it does, nevertheless, offer several points of reference for the study of the formation of intelligently acting embodied 'carriers' of practices: in contrast to traditional socialization concepts, social actors, in Bourdieu's perspective, are not passive receptacles of external powers, being 'pushed and shoved' at their whim, but 'skilful creatures' that actively construct social reality via the categories of intuition, evaluation, and action

(Wacquant 2011). Unlike in subjectivist approaches – Bourdieu explicitly opposes 'phenomenology' – these categories are not universal, but embodied sediments of individual and collective history (ibid.).

Although terms such as 'sedimentation' and 'incorporation' do indeed harbour the tendency to reduce the formation of agency to a mere process of precipitation of external orders into the subject or as a transformation of external orders into internal dispositions, structures of perception, and thinking, and, thus, to view actors as mere 'agents' of these external orders, Bourdieu does, however, conceptualize incorporation as a social *activity*: it is the *acquisition* of the social world. Since meaning, cultural orders, and value systems only exist, according to Bourdieu, within social praxis, learning cannot be conceived in any other way than as *experience*, which is made in the active interaction with the concrete environment, with other people, things, and artefacts (Krais/ Gebauer 2002: 61pp.): By taking part, copying, imitating, answering, and trying things out, actors acquire a "sens pratique" (Bourdieu 1987) of the world, which allows them in most cases to spontaneously – without a 'detour' through conscious reflexion – produce acts worthy of being recognized as such. This sense of the world expresses itself in its basal form as a bodily feeling for what is wanted and expected in a social field or situation, for what is recognized as being fitting and relevant, i. e., an incorporated "social sensitivity" (Ostrow 1990) for a sensorially experienceable world, cemented in flesh and bone through familiarity, enabling the instantaneous differentiation of objects of experience, 'stimuli,' and demands, towards which behaviour can be oriented (cp. also Wacquant 1996: 42, fn. 35).

With this insight into the bodily entanglement of humans in the world and the view of the body not only as "raw material" (Moore/ Kosut 2010: 1) for social shaping processes, but also as a living body in the sense of an "intelligent, understandig being" (Crossley 1995a: 55), which grasps the world prereflexively and anticipates the future in situ on the basis of a 'room of experience' (Koselleck) (esp. Bourdieu 2001: 165-209), in this light, Bourdieu proves himself to be a sociological heir of Merleau-Ponty's phenomenology, albeit an heir who adopts concepts "in ways that are sometimes incompatible with both the spirit and the letter of the phenomenologist's work" (Wacquant 1992: 20). Although it is unclear whether the Merleau-Ponty's position is actually as subjectivist as Bourdieu and Wacquant claim (cp. in contrast Crossley 1995a; b), there certainly is a significant difference between Merleau-Ponty's theory of behaviour and Bourdieu's praxeology. Csordas (2011: 138) describes this difference as follows: "The vector of agency (for it has a directionality) is for Merleau-Ponty from our bodies to the world in the sense of projecting into and orienting to the world. For Bourdieu the vector is a double one, pointing in opposite and reciprocal directions between our bodies and the world that we inhabit and that inhabits us."[7]

7 Similarly, Wacquant (1992: 22) criticizes that in Merleau-Ponty's approach "there is no objective moment, and the soccer 'field' remains a purely phenomenal form, grasped strictly from the standpoint of the acting agent. This has the effect of blocking the investigation of the two-way relation between the subjectivist apprehension of the player and the underlying, objective configuration and rules of the game played." Like purely objectivist positions, Merleau-Ponty's subjectivist philosophy according to Wacquant (ibid.) "suffers from its inability to build a solid analytic link between internal and external structures, here between the sense of the game of the player and the actual constellation of the field." Bourdieu, by way of contrast, explicitly emphasizes the "twofold social genesis" (ibid.) of subjectivity and objectivity. He stresses, furthermore, that the reciprocity of this process "is not to be taken in any temporal sense, as if in dialogue or call and response between body and world," but that it "is structurally reciprocal in the sense

Taking such a concept of reciprocity into account, the living body comes into view as not being a priori extant, but as an empirical variable constituting itself first and foremost in the relations of praxis: the environmentally receptive human organism (Bourdieu 2001: 172) forms a net of dispositions in praxis in the form of tendencies and schemata of perception, feeling, cognition, and evaluation, which absorbs all (further) carnal input and experience and structures them. That is, it transforms itself continually within this process. The sedimentation of social and historical schemata (for action) in the organism leads to limits of processability of what it encounters in the world and, thus, it must selectively register those features of situations for which 'interfaces' already exist and, consequentially, for which social sensitivity has already been developed (Krais/ Gebauer 2002: 63p.). According to Bourdieu, it is only from this 'socialization process' of the body that individuation ensues: the singularity of the 'I' is formed in and through societal relations (Bourdieu 2001: 172).[8] Similar to John Dewey's pragmatic approach, in this model it is experience which has the function of constituting the subject and not presupposing it (Nassehi 2006: 228): the subject appears *with* the experience it has as *its* subject (Hetzel 2009: 383; Volbers 2015).[9]

Not least due to his primary focus on structure theoretical research interests, Bourdieu himself did not investigate empirically the concrete (micro-)processes of habitus formation in interactions of practices. An attempt to rectify this is Loïc Wacquant's (2003) autoethnographic study of his own becoming a boxer: Wacquant describes strikingly, to pardon the pun, using Bourdieu's theoretical vocabulary, how, through an arduous and often painful process of an 'implicit and collective pedagogy' (ibid. 103pp.) of training and practicing of body techniques and movement sequences, not only his physique, but also his ways of perceiving and sensing and his whole emotional equilibrium was transformed so thoroughly that his whole being gradually adjusted both to the functional requirements of the movements as well as to the moral order of boxing in the context of a gym in a Chicago ghetto. However, the Bourdiean perspective and descriptive language bring with them a tendency towards functionalism (cp. also Nicolini 2012: 77): the accomplishments needed in learning, e. g., during corrections or repair sequences with regard to (tangible) failures are dwarfed by this perspective; and it overshadows that it is in learning that (sense-)abilities, knowledge, and skills are 'born,' not only enabling a socially adequate inhabitancy of the world that is gradually becoming more familiar, but also imparting the ability to see the current state of affairs reflexively and critically, although it is these affairs to which these abilities thank their existence (cp. Meyer-Drawe 2003).[10]

[…] that the intentional threads are strung out in both directions," thus underlining the "simultaneous co-production of social reality by world and body" (Csordas 2011: 140).

8 With regard to Merleau-Ponty one could say that the individuality of the subject manifests in its incarnate style, i. e., in the way of corporally and intentionally being in the world. The term style denotes the historicity of the living body, meaning that which it has learned (cp. Bongaerts (2012: 138) in his account of Merleau-Ponty.

9 Similarly, Foucault (1996): An experience is something out of which one emerges changed (24). An experience is always fictive, something self-fabricated which was not there before, but suddenly was there (30).

10 A striking example is the realm of competitive sport: In a superficial account, it appears that the prescriptive targets of trainings programmes inscribe themselves without a hitch through countless repetitions of practicing and training into the athletes' bodies producing a clear matrix for future action. However, this perspective of an externally steered habitualization of routines and automatisms has been corrected by (auto-)ethnographic description from athletes themselves: On the one hand, a fine sensibility for the suitability of trainings programmes and training length can arise even within the repetition of top-

In order to gain a more differentiated understanding of the emergence of the intelligent living body as a medium of becoming a person or subject within a web of relations, it appears pertinent to revisit the micrological observations and the detailed descriptive vocabulary of (neo-)phenomelogical approaches. Within the current German-speaking sociological community, there are prominent efforts first and foremost from Robert Gugutzer (e. g. 2012) and Gesa Lindemann (e. g. 2014) to refer, beyond Merleau-Ponty's phenomenology (cp. Crossley 1995), back to the works of Hermann Schmitz and Helmuth Plessner with the aim of giving the term *leib*[*****] more social theoretical import. Especially in the case of Lindemann, experience is not seen in conjunction with a universal *leib*, but rather its societal constitution (and not superimposition) is put into focus. Following Plessner's theorem of eccentric positionality, it is in her view not the individual *leib* in its (subsequent) relation with the environment (*umwelt)* which is the starting point of the sociological analysis of order formation, but rather the historically variable relatedness of different *leibs* to each other (Lindemann 2014: 18): the structure of *leib*-experience is conceived from the perspective of the historical shared world (*mitwelt*) as 'mediated immediacy' (Plessner) within which societally formed bodies and subjectively experienced *leibs* refer to one another circularly without merging. Here, referring to a societally formed body does not cover up the theoretical elephant in the room of a naturalistic *leib*-experience of the world; rather, 'body' is conceived as an institutionalized symbolic form structuring *leib*-self-experience in the sense of mediated immediacy (Lindemann, in press). An empirical example of this is the *leib*-affective construction of gender (Lindemann 2011), which is characterized by the fact that the dichotomous arrangement of the sexes is so deeply ingrained in the senses and desires through manifold interactions in praxis that it is experienced as being immediately valid.

In such analyses, it is not the active decisions and actions of autonomous subjects serving as a starting point, but rather the body- and *leib*-involvement of humans in *situations*: how are these *leib*-selves affected *in* (Riedel 2012; Schetsche 2012) and *by* (Lindemann, in press) these situations? And, how do they respond to being moved depending on both the experiences they have gathered thus far as well on the practices in which they are currently engaged? In this perspective, social order formation is concerned with the formation of individuals or subjects in the regard that with the body the sensorium of the *leib* – sensing and feeling, emotions and desires – is formed and tuned in accordance with the sensibility demands of the shared world. Thus formed within the relations of a practice, the boundaries of the *leib* do not coincide with the visible outline of the body (Lindemann 2014: 90), but 'incorporate' other participants (bodies, spaces, things) into the experience of the *leib* – in this regard, Wittgenstein speaks of a 'space of muscular sensation'[11]. In this view, it is the 'bodily *leib*' (inter alia from Gugutzer 2012: 42pp.), which prior to conscious control, guarantees the orientation, delimitation, and, thus, recognizability of the unity of a subject in praxis: a body forged through learning, practicing, and training, a "body-in-accomplishment,"[******] (Alkemeyer/ Michaeler 2013) if you will, armed with the relevant dispositions, can continually adapt in the mode of *leib*-sensing or kinaesthetic self-steering, i. e., as a "*leib*-in-accomlishment" (ibid.), to changing situative conditions and demands of a practice. Thus, it can take on an effective presence as an 'agile moment' (Fuchs 2004:

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down programmes, shedding light on the limits of natural scientific/technical manipulation of bodies (Caysa 2003). On the other hand, it is exactly the situative availability of a repertoire of automatic "body techniques" (Marcel Mauss) stored in one's muscles which opens up a room to manoeuvre for 'empractical' reflection pertaining to praxis.

11 Wittgenstein, Ludwig: Philosophische Bemerkungen, §73, as quoted in Gebauer 2009: 64.

86) in praxis, from which innovations can constantly emanate (Suaud 2011; Noland 2009). In detailed empirical analyses of the constitution of such a body- or *leib*-in-accomplishment, e. g., in training practices, it is observable how the forms of implicit and explicit pedagogy evoke specific dispositions (or habits[12]) as potential in action which are selectively recalled and called upon in diverse practices and situations (Alkemeyer/ Michaeler 2013). In this perspective, dispositions are not determinants of behaviour, but rather a repertoire consisting of heterogeneous, still not fully formed possibilities and readiness (movements, habits, skills, preferences, desires), which in accordance with different practices can be activated for diverse operations.[13] Learning must take place especially in the case that discrepancies rear their head, when friction, resistance, and deviation from an (ideal) form become observable, the lack of a fit between inscribed habits and objective requirement structures (e. g., of a technical artefact) becomes tangible, the familiar suddenly appears fragile and (for the moment) no new means are available to cope with this newness.[14] Learning replies to such troubles; it entails an expansion and/or rearrangement of the already formed net of dispositions, requires the formation of newer, more complex dispositions[15], and is, seen thus, a constant process of *re*learning in the course of which a person transforms themselves in their relation with the world and with themselves (Buck 1989; Meyer-Drawe 2010).

V. Learning as Recognition

How acquired dispositions actually form in order to appear as recognizable behaviour is not only subject to functional requirements for reaching certain targets or results, but also normative expectations and aesthetic criteria of style. This can be illustrated using simple examples. For instance, Leontjew (1931/1973: 239) describes from an activity theoretical point of view how the hand movement of a child learning to use a spoon gradually succumbs to the 'objective logic of usage' of this tool:[16] With learning, the child transforms 'necessarily reflective' movements into object adequate skilled moves. In doing so, it explores the "material-social object meaning" (Holzkamp 1995: 282) within the spoon and gradually is enabled to partake in the practice of eating independently. However, suitably acceptable spoon usage is not completely derivable from object structures. For instance, a spoon can be swung with great vigour to one's mouth in a

12 While according to Elgin (2015) material objects can also have dispositions, she conceives habits as dispositions, which can only be formed by agents. They are "to some extend under their control."

13 For instance, the disposition to lift one's arm at the dinner table can appear as a movement with the function of bringing a spoon to one's mouth, while driving a car, however, it can be a component of changing gears. Therefore, a disposition is specifically formed and reformed in diverse practices in conjunction with situative constellations, their affordances (Gibson 1979) and the handling qualities (*Umgangsqualitäten*, Gehlen 1976: 170) of the participating artefacts.

14 This means that embodied know-how is, by all means, falsifiable: it can prove to be unusable in a situation and bring about unsuitable behaviour. It is exactly this persistence and resistance – its "hysteresis" (Bourdieu) – that is of interest from the point of view of learning since, in the case of inappropriateness, (explicit) re- or new learning is on the agenda.

15 Complex dispositions are mostly the abilities of the intelligence to carry out an action and also to evaluate it (Mautz 2012: 166; Ryle 1969: 49pp.). This, in turn, is the precondition for being able to do something differently (and consciously).

16 According to Leontjew (1931/1973: 239p.) a child acquires a system of functional movements, a system of actions with tool character.

generous movement or take the shortest route in an economic move from plate to mouth. It is other people such as parents who through demonstration, admonitions, manipulation, corrections, and sanctions contribute to bringing the movement into a specific form. In order to be recognized as a 'player,' one must learn alongside what one is learning, *how* it is to be done.

The connections between normativity, learning, and (self-)making as a 'player' are primarily being discussed in the current recognition theoretical debate within educational science and the sociology of education (e. g. Balzer/ Ricken 2010; Balzer 2014). In contrast to Axel Honneth's (1992) conception, recognition is not reduced to appraisals and the positive affirmation of attributes, which an already preextant subject seems to possess, but rather, in a continuation of Bourdieu's and Butler's works (Butler 2003; Düttmann 1997), it is studied power analytically as a performative act of the instantiation of a feasible 'subject candidate' as an agent, which can, by all means, take on the form of failure, degradation, or contempt. Since one is never *per se* recognizable, but always as *someone*, recognition always implies an element of submission under or the insertion in established, historically contingent orders of recognition and the behaviour styles that are considered suitable therein.

For empirical practice research, recognition can be operationalized as a sequential phenomenon consisting of acts of *addressing* and *readdressing* (Reh/ Ricken 2012). Consequentially, the multitude of referential acts become apparent, with which participants mutually qualify their behaviour with regard to suitability without, however, needing or being able to explicate the relevant criteria (Loehnhoff 2012: 18). Indeed, this is because these criteria are made available through cultural ways of living, institutions, and practices. Therefore, the implicit 'evaluatory logic' within the addressings refers back to frames, which are invoked in the sequence of addressings and, thus, interpreted and transformed in a specific way. This means that every act, in order to be considered worthy of recognition, must leave behind a kind of fingerprint of the cultural (social, institutional) context in which it is formed[17]: by the participants showing each other in the interactions of praxis *what* the situation is *about*, *what* and primarily *how* something is to be done and by correcting, criticizing, and sanctioning each other accordingly through addressings they develop performatively – step by step and move by move (Scheffer 2008) – the normativity (Rouse 2007) and "teleoaffective structure" (Schatzki 2002; 2012) of a practice.

Up to now, the focus of recognition theoretical inquiries has been on linguistic addressings, neglecting, in contrast, the materiality and physicality of recognition. Thus, it remains overlooked, *first*, that every event of addressing takes place in a specific socio-material arrangement, in which the participants reciprocally position, arrange, and orientate themselves in a specific way. Such arrangements prefigure behaviour, appearance, and actions; they make certain ways of speaking, standing, moving, and gesturing more likely, while inhibiting others. However, how they are actually used and appropriated depends, in turn, on the respective position that is being occupied and on

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[17] For the case of schools cp. Alkemeyer/ Pille (2015). Among other things, we demonstrate that pupils have to perform an order of (learning) following and (teaching) leading in order to be worthy of recognition as pupils. Further, it becomes evident that one's placement in the school order must simultaneously carry a stamp of individuality in order to appear as a *specific* and not *just any* pupil. It is, thus, interesting that this individuality also is produced in the interactions of school praxis, i. e., the institutional norms of recognizability are fleshed out on the foundation of these socially constructed individualities (or identities) with which they are practically interpreted and actually filled out.

the embodied experiential history brought into the situation (Holzkamp 1995: 253pp.). Further, each position is connected with its own norms of recognisability, thus, opening up and closing off certain behavioural possibilities. *Second*, it is neglected that addressing and the ensuing evaluation can be done highly implicitly, subtly, and, thus, often barely externally perceptibly, e .g., with minimal bodily hand or head movements, a brief raised eyebrow, changes in prosody, speed, or intonation. This means that not only linguistic, but also bodily expressions are meaningful elements of praxis holding within them implicit knowledge or a sensibility for suitability.

Furthermore and *third*, in recognition theoretical research it is barely registered that in a situation different orders of recognition can overlay one another. Such overlays can only be brought to light by 'zooming into' praxis microethnographically or by trying to 'look over the participants' shoulder.' It then can be revealed, e. g., that the practitioners are often confronted with the challenge of walking the tightrope between conflicting and pressuring expectations. An example from our own research is school pupils who really do wish to present themselves to their teacher as a 'good' pupil without, however, appearing as a swot or apple-polisher to their fellows.[18] In our example, they overlay their compliancy – they answer the teacher in the manner expected – with the extra style of 'coolness.' Even this brief example challenges the assumption of mere 'socialization' in a clear and specific order of recognition (cp. Honneth 1992, 2005). In contrast, it emphasizes that participants exactly in their skilful handling of disparate recognition expectations appear then as 'partially autonomous' subjects: they learn to behave in and with regard to diverse orders of recognition.

VI Conclusion: Learning as Self-Making, Enablement, and Subjectivation

In practice theoretical perspective, learning takes place through participation. Participation comprises the carrying out of innumerable acts of recognition of that which is deemed to be meaningful, relevant, and valuable within a social game or practice. To become and to be recognized as a player requires an investment in the game, to make the effort to act correctly and to ascertain how the game works: which positions are important, which less, which explicit and implicit rules apply, and to which one must strictly adhere, and which one can unproblematically disregard, etc. (Krais/Gebauer 2002: 62).

This self-making of players takes place within the relations of praxis – in contact with, required by, orientated towards, corrected by, and dealing with other human and non-human participants. In order to express this unavoidable heteronomy of learning acquisition qua self-making we use the term *enablement*: enablement is dependent upon concrete conditions, ontic disparate players, rules, etc., i. e., upon enabling (institutional, spatial, etc.) contexts, within which dispositions can be acquired, activated, made available, and formed. It is, in this sense, always a type of *empowerment* or *authorization* involving *normative criteria*: the participants decide in actu and performatively between suitable and unsuitable, right and wrong actions (e. g., with regard to a way of living, an institution, a practice, a position, or a situation). This "empractical" (Stekeler-Weithofer 2005) differentiation, inherently interwoven into praxis and directed towards action, and the identification of these differentiations is learned in

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18 For empirical research it is generally of interest to consider which 'human differentiations' (Hirschauer 2014) – e. g., between 'good' and 'bad' pupils, 'natives' and 'migrants,' 'boys' and 'girls,' etc. – are called upon and made relevant with acts of addressing and readdressing.

praxis: a “sens pratique” for what is appropriate which is also, in turn, a “sense of one’s place” (Goffman) is indispensable for being able to appear as a subject worthy of recognition. It is incorporated in the linguistic and bodily-gestural acts of addressing, with which the participants reciprocally bring themselves in and keep themselves within social order.

To be recognized as a competent participant and to be enabled as a player requires that one forms one’s behaviour in a historically contingent recognizable form and remain therein through self-organisation. It is exactly this which is the precondition for attaining a sense of agency which differentiates a player from a mere executive organ of social practices. This agency does not come to fruition in routines, but encompasses, moreover, intellectual perspectives, reflexion, self-determination, the shouldering of responsibility, and critical self-correction – attributes traditionally associated with the term subject. To conceive learning as *subjectivation* in the relations of praxis (one could say ‘inter-subjectivation’) allows for an approach which sheds light on the fundamental heteronomy of ‘subjective’ agency and, thus, on the interplay of functional, normative, and political dimensions at work, or should we say, at ‘play’ in its formation.

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* *Translator's note*: "Player" is used here to translate the German word "Mitspieler," which not only refers to the player of a (in this case: socially constructed) game, but also with the prefix "Mit-" to the entanglement of one player 'with' others.

** *Translator's note*: In this paper, the differentiation "praxis" vs. "practice" is used to denote two quite different interlinked matters: with praxis, the contingent unfolding of events is meant, whereas practice refers to typified and socially intelligible bundles of nonverbal and verbal actitivities.

*** *Translator's note*: The hyphen of "play-ability" is to signify that this term is not meant to be read in the sense that the word playable is usually used with regard to how well a game can be played, but primarily has the meaning of the abilities enabling actors to participate competently in a (socially constructed) game.

**** *Translator's note*: It should be noted that with "enablement," again, the usual usage of the word is not implied. Rather, it is meant to correspond with the meaning of the German word "Befähigung" in the original manuscript of this paper which expresses not only the 'abilities' and 'competences,' as which 'Befähigung' is normally translated, but also the process through which they are constantly being acquired.

***** *Translator's note*: Although the German word "Leib" can be translated as 'the lived body,' for this paper the decision was made to stick with the less-cumbersome original German word. Germanophils will hopefully forgive the incorrect plural of "leibs" used in this text instead of the German "Leiber".

****** *Translator's note*: The hyphenated term is used in lieu of a specific German compound, namely "Vollzugskörper," as is "leib-in-accomplishment" at a later point in the paper for the German "Vollzugsleib."

Robert Schmidt

Reflexive Knowledge in Practices (working title)

first draft – please do not quote

I Introduction

This paper outlines current research problems and desiderata in practice theory, and emphasises several characteristics of the praxeological style of epistemology. Two theses are formulated on the current state of the debate and an overview is given of two ongoing research projects, which deal with certain desiderata within practice theory. These are, on the one hand, a project where we are working on a comparative empirical analysis of writing practices, and on the other, a project that examines the role of software-supported match analysis in top-flight professional football.

The first thesis is as follows: In the current debate, so-called "practice theory" is often misunderstood as being a contribution to social theory. This ignores the fact that the practice-theory perspective above all articulates a certain attitude in research. Its frequently overlooked core concerns are: to develop a methodology of praxeologisation (cf. Schmidt 2012) and to evolve innovative, empirical search-and-find strategies for cultural analyses, which uncover the cultural meanings that the phenomena being studied have in the view of those who participate in them. In this context, culture should be understood – loosely modelled on Max Weber and Clifford Geertz – as a web of meaning that continuously spins itself, and whose material-technical, corporeal-representative, mental-intellectual, and symbolic elements are inextricably and continuously interwoven.

The second thesis runs as follows: Practice theory has so far stood out above all through the sensitivity that its analyses show to the material conveyors, carriers and elements of social practices (things, artefacts, technologies, bodies). Social practices might – put briefly – be categorised as processing activities that are conveyed, situated, materially embedded, distributed and interconnected through cultural knowledge and skilled body

movements. However, this orientation is closely linked to the praxeological critique of limited mentalistic or cognitivistic approaches, and has led practice theory to neglect mental elements of practices as well as the reflexive and theoretical forms of knowledge integrated into practices. We therefore still need to decipher precisely *how* reflexive, theoretical and analytical activities are enmeshed in and contribute to practical processes.

II Praxeologization as a Methodology

The majority of the (new) approaches that are currently being discussed under the heading of *practice turn* have evolved in very close connection with empirical research: this is true for ethnomethodology (Garfinkel 1967), for Goffmann's (1967) naturalistic observations and analyses of interactions, for ANT and its case studies (Latour/Woolgar 1986), and not least for Bourdieu's ethnography and his praxeology of Kabyle (1977) and (later) French society (1984). In other words, the practice turn is at the same time an empirical turn, which develops its theories based on empirical research. Notwithstanding this, practice-theory approaches are currently seen mainly as new developments in theory formation. This trivialises the critical and reflexive punch lines that such approaches articulate against the conventional understanding of theory – one might say, with Bourdieu, against the "scholastic" understanding of theory (cf. Bourdieu 2000).

It is well known that "scholastic" theories tend to universalise the social experiences of theoreticians and intellectuals and impute them to the research participants as well. This creates a picture (or rather: a caricature) of a social world that consists entirely of talking heads which think, argue and communicate with each other. Furthermore, "scholastic" theories tend to confuse the theoretical models of reality that they have constructed with the foundations of that reality. Conventional social theory provides many variants of such epistemic errors[1].

[1] This categorical ‚scholastic' mistake is to be found especially in social theories, which are marked by underlying realistic and substantialist understandings of social structures, systems, rules, norms or other analytical concepts. The normativist functionalism of Talcott Parsons may serve as an instructive example for this. Parsons substantializes norms and values and depicts them as discrete and independent entities, juxtaposed to social action. For an accordant critique on Parson's approach see Garfinkel (1967). Criticism of scholastic views also often refers to Levi-Strauss and his realistic understanding of structures. Levi-Strauss equates cultural and social structure with unconscious structures of the human mind. For an accordant critique of Levi-Strauss see Bourdieu (1990)

By critiquing "scholastic" perspectives, praxeological approaches put the focus squarely on reflecting the relationships between practices of researching and theorising, and the practices being studied. That is the methodological direction or twist they give to "questions of social theory"; they aim at a specific, reflected and revised relationship between theory and empirical research. What matters most here is to counteract the isolation of theoretical work from empirical work, and to do so in a sense that goes beyond the usual "empirical foundation" or "falsification" of theories. This is about destabilising the separation of theory and empirical research: it is about empiricising theories as sets of theoretical practices and at the same time striving for an explicitly theoretical (theoretically interested and engaged) form of empirical research, as a productive consequence of the inevitably theory-led nature of empirical observation.

Implementation of this programme is via a process of praxeologisation – an epistemic and methodological process, which can create interesting and suspenseful constellations with empirical perspectives and theoretical tools of perception. This brings me to the core of my first thesis: practice theory is not chiefly concerned with constructing a (new) social theory, but with developing a methodology of praxeologisation. This involves describing the objects, phenomena, processes and connections in question as being the effects and consequences of social practices, and thus decoding them in a new way.

In summary, we might retain that praxeology is not interested in answering the "scholastic" question of what a social practice is, and how it might be delimited from other, related phenomena ("act", "conduct", "interaction" or "communication"). Rather, practice theory sees itself as a critical and empirical-analytical project, as a reflexive modus operandi in research.

III Theoretical practices and the role within practices of theoretical, reflexive and analytical forms of knowledge

the praxeological critique of "scholastic" and mentalistically or cognitivistically limited approaches has nonetheless also brought about a certain skewedness or one-sidedness in practice theory: for the reverse side of the sensitivity shown by praxeological analyses to the material carriers, conveyors and elements of social practices is a neglect (typical of many empirical studies in practice sociology) of the mental aspects that are bound up with practices, namely sense-making, and reflexive and theoretical forms of knowledge.

We therefore still need to decode precisely *how* reflexive activities are enmeshed in and contribute to practical processes.

The methodological problem that most interests practice theory is the difference between practical and theoretical logic, with which Bourdieu, for instance, dealt at length in his epistemological reflections (cf. Bourdieu 1977, 1990, 2000). Bourdieu's praxeology discovers the misrepresentations of practical processes within the theoretical models that are designed to represent them, and attempts to reveal these misrepresentations and deformations with an epistemological intent.

However, bound up with this epistemological programme is a further desideratum that Bourdieu does *not* work on: As Luc Boltanski (2011), for instance, has criticised, Bourdieu largely construes practices as the opposite of scholasticism. This contrasting of practice and scholasticism results in the "scholastic" or "theoretical reason" (as Bourdieu calls it) being understood and described merely as a projecting and self-misunderstanding perspective, but *not* as a set of theoretical practices. Theoreticians are portrayed as mistaken holders of a "scholastic" position and view, but not as being practically involved in the social world of science.

The desideratum in practice theory to which I refer consists in making the production of theoretical models – in other words, "scholastic" and theoretical knowledge practices themselves – the object of empirical-praxeographic research. What is needed is empirical research on theorising: in other words, an empirical analysis of theoretical practices as well as an empirical examination of the role that theoretical, reflexive and analytical forms of knowledge and knowledge processes play within practices. We currently work on these desiderata in two related research projects, which are being outlined in the following.

IV Writing practices as knowledge practices

The project "Writing Practices as Knowledge Practices" turns theorizing into the object of empirical-praxeographic investigation, as 'theory-writing'. In theoretical practices, writing occupies the self-evident and as such rarely examined central point between "theoretical thinking" and "theoretical text", with "theoretical text" being considered the setting-down in writing of the "theoretically thought-of".

The praxeologisation of theorizing acts precisely here, at this unexamined central point: (Theory) writing is moved centre-stage as an observable, gestural aspect of theoretical activities, and is no longer marginalised from the outset as an activity that is differentiated from "theoretical thinking", as a subordinated and external activity that consists of merely jotting down prior theoretical inspirations, ideas, thoughts. After all, we often see, learn and know only whilst writing what we (actually) can say and want to say. The functionality of word-processing programmes, for instance, helps us in this, by keeping what we have written permanently provisional.

Our project examines theory-writing and other variants of the writing of academic texts. This is a practical-situational process and the same time a highly reflexive process: according to Niklas Luhmann, "the overwhelming majority of academic texts could also have been formulated differently, and would have been formulated differently, had it been written the next day" (2008: 10, my translation). Thus, on the one hand, the formulations finally arrived-at are contingent and dependent on the writing situation. On the other hand, a set of mutually shared cultural criteria, both explicit and implicit, is always at work, and what has been written is continuously evaluated and corrected according to them.

Theoretical and academic writing can, from this perspective, also be comprehended as writing-oneself-into a particular academic community of culture and practitioners, and as a process of subjectification: after all, participants are now invested to a considerable degree in academic writing: the strangely fruitless and hopeless writing in which novices and junior academics in many humanities and social sciences participate with persistent commitment resembles a practical spiritual exercise or a strained subjectification attempt carried out over many years: since only a smaller and smaller fraction of the manuscripts sent to the most important review journals is ever published, while the number of submissions steadily rises, gaining readers is clearly not a realistic aim of such writing practices. This mass of writing without hope of a readership has certain characteristics of investment and devotion that cannot be easily be put off even by constant rejection. Such a commitment has to manifest itself in various testing and responsibilisation procedures (colloquia, workshops, conferences, discussions with dissertation supervisors, etc.) and is constantly under review.

In other words, this is about rehearsing a certain theoretical or academic style; it is about gaining, over and over again, the demonstrable approval of certain theoretical

authorities (that must be cited); it is about following and reproducing certain customs, whose observance is supervised by a few representative reviewers and editors. Academic writing shows itself *in this perspective* to be a conformist practice that is directed not only, and not very much, at producing and publishing texts. Here, it is instead a practice oriented towards preserving a certain status quo – namely that of theory traditions – and towards a long subjectification and the development of an academic, theoretical literacy. It is a mutually shared practical ability, which is anchored in an academic habitus, endowed with culture-specific epistemological principles, world views and concepts of identity, and embedded in a specific socio-cultural context.

As for the method used in our project, in order to praxeologise theoretical and academic writing, we attempt to access writing practices as they happen, during their actual performance in time and space. In this way, we hope to keep in view even those forms of practical knowledge and those epistemic aspects of writing of which no evidence can be found in the text produced. Of course, we will be considering, on the one hand, the various writing traces, scribbles, notes and drafts. Alongside the verbalisations of participants, these constitute the preferred type of data for the ex-post analyses that have so far dominated writing research.

To make writing processes visible during their actual performance, we need above all to find strategies for generating process and observation data. Suitable procedures are verbalisations that occur simultaneously with the act (the thinking-aloud method); in-situ observations; video recordings of writing sessions; and using keystroke logging and other software tools.

The empirical focus of the project is writing in the humanities and social sciences. Based on this, we are looking for comparative cases so as to work out in more detail the minimum and maximum contrast of specific aspects. As it stands, we consider journalistic writing, the writing of advertisement and functional texts, the "culture-industry" writing of film scripts and dialogues for series, and literary writing.

The project aims, on the one hand, at a fundamental reflection on academic work in the humanities and social sciences. On the other hand, by confronting writing research, which has been oriented towards cognitive psychology and didacticism[2], we intend to develop new strategies for generating process and observation data about writing.

[2] For an influential but limited mentalistic approach in studies of writing cf. Hayes/Flower (1980).

Beyond that, the results to be expected from this project can contribute to our understanding of how organisations (in academia, but also in the media and in knowledge work) might cultivate and foster writing and knowledge processes.

V New analysis and knowledge practices in professional football

Whilst the project I have just outlined takes as its object theoretical knowledge practices and practices of theory-writing, the project "New analysis and knowledge practices in professional football" works on a different but closely related aspect of the practice-theory desideratum that I have outlined above: this project deals with decoding precisely *how* reflexive and analytical activities are enmeshed in, and contribute to, practical processes.

As a comparison of historical and current recordings of televised football matches shows, since the 1950s the cultural practice of football has not only been preserved, but also greatly changed. The game is played more quickly today; the players appear much more athletic and the game more intense; the formations and patterns made by teams on the pitch are fundamentally different.

From a sociology of practices perspective, these changes derive from innovations in all the core elements of the bundle of practices that is professional football – in other words, changes in materials, in cultural meanings and in forms of knowledge and knowing-how (cf. Shove et al 2012). New materials (shoes, clothing, lawns, training and playing devices, medical technology, physiologically optimised bodies, but also – as we shall see – GPS-supported tracking systems and thermal imaging cameras, software, etc.) combine with new cultural meanings (such as the currently dominant image of the team as a flexible work group that is adapted to the contingencies of the market place and consists of team players who can be freely substituted) and, not least, with new developments in forms of knowledge and knowing-how:

In the last 30 years, the cultural practice of football has developed a cognitive and epistemic dimension and its own analytical reflexivity: quantification, digital match accounting, and the associated operative forms of knowledge have fundamentally changed the practice. These innovations in the area of practice-specific reflecting and analysing have had an impact not only on the way in which the game is played, but also on the way in which it is understood, interpreted and commented on. These new forms

of knowledge have influenced the critical sense-making of coaches, journalists, and audience. They have led to football being examined, discovered and analysed anew by the participants.

In the early days of this development, play was initially captured in observation categories such as “ball contact”, “balls won/lost”, “passes/accuracy of passes”, “sprints”, “shots at goal”, etc. Trained analysts categorised the relevant match events in real time, and entered them into databanks through mouse clicks and key combinations. The categories defined key activities of the match. These were broken down or “translated“ into a sequence of countable events. The point was always to assign the events to individual players and to determine their performance.

In other words, the gathering of statistics founded a specific interpretation of, and perspective on, the match. What is remarkable here is that decisive aspects and dimensions of the play *cannot* be captured: for instance, the way in which the defenders’ good and coordinated legwork ensures that the opposing forward *cannot* be passed the ball, necessarily escapes this analysis practice: it cannot register that, owing to careful and anticipatory playing behaviour, something has *not* happened.

Nowadays, the locations of all players can be tracked simultaneously with the help of fixed cameras, thermal sensors and tracking technology, thus making it possible for technology to capture play in its entirety. To this end, all 36 of the stadiums used by the two Bundesliga leagues have been equipped with the appropriate special cameras by the company Impire AG. Impire AG exploits the data these gather and puts them at the disposal of all clubs involved.

Every match day, the new technology produces large amounts of data, which are evaluated using specially developed software. This makes it possible to create statistical values and artefacts: ball possession of individual players and the respective teams; top and average running speeds of individual players; accuracy of passes; travel in midfield; relational distances between defenders in a four-man defence, etc. New match strategies are founded on these key figures: the analytical data recommend substitutions or switches, and use continuous simulation to analyse how likely different tactical variations are to succeed – in a word: they join in the game.

In his readable book “Die Fußballmatrix”, the german sports journalist Christoph Biermann (2009) ascribes all important tactical innovations of the present day – such as

ball-orientated defending (dissolution of man-to-man marking); maintaining possession within the own ranks for a long time ("tiki-taka"); strengthening the centre (two defensive midfielders); and shrinking the play area by moving lines and formations accordingly – to such statistical, software-supported analyses of the success rate of certain tactical variants.

This thesis can be made corroborated by the specific performativity of the analysis and accounting processes I have mentioned: software-supported analyses of the performances of individual football players and teams continuously construct and evaluate characteristics that they had seemed merely to register and measure. These include not only players' specific aptitudes (accuracy of passes, goal-scoring ability, willingness to run, etc.), but also certain aspects of play, which are generated as evaluable and strategically significant facts only through software-supported match analysis: the speed at which players "switch" from defence to offence after winning the ball, "domination in midfield", etc.

In other words, the analytical software does not merely record events on the pitch, but has a tautological character – as do police crime statistics, for instance. Just as crime statistics do not record the actual criminal event but rather the crime-control activities of the police authorities (cf. Meehan 1986), so match analyses do not document the actual play, but rather relate and report the way in which professional football organisations, managers and coaching staff orientate themselves on certain match aspects and events. However, the relevant indicators and figures nonetheless make a claim to being a valid reality. Thus, the analysis software simultaneously produces a new match truth.

The best way to think of this „new truth" or reality of football matches is to think of it as the continuously produced result of a circular reflexivity between play and match-analysis software. Let me explain that connection briefly: The analytical data are, of course, indexical, which means that they can only be understood if we use the context of play interpretatively: we understand the expression "distance covered in first half: 6.7 km" only against the background of the actual activities of a player in the match.

Inversely, however, the analytical data can also be used as a context or "background" for understanding play: in this case, for instance, a player's visible exhaustion can become a sign (or index) of the distance already covered by him in the game, which has been documented statistically and expressed as a number. Such circular reflexivity (in which

the analytical data also act as sign and context) not only brings out and secures the intelligibility of the analytical data. It also creates an “actual reality” of play that is hidden from spectators in the stadium and is manifest only in the analytical data and on the analysis monitors.

In this connection, match analysis in football raises interesting further questions about the relationship between analytical processes and the events being analysed: can the analyses, which are increasingly being carried out simultaneously with play (in the field, this is called match affecting real time analysis), dissolve the difference between analytical logic and the practical logic of the actual play? What does it mean in this context if, for instance, the results of passing statistics, which are continuously made available, are ratified practically during the match and lead to tactical switches or substitutions?

Does match analysis therefore encounter its own classifications and operationalisations on the pitch? Are there parallels here to the so-called “social studies-scientification” of sectors of society (cf. Beck/Bonß 1989)? After all, what this expression captures is the fact that during a structural repositioning of social sciences, sociology encounters social-technology operationalisations of its own concepts and theories in its subject and research areas – meaning that it encounters itself. If that is so, then the developments in football that I have outlined can be understood as a transformation of match analysis in match technology that parallels the transformation of sociological analysis in social technology.

This transformation becomes evident in the popular football simulation videogame, “FIFA 15”. In this game, the statistical performance values of well-known players (parameters such as goal score, accuracy of passes, etc.) form the basis for modelling game avatars, which can then be controlled, substituted, bought and sold. At the same time, this example makes clear that the new epistemic processes and reflexive forms of knowledge not only change the work of the groups of experts which have been a firm component of professional football for decades, but that they furthermore create connections to new practices and groups of actors, which broaden and differentiate the bundle of practices that is professional football: alongside FIFA 15 gamer communities, this includes pop-culture-orientated and knowledgeable football journalism in magazines such as - in the german context: “11 Freunde” or “rund” - and the emergence of new elaborate forms of football criticism.

To provide a clearer understanding of the connections that I have outlined, we use detailed observation in our research project – in the style of studies of work – to examine the development of match-analysis software and analytical work, or in other words: the ethno-methodology of its use[3].

The empirical and further questions I have outlined are also eminently important for work on the practice-theory desideratum that were outlined above: they help to illuminate the role of analytical activities and reflexive forms of knowledge in practices. It can then be shown precisely *how* analytical and reflexive processes – which are neither prior nor subordinate to the practices being analysed but are interwoven into their performance – effect, stimulate and change the match or practice.

In other words, we are concerned here with a problem that, in my view, is of decisive importance to the further development of practice theory.

[3] A revised version of this paper will integrate the findings of our research project in more detail here and will draw some more differentiated conclusions concerning the significance of reflexive knowledge and member's analyzing for the inner workings of practices. Due to delays in the research process this could not be accomplished in this first draft.

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'Advances in practice theory: problems, frontiers and opportunities'

Draft – Silvia Gherardi

Title: Sociomateriality in posthumanist practice theory

Abstract

New feminist materialisms may offer a valuable contribution to an enlargement of the concept of sociomateriality to include an image of viscous porosity in the entanglement of the social and the material, the physical and the psychical, the natural and the technological, the material and the discursive. Sociomateriality thus becomes the symbol for how oppositional dualities may be considered theoretically and methodologically entangled. Several research examples are mobilized to support the idea that a posthumanist practice epistemology assumes practice as an *agencement* of heterogeneous elements that in their connections and becomings assumes agency.

Introduction

Sociomateriality is a term that has spread in sciences and social sciences enormously in the last twenty years and with many different conceptualizations. Science and technology studies have been interested in demonstrating the way that the social, the technological and the political intermeshes (Bijker and Law, 1992), educational studies approached sociomateriality in the materiality of learning (Fenwick et al, 2011; Landri, 2014; Manidis and Scheeres, 2012), organization studies and information studies (Carlile at al. 2013; Leonardi et al. 2012) contemplated the relationships between technological materiality and organizing, laboratory studies stressed postsocial relationships in epistemic practices (Knorr Cetina, 1997), and many other elaborations may be traced. Several commentators point to a commonality within such different fields and indicate this in a discomfort with the poststructuralist linguistic turn that has granted too much salience to discourses and discursive practices. Nevertheless it would be misleading to oppose materiality to discourse, since the main aim of sociomateriality is to overcome the opposition between meaning and matter in specific and in oppositional thinking in general. The message is rather to look at what 'remains in the excess of the practices of the speaking subject' (Blackman and Venn, 2010) and representational thinking (Thrift, 2007).

Within this burgeoning conversation the so called 'new feminist materialisms' have contributed in important ways - and as an example I may cite the growing impact of the work by Karen Barad – whilst other conversations have remained restricted to gender/feminist/queer studies (Braidotti, 2002). The aim of this chapter is twofold: to enrich the concept of sociomateriality with the

contributions coming from environmental feminism, corporeal feminism and ethics, and to position sociomateriality within a posthumanist practice theory.

The literature that has produced and consolidated the turn to practice, and put in motion the 'bandwagon of practice-based studies' (Corradi et al. 2010) is now in need of better understanding of the differences among approaches to practice and for this reason I shall use the term posthumanist to better qualify an approach to practice in which relational materialism is the assumed epistemology that differentiates it from other human-centered practice theories (for an articulation of the difference, see Monteiro and Nicolini, 2015).

A posthumanist practice theory has its roots in the sociology of translation (Latour, 1992; 2005), the principle of symmetry between humans and nonhumans and in a relational epistemology (Law, 1994; Law and Hassard, 1999). And in order to stress how within a relational epistemology, both the idea of performative accomplishment, and becoming are central, I propose to leave aside for the moment the most current definitions of practices as arrays of activities (human, nonhuman or intertwined) and to focus on the image of a practice 'as a mode, relatively stable in time and socially recognized, of ordering heterogeneous items into a coherent set' (Gherardi, 2006:?). Practice is thus seen as a mode of ordering, rather than an ordered product, an epistemology rather than an empirical phenomenon, and a process methodology is what is best suited to look at practices in their becomings. In fact practice and practicing are entwined and to consider practice as epistemology 'enables scholars to theorize the dynamic constitution of dualities and thus avoid the twin fallacies of 'objectivist reification' on the one hand and 'subjectivist reduction' on the other' (Feldman and Orlikoswki, 2011: 1242).

I shall use an example taken from my own research in care practices where I may ground the concepts of sociomateriality that are situated at the crossroads of different conversations, namely in organization studies since this is my field of study and in new feminist materialisms since therein are my intellectual roots. Therefore the chapter will start with positioning the concept of sociomateriality within the conversations going on in organization studies, and their connections with new feminist materialisms. I shall offer some examples form feminist theorizing and researching, drawing on phenomena as different as Hurricane Katrina, gastrointestinal complaints, and the embodiment of fathering practice, to illustrate the '*viscous porosity*' in-between entangled elements

Sociomateriality in organization studies and information systems

Sociomateriality, with or without a hyphen, is a key topic of research in organization studies, following the tradition of socio-technical literature. Similarly in information systems it has a long

history that has been aptly presented recently in a special issue of MIS Quarterly (Cecez-Kecmanovic et al. 2014). Within this field of research 'the material' in sociomateriality is mainly technological but not solely so. Also the received views on technology and its effect in social life and in epistemic practices have been called into question.

The range of sociomaterial research is broad and it has been suggested to consider the term sociomateriality just as the symbol for the intertwining of the material and the social or as an umbrella concept. The term sociomateriality, without a hyphen and in reference to the feminist onto-epistemology of Barad, has been introduced by Wanda Orlikoswski (2006, 2007, 2010) together with Susan Scott (Orlikowski and Scott, 2008; Scott and Orlikowski, 2014). The term entanglement or generative entanglement was introduced with their work together with a relational ontology and an acknowledgement of the term relational materialism by Law (1994) and performativity by ANT. These terms refer to the fact that meaning and matter, the social and the technological are inseparable and they have not inherently determinate boundaries and properties, rather they are constituted as relational effects, performed in a web of relations.

At the same time a substantialist ontology is widespread in this field and it assumes that the social and the material, human beings and things exist as separate entities that interact and impact on each other. The materiality of technology is assumed as independent of people and in Leonardi's (2012) work the term sociomateriality is used to emphasize its impact on what we consider typically social. He employs the imbrication metaphor (from tiles on the roof) to assert that people have agency and technologies have agency, but ultimately, people decide how they will respond to a technology.

Leonardi is representative of a substantialist school of thought in approaching sociomateriality (see also Leonardi and Barley, 2010), but other authors (Faulkner and Runde, 2012; Mutch, 2013) also contest the relational ontology. An intermediate position is assumed by Jones (2014) who conducted a literature review of the 140 journal articles published since 2007 in which sociomateriality appears. He distinguishes a strong and a weak sociomateriality both equally acceptable and offering distinctive contributions. The strong sociomateriality addresses all of the concepts that Orlikowski suggests are entailed in sociomateriality: materiality, inseparability, relationality, performativity, and practices, whilst the weak version employs only some of these quite selectively.

To trace specific borders is not so easy because the debate around ontological issues often assumes ideological overtones. I prefer to continue the discussion on sociomateriality bringing it back to the feminist engagement with materiality from which it was extracted, and at the same time I wish to stress how the debate on the sociomateriality of technology is still in a precarious equilibrium

between the material and the social, on the edge of being interpreted as an agent of change (privileging its agency vis à vis humans) or as an object of change (privileging humans).

Nevertheless before leaving the literature on the sociomateriality of technology I wish to stress how the materiality of digital technology becomes important in a theory on sociomaterial knowing, as it plays an integral part in creating - not simply representing - the materiality of the physical world.

In an ethnography of epistemic practices in petroleum production, Østerlie et al. (2012) introduce the notion of dual materiality to analyze the inseparability of material phenomena and sensor arrangements for knowing how oil (matter) is transformed into information. In fact a central aspect of the concept of constitutive entanglement is that materiality is in itself performed and knowing arises from the emerging patterns of interaction between material phenomena, the material arrangements for knowing about these phenomena, and knowledge practices.

Another passionate account of the performativity of dual materiality can be found in van Loon's (2002) history of virology which provides an account of how the objective status of 'the virus' has been an accomplishment, rather than a matter of fact. The virus became a virtual object whose ontology depended on the specific technologies of visualization, signification and valorization with which it has being disclosed. The electron microscope provided the first technology of visualization with which science could effectively claim to 'see' viruses as such. Following other ethnographic works on 'virtual objects' (Law, 1995; Mol, 1998) which suggest that virtual objects multiply when being disclosed by different technologies and discourses, van Loon (2002:113) introduces the concept of enpresenting as 'a 'bringing into being', it is neither 'presenting' nor 'representing' as both notions imply a difference between essence (real) and appearance (image). Enpresenting is an act of disclosure that constitutes the disclosed and what can be disclosed. [..] Enpresenting thus suggests a process of becoming visible, a process that takes time. Viruses, then, are not a present but a becoming-present. They highlight that being and temporality are intricately connected.

I think that in the debate on the sociomateriality of technology it is important to make visible the sociomateriality of the knowing practices that objectify (enpresent) the known object and as I shall discuss later epistemic practices carry a responsibility on how the boundaries (separability/inseparability) around concepts are drawn.

We can acknowledge the contribution to organization and information systems coming from the concept of the social entangled with the material, nevertheless an enrichment of the concept may come from feminist theory and the way it engages with sociomateriality and similar and related oppositional dualisms (mind/body, nature/culture, subject/object).

Feminist engagements with materiality

The new materialism(s), new feminist materialisms and material feminisms are a few labels that denote a growing field of studies, running in parallel with other 'material turns' (Alaimo and Hekman, 2008; Barad, 2003, Coole and Frost, 2010, Frost, 2011; Grosz, 2011; Haraway, 1991; Hekman, 2010; Hird, 2004; Wilson, 2004). Rosi Braidotti (2002) is credited for the introduction of the term 'material feminism' and there is a great overlap between the different 'materialism' terms coming from corporeal feminism, environmental feminism and science studies, whilst a difference is stated with 'materialist' feminisms inspired by Marxist theory. I shall use the term 'new feminist materialism' in a pragmatic way for introducing some themes that relate feminist materialisms to the debate on posthumanist practice theory.

What distinguishes the emerging analysis of material feminisms is 'a keen interest in engagements with matter' (Hird, 2009: 330). In fact Myra Hird recalls Mackenzie and Murphie's (2008) argument that the social sciences approach science and materiality in one of three ways: critique, extraction and engagement. Feminist critiques of science focus on the androcentrism of science, gender relations and the fabric of gendered and technological enterprises. Extraction on the other hand is interested in using scientific concepts, like refraction, or ontogenesis, to discuss philosophical questions inherent in the construction of social relations. Engagement instead concerns a dialogue with science in the making and ways to live with science and technology collectively.

Introducing feminist engagements with matter in science studies, I shall briefly refer to Donna Haraway, and Karen Barad who offer us a view on science, knowledge and technology coming from biology in the first case and physics in the second and both challenge the divide between nature and culture.

Donna Haraway (1991; 1997) has deleted the hyphen (in sociomateriality) and proposes to talk of natureculture as a unity, a universe rich in material-semiotic actors and metaphors like the cyborg, the OncoMouse, the multispecies crowd, an otherworldly conversation. Her questions revolve around what 'nature' means in the complex practices of our contemporary society. The image of the cyborg is based on a science fiction imagination, but a woman taking contraceptive pills is already a cyborg, a hybrid of nature (body) and technology. The OncoMouse, manufactured in scientific laboratories, and not born, is another example of nature artificially produced. An oncogene, the gene that produces breast cancer, has been transplanted in it, thus the OncoMouse is the techno-body par excellence and at the same time it is the mammal rescuing other mammals.

Haraway's work dislocates the centrality of the human, in favor of the in/non/post-human and of bio-centered egalitarianism. In fact what we call a body is a multispecies crowd if we consider that human genomes can be found in only about 10 per cent of cells, while the other 90 percent of the

cells are filled with genomes of bacteria, fungi, and others tiny messmates. And she concludes saying that 'to be one is always to become with many' (Haraway, 2008b: 3). The image of the companion species (Haraway, 2008b) links to the idea of otherworldly conversation (Haraway, 2008a) in which various nonhuman entities participate as subjects. Her work 'calls for a renewed kinship system, radicalized by concretely affectionate ties to non-human 'others' (Braidotti, 2006: 199). And in fact Braidotti (2013) proposes to use the term more-than-human instead of nonhuman to overcome the dichotomy human/nonhuman.

Also Karen Barad takes away the hyphen between the social and the material and with her work the term sociomateriality has entered into the debate on technology as a social practice (Orlikowski, 2010, Suchman, 2007a; 2007b; 2011). Barad's (2007) work defines her epistemological position as agential realism and in order to understand what she means with this term we have to keep in mind how her book begins with a conversation between Heisenberg and Bohr about the so called particle-wave duality paradox. For the former, quantum theory represents an epistemological concern and the particle-wave duality demonstrates that we can only make probabilistic predictions (uncertainty principle), for the latter it is an ontological issue, since particles do not have determinate values of position and momentum simultaneously (indeterminacy principle). Barad with the term intra-action denotes the Bohrian ontological inseparability of all words (culture) and all things (nature). Rather culture and nature are entangled since Barad (2007: 37) seeks to avoid the issue of representationalism and therefore 'realism' is not 'about representations of an independent reality but about the real consequences, interventions, creative possibilities, and responsibilities of intra-acting within and as part of our world'. Reality is defined as things-in-phenomena and not as things-in-themselves and in fact 'phenomena' are considered as the primary ontological unit, recalling Bohr's definition of them as observations under specific circumstances, including an account of the whole experimental arrangement, and in Barad's term 'entangled material agencies'. Both Haraway's work and Barad's are reflections on epistemic practices and both talk of a way of knowing in which the knower is not external or pre-existing the world (the view from nowhere), rather the knower and the 'things' do not pre-exist their interactions but emerge through and as part of their entangled intra-relating. This assumption allows us to reformulate the notion of agency and to transcend the duality of social versus material agency, human versus more-than-humans agency, material versus discursive. Therefore the idea of engagement with natureculture or sociomateriality requires a different onto-epistemology that does not separate nature from culture and the challenge now becomes how to develop methodologies for the empirical study of intra-relating.

I wish to introduce briefly some examples of empirical research, from the field of environmental feminism and corporeal feminism to initiate reflection on epistemic practices shaped by

sociomateriality, and only afterwards I shall offer an example from my own research experience. As a first example I shall discuss Nancy Tuana's (2008) term 'viscous porosity' and how she uses it for interpreting Hurricane Katrina in its becoming, as a concatenation of phenomena.

Katrina, viscous porosity and situational entanglements

Tuana (2008: 188) takes what she calls an interactionist approach to better understand 'the rich interactions between beings through which subjects are constituted out of relationality' and she offer Katrina to witness the 'urgency of embracing an ontology that *rematerialize the social and takes seriously the agency of the natural'* (emphasis in the original). Katrina is emblematic of the viscous porosity between humans and our environment, between social practices and natural phenomena. The metaphor of viscous porosity - rather than fluidity – offers an imaginary where viscosity is neither fluid nor solid, and the attention to the *porosity* of interactions helps to undermine the notion that distinctions signify a natural or unchanging boundary of some kind. Moreover, viscosity retains an emphasis on resistance to changing form, which helps to look for sites of resistance and opposition in the complex ways in which material agency is involved.

Katrina made visible New Orleans as a complex material-semiotic site. In it, historically, in order to create usable land, water was pumped out of the area which in turn caused the ground to sink even lower. The sediment from the Mississippi created areas of 'natural levees' that transformed the local geology and hydrology and local geology and hydrology emerge from complex social vectors. Human consumption and refuse practices resulted in altered flora habitats, which in turn altered human interests. The material agency in its heterogeneous forms interacts in complex ways and the agency in all these instances emerges out from the situated interactions and is not antecedent to them. The viscous porosity between human and nonhumans happens also at more intimate levels, since Katrina left New Orleans flooded in a 'toxic soup' when water arrived at some toxic waste sites in a corridor named 'cancer alley' where many types of industry clustered and their settlement was favoured by governmental policies. Tuana goes on describing the viscous porosity between plastic industries – namely polyvinyl chloride (PVC) – 'my flesh and the flesh of the world' (ibidem, 199). The flesh that Katrina made visible – and Tuana interprets as materialization of ignorance[i] – was the flesh of the poverty, the racialized world, the disability that suddenly appeared in the media and had been canceled or denied thus far.

Tuana (2008: 196) advizes that 'our epistemic practices must thus be attuned to this manifold agency and emergent interplay, which means that we cannot be epistemically responsible and divide the humanities from the sciences, or the study of culture from the study of nature'. Her use of the concept of epistemic responsibility comes from Lorraine Code (1987) who persuasively argues that

epistemic analysis cannot be separated from ethical analysis, since we must be responsive to how the distinctions we embrace construct our experiences, as well as how these distinctions are enacted in social practices in what they conceal as well as what they reveal.

Using my own categories I would say that what Katrina made visible was a texture of practices (Gherardi, 2006) in which the natural, the social, the materiality are entangled. Whilst in Tuana's framework we may still see a kind of viscosity connecting the relations between separate elements in interaction, we can compare another interpretation of Katrina in which the elements are entangled.

Amanda Porter (2013) investigates the emergence of organization and technology at a City shelter not far from New Orleans, where Katrina evacuees sought refuge in the days prior to and following the disaster. She defines emergence as an empirical phenomenon, affecting and affected by the use of technology, and emergent organizations are defined as those with both new structures and nonregular tasks.

Emergence occurred at the shelter as situational entanglements consisting of three main elements: a salient moment in time, key actors, and boundary-making practices. The first salient moment occurred during the initial hours of the response when volunteers experienced significant pressure and uncertainty at the shelter. The second salient moment occurred around the second day of the response, when volunteers experienced the failure of the technologies they had initially designed. These two salient moments in time triggered key actors' boundary-making practices. In fact, some volunteers responded quickly to situational demands with the design and deployment of responsive technologies while other volunteers waited to take action. These boundary-making practices enacted distinction and dependency between key actors. First a distinction was enacted between volunteers and technologies at the shelter that were responsive versus those volunteers and technologies that were reactive to the initial extraordinary demands; secondly a dependency was enacted between volunteers and responsive technologies at the shelter, resulting in a divided organization. On the one hand, responsive volunteers and technologies co-emerged to gain control of the situation at the shelter, becoming defining actors. On the other hand, reactive volunteers became exterior to the developing situation at the shelter and soon became isolated actors.

Porter's work (2013: 11) 'articulates the *situation* (emphasis in original) as the focal point for selecting and discerning which agencies matter in emergence'. Moreover, in order to study emergence with a situational focal point, she theorizes relationships between agencies specifically as situational boundary-making. She argues (ibidem: 26) that 'the boundary-making focus extends existing theory on emergence in organizational technology studies by showing how emergence

occurs through the *(in)determinacy of meaning*. In other words, inclusion and determinacy of meaning are always accompanied by exclusion and indeterminancy of meaning (Barad, 2007)'.

In my reading of Tuana and Porter's works I see the similarities and the differences between a sociomaterial conception of agency based on interactionism or constitutive entanglement. Moreover in Porter's work I see the articulation of practices of inclusion and exclusion on the basis of meanings situationally enacted. This theme will be brought forward in my contribution.

Differences in theorizing the relationality of agency are important and for bringing this conversation forward I turn to explore embodiment since the body is fundamental to any practice theory and the question of what is a 'body' is inscribed in the dichotomy nature/culture.

The gut, fatherhood and embodiment

What is a body? Do we 'have' bodies or 'are' we bodies? From Merleau-Ponty's (1962) widely-cited concept of 'body subjects', ideas of the indivisibility of mind and body and of human beings as embodied social agents spread into the sociology of the body (Crossley 1995), feminist theorizing on embodiment (Howson and Inglis 2001; Fotaki et al. 2014); and corporeal ethics within organization studies (Pullen and Rhodes, 2015b).

Human perception is intrinsically embodied for Merleau-Ponty: 'we are in the world through our body, and [..] we perceive that world within our body' (Merleau-Ponty 1962: 206). He argues that to be a body is to be tied to a certain world, the perception of the world is always embodied and the perceiving mind is an incarnate mind. Moreover embodiment is bidirectional in that the body is sentient and sensible, it sees and is seen, hears and is heard, touches and is touched. Thus, embodiment is neither idea nor matter, neither subject nor object, but both at the same time.

Merlau-Ponty's concept of embodiment enables us to see how sensible knowing is enacted in situated practices and how aesthetic judgments sustain working practices (Strati, 1999; Gherardi and Strati 2012). Moreover, in this conceptualization of the embodied subject, Dale (2005) sees a tool for understanding the negotiation of the material and the social (that she keeps in interaction, as mutually enacted), the organizational and the subjective, the everyday relationship of the individual with organizational control systems. Embodiment is a concept present in practice theories and Reich and Hager (2014) consider it as one of the six threads of the literature on practice. Nevertheless a feminist epistemology, looking at embodiment, has something specific to offer.

In fact, within the social sciences it is now widely accepted that selfhood is not only social but also embodied. Nevertheless the collapse of the mind/body dichotomy and psyche/soma originated from many different sources and I limit myself to mention just a few that may be relevant for a discussion of sociomateriality.

To see matter and culture as already enmeshed phenomena, I like to recall the work by Elisabeth Wilson (2004) in which she argues that soma and psyche do not correspond to different realities of the body and she offers the example of gastrointestinal complaints, to show how the gut might co-constitute both soma and psyche (see also Hird's, 2009 review of Wilson's book).

Another telling example of the intra-connection of space as both symbolic and material, is the liminal space of in-betweenness aptly described by Ettinger (2006) as 'matrixial', in the sense of uterine, with reference to the pregnant body and to the permeable membrane between the body of the mother and that of the foetus. The concept of matrixial space as a space of non-separation and non-distinction has been taken up in organization studies by Kenny and Fotaki (2015), since the conception of the co-emerging of partial subject (the mother and the baby) with the matrixial borderspace provides the image of an emerging subjectivity in a sociomaterial encounter. The authors argue that Ettinger's work provides a fruitful new direction for the study of corporeal ethics within organization theory. The idea of corporeal ethics draws on Diprose's (2002) notion of an ethics grounded in embodied experience.

When we consider subjects as embodied subjects, and the body as "neither brute nor passive" (Grosz 1994:18) but as "agential intra-activity in its becoming" (Barad 2003:818) then we can consider practices as embodied and emplaced (Ingold, 2000) since the issue is not the body per se but the shifting sociomaterial intra-actions of bodies and matter across time and space.

Emphasising the notion of 'emplacement', Elisabeth Hsu (2007) adds an integration of a body-mind paradigm, since emplacement implies an interrelationship of a body-mind-environment. Drawing from examples in Chinese medicine, she illustrates how body concepts derive from ecological experiences and she illustrates the relationality of the body and its composition in diverse networks of desire, practices and habits. Our understanding of a 'body', is changed in a 'body-assemblage', a series of affective and relational becomings. At the same time, she suggests also that space ought to be understood as a dimension of social relationships, a site where capacities can be enacted.

A good exemplification of what I consider the entanglement of a body-mind-environment may come from the extended research of Doucet (2013) on the practice of fathering. She considers the parent-child relations as processes of "intra-active becoming" (Barad 2007:146) or "generative becoming" (Bennett 2010:3). In her research on breadwinning mothers and care-giving fathers she stresses the recurring invisibility of the body in studies of parental care giving and especially the invisibility of male embodiment. The embodied relations of parents and children are issues of "matter": 'people—mothers, fathers, babies, children, others—are in a perpetual state of becoming, and this "becoming" posits the fundamental units of analysis not as things or words, or subjects or

objects, but as dynamic phenomena that are constituted by and through entangled and shifting forms of agency' (Doucet, 2013: 295).

When we take 'becoming' as the unit of analysis – as Doucet does – we may see how embodiment is not only the entanglement of a body-mind-environment but also how their meanings change in time and within 'a choreography of becomings'.

Doucet (2013: 295) gives a full description of the *agencements* of entangled elements in fathering: 'The meanings of fathers and infant care have also been gradually changing, partly through the constitutive intertwining of sociocultural practices, ideologies, and embodied subjects (via workplace policies and cultures, state policies, popular culture, media, and social media, including the burgeoning of daddy blogs), but also through women's rising employment, men's slow take-up of parental leave, and the social acceptance of that leave'.

The title of Doucet's article is inspired by Coole and Frost's (2010:10) expression "a choreography of becoming" where the issue is 'that matter becomes' rather than that 'matter is'. The same expression may be extended to Nick Hopwood's (2014; 2015) work on parental embodiment in care as the enactement of a texture of practices through the four dimensions of times, spaces, bodies and things.

The physical 'matter' of the body, its material-discursive production, its sensible knowing, its choreography of becomings are all instances of embodiment as irreducibly corporeal, social and emplaced. Therefore we can conclude that new feminist materialisms sustain with force the posthuman project of de-centering the subject, the idea that matter has agency, and the need to re-frame epistemology and research methodologies.

A posthuman practice theory can become a research program that takes seriously both the concept of entanglement for undermining oppositional dualism and intra-action for exploring how practice components intra-act. I wish to offer an example from my own research to discuss how practice offers such a re-framing of epistemology.

The practice of artificial nutrition and the *agencement* of caring.

I proposed elsewhere (Gherardi, 2015 forthcoming) to go back to the original French word *agencement* instead of its loose English translation in assemblage. *Agencement* has been used as a philosophical term by Deleuze and Guattari (1987) with the sense of 'in connection with', which gives a first good approximation of the term. The problem, however, is its translation into English as 'assemblage' has changed the original meaning. The French term in fact has a processual connotation – the idea of establishing or forming an assemblage. It focuses on process and on the dynamic character of the inter-acting between the heterogeneous elements of the phenomenon. I

want to point to the tensions implied in the respective uses of the term 'assemblage' (as a final state) or *agencement* (as the process of connecting). While a certain use of the term assemblage risks rigidifying the concept into the thingness of final or stable states, the French term *agencement* works as an evocation of emergence and heterogeneity. The term *agencement* is the key to connecting with the vocabulary of becoming and with the temporality of practice as it unfolds.

In an empirical setting, a research project on care practices in nursing homes, we (Gherardi and Rodeschini, forthcoming, Rodeschini, 2013) illustrate the *agencement* that the changing practice of nutrition is bringing in the way that care practices were ordered.

Caring as a situated practice indicates a collective emergent capacity of taking care of and taking care for, a knowing accomplished as ongoing, adaptive, open-ended responses to care needs.

Besides forms of feeding by mouth, recent years have seen the increasingly frequent use of artificial feeding, a practice which a few years ago was almost unknown in the long-term care of the elderly (Rodeschini, 2013). With the presence of increasingly elderly and increasingly sick residents, artificial feeding is used to a significant extent in almost every nursing home. The practice raises numerous ethical issues, since it is often the last resort in the case of residents with particularly severe malnutrition, or ones no longer able to take nourishment by mouth. At the same time it interferes in the 'natural' end of life and in the public discourses about life and death.

As soon as a patient presents severe nutritional problems, the medical staff usually proposes the application of a percutaneous endoscopic gastrostomy (PEG) or a nasogastric intubation (NGI) to the family. Since the decision on artificial feeding is so emotionally and legally charged, and because it is involved in different sociomaterial relations, it enacts quite different discursive practices in different settings, since matter and meaning intra-act differently within the same *agencement.*

In principle the resident should be the subject who has the choice to accept or refuse the connection between his/her body and the technological device, that in principle is removable and as a matter of fact once it is inserted it is not removed and becomes part of the technobody. The following episode illustrates the intra-action between subject/object in the process of objectivation:

> 'I [Giulia Rodeschini] was with the nursing coordinator in Mr Marco's room. She told him that if he did not start eating again immediately, she would be forced to put him on PEG or NGI. He shook his head [he cannot speak but communicates with a chalkboard] and wrote "no" on the chalkboard (...) When we left the room, the nursing coordinator told the doctor that if Marco continued not to eat and refused PEG, they would have to insert a NGI, and she advised the doctor to talk to Marco's sister'.

The relatives are connected within a complex system of intercorporeality and intra-corporeality: care is an affective and sociomaterial practice that is embodied as body work (work done with the

body on other bodies), mainly in nursing, but also in medical work, that is not only shared, but also co-produced with the bodies and the emotion of the relatives. Care is an embodied, collective, knowledgeable doing, that relays on bodily sensible knowledge (touch, smell, sight, hearing), individual and collective, symbolic and material.

Artificial nutrition severs old connections: food becomes no longer food with aesthetics and emotional properties but simply nutrition, the emotional bonds of feeding are removed since nurses do not spend the same amount of time at the bed of the patient. The value of 'good nursing' is in the words of this daughter of a resident, when she mentions a nurse who was particularly concerned in caring: '*when she inserted my mother's feeding tube, she also gave her a caress. (...) it was impossible for her not to caress my mother.* At the same time what is implied by this sentence is that artificial nutrition changes the way bodies relate to each other, how body work is done, and how emotional labour is carried out.

The *agencement* of the practice 'artificial nutrition' takes on also materialdiscursive elements in the form of the medical discourse in the moment of choice, of the relatives' discourses on their choice, and of the nursing staff discourse (that cannot be voiced aloud and is aired only within their community). I give a short extract of each in order to communicate the atmosphere of a non-communicative plurivocal exchange of multiple viewpoints:

> Doctor, talking with the daughter of a resident: *I can't tell you what to do, the decision is yours. I can only tell you that if we don't do something, your mother will gradually waste away, but with PEG the situation would certainly improve, but the decision on what's best is up to you.*
> Daughter of a resident: *I'm speaking from my personal experience… you're not prepared for it. (...) We arrived there [at the hospital] and I said "yes". It was one July afternoon and I was in the hospital courtyard crying because I didn't know what to do… I felt an enormous sense of guilt, and I said could I really make her die of hunger and thirst? Later I understood that it's not true. It's not true because when persons live in great pain they have the right… I stress they really have the right, to rest in peace.*
> Care assistant coordinator: *They [doctors] put this person on PEG when he was ninety-nine years old... This is what we can't understand…it's a sort of therapeutic obstinacy. Why? What sense does it have? What quality of life can you give a person in this way?*

The choice of artificial feeding, therefore, waves together several materialdiscursive practices in a process whereby the doctors are exonerated (or exonerate themselves) from taking decisions because of the ethical and legal complexity of those decisions in professional and organizational accountability terms. This 'non decision-making' by the doctors affect the residents, their relatives and the non-medical personnel. It shifts the responsibility to the relatives, who, without experience in this difficult choice, often agree to artificial feeding because they do not want their loved one 'to die of hunger and thirst'. This triggers vicious connections in the practice that may lead to consequences not previously imagined by people without personal or professional experience in this

care domain, and who are also closely involved emotionally. The non-decision by the doctor, moreover, reverberates on the non-decision concerning removal of the PEG and thereby makes it definitive.

We witness the emergence of an ethical dimension in the practice of artificial nutrition that is characterized by the difficulty or impossibility of saying 'no' to life-extending interventions, without questioning the meaning and the boundaries between life and death.

Without entering into a long discussion on the ethics of care in feminist theory (Gilligan, 1982), nor in the logic of care versus the logic of choice (Mol, 2008), I wish to stress how ethics is a materialdiscursive component of an *agencement* of a practice and I wish to introduce the concept of corporeal ethics in order to highlight how ethics and politics are intra-acting within it.

The concept of corporeal ethics was elaborated by Rosalyn Diprose (2002), an Australian feminist philosopher, and has been taken up in organization studies by Pullen and Rhodes (2014; 2015a). For Diprose the body, and its interaction with and dependence on, other bodies makes for the 'system of intercorporeality' (Diprose, 2002: 90, quoted in Pullen and Rhodes, 2014: 787) where ethics begins. In Diprose's thinking ethics is pre-reflective, embodied interaction, emergent from openness and generosity towards the other, in a form of hospitality in which the other is welcome in her/his difference, rather than being the institutionalization of a set of conditions and values guiding ethical behavior. In organization studies a 'corporeal ethics' might inform people's behaviors in the context of, and in resistance to the dominating organizational power relations in which they find themselves. Such an ethics has been elaborated as a practice and as an ethico-politics of resistance (Pullen and Rhodes, 2015a; 2015b).

In summing up this empirical research example that illustrates the *agencement* of the components in the situated practice of artificial nutrition in an Italian nursing home, I wish to underline the intra-acting of all the entangled components within 'a choreography of becomings': subjectivities-objectivities, embodied matter, technobodies, intercorporeality, affect and emotions, situated material-discursive elements, medical discourses, and ethical-political discourses about life and death. All these elements, in their entangled heterogeneity, assume agency and enact the capacity of care and caring (not of the simply provision of a service).

A situated practice – like artificial nutrition – is always enmeshed in a texture of connections in action (past and future) and, when we consider the methodological implication in doing empirical research, we can say that following the traces from one *agencement* to another we may be able to trace the connections from one practice to the next and an ethnography of the object(s) (Bruni, 2005; Bruni et al. 2007). This may be the guiding principle to describe the entanglement of sociomateriality that does not privilege either humans nor more-than-humans.

Conclusions

In this chapter I want to stress how the concept of sociomateriality is at the very heart of a posthumanist practice theory and how it is part of the more general turn to practice. Nevertheless the promises that the concept bears with it are yet to be fully explored, starting from an advancement of it far from the tradition of socio-technical system theory and forward in the direction of a relational material epistemology. In the effort of exploring, both theoretically and methodologically, the way in which sociomateriality may become the symbol for the disappearance of the hyphen that connects but separates oppositional dualisms, new feminist materialisms may connect with similar epistemologies. The diffusion of Karen Barad's work and vocabulary outside feminist theory can be considered as the beginning of a conversation between separate fields of research. In writing about the shift from 'inter' to intra-thinking, John Shotter (2014) notices how 'small changes in words can provide big changes in our orientations'.

After a brief illustration in the field of organization studies and information systems of the different epistemologies – substantialist versus relational – the chapter offers a selective immersion in new feminist materialisms to argue that from environmental and corporeal feminisms the concept of sociomateriality may be enriched with a special consideration to the materiality of the body and of material subjectifications. This argument is illustrated with references to empirical research projects, since the problem of how to craft a methodology for empirically studying the entanglement of sociomateriality is still open and crucial. In suggesting both the difficulties of methods for studying practices within a posthumanist epistemology and the tentative nature of solutions I present a short example from my own research practice.

In discussing the effects of a technological change in nutrition practices of nursing homes – from nutrition to artificial nutrition – I propose to consider the new practice as an *agencement* of heterogeneous components that, in their connections in action, assume agency. This example may illustrate the main concepts of a posthumanist practice epistemology: embodiment, materialdiscursive practices, and corporeal ethics-politics. The main effect of the changing practice of nutrition in elderly care is a quasi-silent problematization about life-extending interventions, and the meanings and the boundaries between life and death. My argument is constructed therefore around the evidence that both ethics and politics are sociomaterial and are part of the *agencement* of the heterogeneous elements in the becoming of a practice.

A final comment on sociomateriality is linked to the concept of epistemic responsibility (Code, 1987) since epistemic analysis cannot be separated from ethical analysis, and we as researchers

should be responsive to how the distinctions we embrace construct our experiences, and how these distinctions conceal as well as reveal what we research in the practices that we study.

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[i] Ignorance is a phenomenon often overlooked in epistemological scholarship. Feminist epistemologies of ignorance (Tuana and Sullivan, 2006: vii) were born out of the realization that we cannot understand complex practices of knowledge production without understanding the practices that account for not knowing. In fact the persistence of controversies often is not the consequence of imperfect knowledge but a political consequence of conflicting interests and structural apathies.

Historicity in Complexes of Practice, Activity Timespaces and Material Arrangements: Rethinking the Determinacy of the Activities of 'Professionals'

Stanley Blue and Nicola Spurling

Introduction

Understanding and potentially steering patterns and trajectories of energy demand presents new challenges for social theory. In this chapter we focus on two such challenges: (1) conceptualising the role of professions (such as transport planning, urban planning, designing) in re-making demand in everyday life and (2) understanding peaks, sites and cycles of energy demand in large complex organisations. Using illustrative examples, we extend what we take to be central lines of enquiry into the conceptual roles of (1) activity timespace and (2) historicity in responding to these challenges.

In taking this approach we work with the proposition that forms of energy consumption, including those associated with large, complex organisations, are the outcome of interconnected social practices (for example caring, prescribing, delivering, treating, cleaning and operating form some of the interconnected social practices of the NHS). We also emphasise that both the activities of 'professionals' and of 'lay people' are enactments of social practices and we recognise that complexes of practice are partly constituted by and always embedded in material arrangements. Finally, we argue that current activities always have a history and that there are multiple relationships between past, present and future activities. In linking these ideas we suggest that the energy demands of complex organisations emerge from the temporalspatial organisation and historicity of practice complexes. More concretely we outline some of the qualities of inter-practice relations as they stretch across space and time, and suggest how these understandings of past and present are also relevant for conceptualising futures.

Practices, Ordinary Consumption and the Professional

Complexes of Practices as the Unit of Enquiry

We begin with practices (in the plural), how they interconnect and interlock, how they are organised, and how they change (or metamorphose) over time. This starting position is more useful than focussing on *a practice* in isolation if we want to understand the patterns and trajectories of energy use in everyday life, and how they change. For example, changes in patterns and peaks of household energy use are entirely connected to daily and weekly patterns of work and school (amongst many other activities) which have implications for when and where energy is used. The organisation of work in a complex organisation (like a hospital) consists of interweaving together many different practices in shared projects.

Headway has already been made introducing and developing multi-practice concepts into debates of sustainability, energy and transport demand in the domestic sphere (Shove, Pantzar, and Watson 2012; Watson 2012; Spurling et al. 2013). This includes concepts of practice bundles, complexes, systems, interconnections and interlocking, offering a conceptual language with which to talk about connections and relationships of varying types and scale. These theoretical developments have offered new insights on car dependence (Shove, Watson, and Spurling 2015), suggested alternative sites for intervention (Shove, Pantzar, and Watson 2012; Spurling and McMeekin 2015; Strengers 2015; Blue et al. 2014) and demonstrated that understanding patterns of consumption (as an outcome of practice) is not limited to the 'micro' or the 'local' but in fact requires analysis of a broad range of interconnected practices including policy-making, planning, engineering and so on (Spurling et al. 2013; Watson 2012).

Our position is that to date the development of multi-practice concepts (bundles, complexes and systems) inadequately accounts for and captures what Schatzki describes as "activity timespace" (Schatzki 2010). Although these concepts offer a step in the right direction, we still lack the conceptual resources for analysing the temporal and spatial patterning of energy demand which such complexes constitute, and the relations of past, present and future which are so key to understandings of stasis and change across time. Our chapter addresses and contributes precisely these aspects.

Our main contribution is to introduce two concepts from Schatzki (2010) to discussions of energy and transport demand, namely that of activity timespace and a related conceptualisation of historicity (how the past is present in current activity). In the sections that follow we introduce these ideas using illustrative examples from hospital life, but first of all we briefly describe the ongoing debate which our chapter contributes to.

Ordinary Consumption (as an outcome of practice)

The uptake of practice theoretical ideas to understand energy and transport demand has a long intellectual history that is entangled with the sociology of consumption. Over the past decade or so there has been a shift in focus within the sociology of consumption from individual consumers to the cultural, economic and material structuring of consumption (e.g. (e.g. Cohen and Murphy 2001; Gronow and Warde 2001).

Central within these debates has been the uptake and development of the 'practice turn' (Schatzki, Knorr-Cetina, and von Savigny 2001), and the idea that people consume objects, resources and services not for their own sake but in the course of accomplishing social practices (Warde 2005). A growing number of authors have argued that theories of practice, and associated analyses of how resource intensive practices take hold, change and become widespread, have a great deal to offer to understandings of the social, institutional and infrastructural conditions of less resource intensive ways of life (Shove 2003; Southerton, Chappells, and Van Vliet 2004; Chappells and Shove 2005; Shove and Spurling 2013).

Ultimately these intellectual moves were concerned with better understanding why we consume environmentally significant objects, resources or services as much as we do in the way

that we do. The significance of focussing on practices, rather than objects, people, or their motivations is that it demonstrates consumption (especially of finite resources) is not an outcome of individual choice or rational action, as portfolio models and behavioural economics might suggest. Neither is it the kind of 'conspicuous consumption' that is primarily part of identity formation or distinction. Rather objects, services, resources are consumed in the course of achieving social practices (Warde 2005).

These theoretical moves have achieved a great deal, repositioning individuals within theories of consumption, and providing alternative understandings of increasingly resource-intensive lives. However, there are limitations as well, three of which are important for this chapter:

First of all, within this work, taking social practices as the unit of analysis has been realised by conceptually and methodologically bounding 'ordinary' 'everyday' practices within which such consumption occurs, examples include showering (Hand, Shove, and Southerton 2005), keeping warm/cool (Gram-Hanssen 2010), driving (Spurling and McMeekin 2015; Shove, Watson, and Spurling 2015)and eating (Warde 2013). Studying practices in 'isolation' has limited value for understanding patterns and trajectories of energy demand.

Second, the methodological bounding outlined above has resulted in a conflation of the practice concept with ordinary consumption or domestic life, resulting in researchers identifying the various 'actors' which have influence on these practices (e.g. policymakers, urban planners, architects) – an idea of 'distributed agency' - as though such actors are somehow disembedded from the plenum of practice. It is a simplistic notion whereby steering demand becomes viewed as a case of identifying the actors that have potential to influence a practice, and getting them to act (or act differently). This is problematic (aside from ontological inconsistence) because it ignores the practices (of policymaking, urban planning, architecture) within which such actors are caught up.

Third, because these developments were located within the sociology of consumption, there has been almost exclusive focus on domestic settings: laundry, bathing, eating, and personal transport. This has been to the exclusion of energy and transport demand in non-domestic settings, such as large complex organisations, and the conceptual tools for analysing these sites remains under–researched.

It is for these reasons that we take multi-practice concepts as our starting point, conceptualising the activities of both 'professional' and 'lay people' as social practices. It is why we explore the concepts of activity timespace and historicity, which we suggest have untapped potential for understanding different multi-practice relationships.

The 'Professional'

To those familiar with social studies of science and organisation studies, conceptualising the actions of professions as performances of social practices, and viewing large, complex

organisations as complexes of multiple practices will not be new (Gherardi 2009, 2013; Latour and Woolgar 1979; Wenger 1999; Schatzki 2006; Spurling 2012; Trowler, Saunders, and Bamber 2012; Spurling 2015). However, for those embedded within the sociology of consumption this needs a bit more explanation.

As noted above, it has been recognised that understanding consumption as an outcome of practice takes analyses beyond the local and the micro, and beyond the world of the consumer. Doing the laundry, having a shower, keeping warm in winter have all changed in relation to the kinds of infrastructural provision and technologies available in the home (Shove 2003; Browne, Medd, and Anderson 2013). Where and when many activities take place – e.g. swimming, running, even skiing – have been transformed by the indoor environments that have been designed and built for them, the circulation and promotion of equipment and activities (Shove and Pantzar 2005), and the policies and campaigns of government bodies. Forms of planning that privilege the car have created patterns of life dependent on motorized private transport (Urry 2004) and the redesign of cities is having implications for where people live and work (and the relation between the two).

The significance of these activities of policy, design and planning for patterns of energy demand can be usefully conceptualised as practices. A cursory reminder of the concepts of practice performance and entity support this point. The main point of the concepts of performance and entity is to show that activity and action are in a recursive relationship, one cannot exist without the other.

> "Each of the linked doings and sayings constituting a practice is only in being performed. Practice in the sense of do-ing, as a result, actualizes and sustains practices in the sense of nexuses of doings. For this reason, a general analysis of practices qua spatiotemporal entities must embrace an account of practice qua doing; in more standard language, it must offer an account of action." (Schatzki 1996: 90)

The point here is that performances should not be understood independently of entities. The actions of designers, from a practice approach, are tied up with activities of design.

To conceptualise such doings as practices rather than, for example, the attitude-motivated actions of more or less influential individuals, recognises that 'professionals' are themselves caught up in ways of doing that are shared, that are the outcome of embodied learning, that each have their own history, skills, knowledges, tools and materials which have implications for what is done in, and what is produced through, the everyday work of design, for example. Recognising that practices that are problematic in terms of energy demand (like driving) exist in practice complexes which include transport planning, urban planning as well as shopping, working and so on has been taken forward to reconceptualise car dependence (Shove, Watson, and Spurling 2015). However, the concepts developed to date do not adequately handle the relation of the past to present, of past actions of design that matter for present complexes of activity of which driving is a part.

There is a second way in which these conceptual moves are significant. Viewing large complex organisations as complexes of multiple practices offers a new way of understanding non-domestic energy use. It shifts from the almost exclusive focus on domestic energy consumption that has pervaded policy and research, and focuses on organisations as sites of consumption and intervention. In contrast to work in organisation studies e.g. (Schatzki 2006), the approach we develop in pages that follow draws no distinction between the professional and the ordinary – between the domains of providers and consumers, instead focussing on the social practices that combine in complex organisations, and the timespace infrastructure that results.

Therefore, in order to develop a conceptual analysis that provides a more careful picture of how professional practices shape the everyday, that takes complexes of practice as its starting point, and that moves out of the domestic sphere, in what follows we illustrate our argument with examples from hospital life. We use this example for three reasons. The hospital is an intriguing site of multiple activities and socio-temporal peaks, sites and cycles and has been studied as such (Zerubavel 1979). Second it acts as an example institution that clearly plays an important role in organising and orchestrating those social cycles. Finally, hospitals vary in terms of the kinds of infrastructure, built environment and technology which constitute them and the past design and implementation of these material arrangements is obviously important for contemporary hospital life.

Interwoven Activity Timespaces

Performances, Entities and Complexes

The routine and everyday activities that take place in the hospital daily, weekly, yearly, seasonally, etc. can be thought of as a complex of practice-entities that include: diagnosing, treating, caring, prescribing, delivering, cleaning, eating, visiting, transporting people and goods, and so on.

We have already noted that practice performances are not independent of their respective practice entities. The actions planners and policymakers are bound up with activities of planning and policymaking. That said, the practice entity is never informed only by its own performances in a singular relationship. Rather a practice entity is always embroiled and figured in relation to other recursive processes within a complex of practices at any given moment. For example, 'normal' performances of nursing are not only shaped in current enactments, but also in enactments of hospital design. At the same time nursing also exists in complexes with other practices like diagnosing, prescribing and so on.

This observation is not new, having already been captured in the multi-practice concepts outlined earlier (although which relations are referred to by which terms is unclear). However, we argue that the prominence and importance of activity timespace is obscured in these formulations and it is this concept coupled with the concept of historicity that provides a more

nuanced explanation of the role of 'professions' in contributing to the organisation of everyday life.

Schatzki's notion of activity timespace points out that human activity has temporal and spatial qualities and that these qualities are important and organising constituents of collections of such activity. He writes:

> "… activity timespace is an important component of social space and time, that interwoven timespaces are a constitutive feature of social phenomena, and that history encompasses metamorphosing constellations of indeterminate temporalspatial events." (Schatzki 2010: x)

Spaces, Times and Timespace

The routine practices that make up hospital life have their objective times and places when and where they occur. For example, visiting patients might happen on the ward between 6pm and 10pm every night, eating might happen on one particular ward after it has happened on another, and delivery of goods might occur at a number of locations periodically throughout the day. These objective times and spaces are of course important for understanding when and where demand for energy occurs. But the concept of timespace does more than just show that practices have times and places.

Complexes of practices are organised by their relationships to each other. Some of these relations have temporal and spatial qualities. For example, practices such as diagnosing, prescribing and treating have a particular temporal sequence. Similarly certain practices have spatial relationships. Some exclude each other, like radiography and having a meal. Others require spatial proximity, such as scrubbing up and operating. These temporal and spatial relationships are important for understanding the order, frequency, proximity, etc. of practices in a given complex, how they hang together. But the concept of activity timespace goes even further than showing that relationships between practices have temporal and spatial qualities.

Practice complexes are, in part, constituted by their activity timespaces. That is to say they are inherently temporalspatial. These timespaces are multiple and interwoven, and they are constitutive of complexes of practices.

This is different from the idea that things happen at a particular clock time, or at a certain point on the map. It is to say instead that a certain activity might come before or after another, that it might happen for a set or changing duration, that it reoccurs with a certain periodicity in relation to other activities, that it requires a certain environment that is nearer or closer to the environment of other activities.

These qualities of practices, their dimensionalities, that require sequences of events like diagnosing, prescribing and treating, or distances to be travelled, like moving a patient from

accident and emergency, to radiology and then to B ward are, in part, what hold practices together. They form interwoven timespaces, the backbone of practice complexes:

> "… interwoven timespaces form an infrastructure that runs through and is essential to social affairs." (2010: 65)

Material Arrangements and Interwoven Timespaces as Infrastructures

Interwoven timespaces can be thought of, in the first instance, in relation to complexes of practice in the same way that material arrangements underpin practices. In recent work, Shove et al. (2015) have described material infrastructures as best representing: "…something of a trellis-like framework through and around which the combining and loosening of practice complexes occur." (10)

So, whilst the design and implementation of new public transport routes from the city to the hospital effects and disrupts the complex of activities that make up hospital life (perhaps new cycle paths lead to decreases in driving to work, but increased showering), it also has to meet the demands of established (and changing) complexes of practices (e.g. it is unlikely that new travelling practices would take hold if the infrastructure stopped 5 miles short of the hospital, or only dropped people off once a day at 11pm at night).

Like the material arrangements that underpin practices, interwoven timespaces form a kind of infrastructure through which activities coordinate and aggregate. This infrastructure is a property of the practice entity not of performances. But performances are shaped by the interwoven timespaces that constitute complexes of practices.

> "The organization, regularities and settings of a practice engender a net of interwoven timespaces…" (2009: 40)

So any new successfully designed and implemented shift in the temporal spatial arrangements of the hospital, again both must respond to the established complex of practices that these timespaces support as well as change them. For example, shortening visiting hours in a bid to reduce building energy use would be potentially problematic (beyond obvious reasons for care) because it would require shifting established and fixed sequences of staff care, food provision, eating, and evening routines.

Most importantly for our discussion of professional and ordinary practices, these two trellis-like frameworks of material arrangements and activity timespace are interrelated. Material infrastructures support and maintain established interwoven activity timespaces and the complexes of practices that they support and vice-versa.

Understanding the timespace of human activity helps us understand how and why some practices might stick (have significant consequences for the reproduction of complexes of practice) or not by (1) showing up activity timespace as a constituting infrastructure and (2) that

performances are not constituted by the past-present-futures of that practice entity, not independent of what has come before or what will come next.

The co-evolution of complexes of practices, material arrangements and interwoven activity timespaces, depends on the openness and opportunity for practices at a given time to disrupt, rearrange or strengthen these arrangements and imprint particular activity timespaces on future complexes of practices.

Historicity

Building on this discussion (that performances are not independent of entities and that entities are actualised by a broader range of performances constituting the activity timespace), it is also important to note that it is not only other practices in a given moment that effect the likelihood of repetition and change, but that the history of practices and complexes of practice are fundamentally important for understanding what future iterations are likely and possible.

Human activity remains indeterminate and what has happened in the past does not directly prefigure what will happen in the future.

In philosophy, historicity refers to the idea or fact that something has developed through history, that phenomenon have historical origin. Historicity is therefore about the relationship of the past to the present. These relations of the past to the present can be conceptualised in different ways.

Distinguishing these differences is not simply academic, such assumptions are embedded in policy programmes and modelling tools, they have implications and effect, both on current decisions and investments, and on how futures are conceptualised. For example, a common framing within energy and transport policy is that levels, patterns and trajectories of energy consumption are an acceptable and inevitable sign of 'progress', and they are patterns which can be extrapolated into the future. It is such assumptions which have underpinned the predict and provide paradigm of energy and transport policy for the past half a century (refs). Within this formulation the present is a moment in a trajectory from past to future which is normatively assumed to be a trajectory of progress.

It would be easy to assume that contemporary and future hospitals are bound to trajectories of increased energy consumption, because of advancements in medical technology which have brought computerised equipment into almost every clinical procedure, as well as administrative and service functions of the NHS. Focussing on the interwoven timespaces of hospital life might offer alternative trajectories in which such clinical advancements are retained whilst reducing energy consumption (through orchestrating practices in different ways).

Theories of practice offer conceptual tools which help to think differently about how past activity figures in the present. History comes to be (is actualised) through present performances

that are shaped by a constellation of practice-entities, interwoven timespaces and material arrangements, themselves the outcomes of past actions. The enactment of present performances and re-production of practices maintain and change the future material arrangements and interwoven timespaces that will inform future complexes of practice.

In the previous sections we set out the idea of activities as indeterminate temporal spatial events. That current activities are indeterminate does not mean that they have no relation to the past. Schatzki writes:

> "…past phenomena circumscribe, induce-orient, and underwrite the public manifestation of – but do not cause or antecedently pin down – present activity." (Schatzki, xxxx:x)

The relation of the past to the present, in any specific instance, is an empirical question: 'what is the presence of the past in current activity?' This also begs a further question 'by what processes is the past present in current activity?' This is significantly different to the idea of the past as a normative trajectory passing through the present and into the future, or to the idea that the past causes the present.

Providing an exhaustive catalogue of processes by which the past might be present is beyond the scope of this chapter, however, several fruitful lines of enquiry can be identified. The first aspect to note is that 'the past' can be conceptualised and researched at different temporal and spatial scales. For example, 'the past' can be different durations (e.g. the biography of an individual nurse/doctor, the 'life' of a hospital building, the 'life' of a particular hospital – both its built infrastructure, but also the changes in organisational structure, management and so forth that it has seen along the way, or the past of medical knowledge itself), and has varying spatial scales (a ward, a wing, a building, a hospital, hospitals etc), and as being different (plural) across space (contemporary medical practices taking place in hospitals of different age and with different histories).

Setting aside these varying temporal scales of 'the past', a focus on the presence of the past in current activity might focus on built and adapted structures and infrastructures, viewing them as the embedded materialisation of metamorphosing activity time spaces – for example viewing car dependence as an outcome of interconnected practices materialised in road networks and land use planning (Shove et al, 2015), or the Victorian hospital layout as an outcome of interconnected nursing, surgical, medical practices materialised in brick and mortar, which has been adapted as these interwoven activity timespaces (of nursing, surgery, medicine) have metamorphosed across time.

Previous decisions about hospital design still matter for the sequencing and duration of activities in the present, and even which activities are possible. Distances between sections of hospitals, the sheer amount of physical space and bed space, the number of operating theatres, the available technology shape interwoven activity timespaces. Of course the practices themselves shape what kinds of technology required and how they are used, but fundamentally

the framework of interwoven activity timespaces significantly matters for how changes to material infrastructure are born into practice.

Understanding the past in the present might also be concerned with processes of institutionalisation. As noted above processes, practices, projects and institutional timetables become interwoven and institutionalised creating time space infrastructures which may persist beyond the original reason for being. For example a system of shift patterns that have remained unchanged for 30 years. In fact, the interweaving of timespace and material infrastructures is likely central to the institutionalisation of processes and practices.

If a change in infrastructure clashes with a complex of practices that is underpinned by a well-established and rigid, interwoven activity timespace, it will be more difficult to modify that set of practices. A crude example, the hospital could not move to energy provision on an off-peak basis because many activities in the hospital (like saving lives) cannot be shifted to certain points in the day. The point here is that interwoven activity timespaces, in relation to material arrangements, form frameworks that underpin and are necessary components of, complexes of practices.

The knowledges, practices and tools of building design and transport planning have developed over decades, with assumptions, standards and algorithms becoming embedded and implicit aspects of everyday work. As such these past decisions can still have effect in the present. This suggests there is value in empirical work which explores how assumptions and standards are part of contemporary hospital design, and what rationales underpin these standards. At a different scale, we might focus on the embodied knowledge, memory and experiential learning which is brought into contemporary practice performance, in both professional and ordinary domains.

Such lines of enquiry would deepen understandings of the relationship of past to present, and also have potential for those concerned with conceptualising futures.

Just as historicity refers to our conceptualisation of the presence of the past in current activity, we might also develop conceptualisations of futuricity. This would refer to our conceptualisation of the presence of current activity (the future past) in the current activity of the future present. The lines of enquiry outlined above would also apply here, offering some alternative, sociological, ways of thinking about past, present and future quite different to those implicit in current approaches to energy and transport policy.

Conclusion

In this chapter we have sought to contribute to emerging ideas within the literature and to applied empirical studies of theories of practice on multi-practice concepts. We have emphasised that activity timespace and historicity should be central both to social theory and analysis that seeks to understand how social order is made and unmade. We argued that to understand complexes of practices it is

necessary to understand how they are underpinned and co-constituted both by material arrangements and interwoven activity timespaces. Understanding how the past actions of 'professionals' is figured in present activity requires understanding the historicity of this co-constitution. This argument contributes, particularly, to four ongoing debates within theories of practice.

First it contributes to considerations of emerging multi-practice concepts. Current ideas about bundles, complexes, systems are dealing seem to be dealing separately with issues that we claim overlap. On the one hand, how 'ordinary' practices are interconnected e.g. how driving is an outcome of practices of work, school, home, shopping, leisure, etc. On the other, how practices of driving are an outcome of the ordinary intersecting with 'the professional'. We suggest that working with the missing concepts of activity timespace and historicity, is the path to bringing these two lines of enquiry together, both bringing the focus beyond the domestic sphere and at the same time maintaining an ontological primacy on practices.

Second, and related to the first point, we show that practice theory is not only relevant for studying energy and transport demand in the domestic domain as it has been accused of. Instead there are a number of underutilised and under developed concepts that can be taken further to bring practice theory out of the domestic sphere so that it can account for the professional realm and the role of complex institutions orchestrating the everyday. We have demonstrated the potential that just these two concepts have for overcoming artificial boundaries between the domestic and the non-domestic, the professional and the ordinary.

Thirdly, we have contributed to discussions about 'systems of practice', especially problematizing the search for a 'driver' within such a complex 'system'. We question where exactly our starting within the socio-technical system (or complexes of practices, material arrangements and interwoven activity timespaces) would be. If our question is how does driving change and persist then methodologically it makes sense to begin with driving. However, we should be wary about conflating this with the analytic question of where power lies or how it is distributed.

Finally we have contributed to existing work on 'professional practices' e.g. studies of what engineers, architects, urban planners do, by making steps to conceptualise the relations between historicity and interwoven activity timespaces. We propose that, in debates of energy and transport demand, what is interesting about the role of 'professional practices' is not what professionals do per se, but rather how activity timespaces, like those made in hospital life, are partly made in (past and present) practices of hospital planning. That is to say that it is more interesting to understand how hospital life and hospital planning practices overlap and shape each other across space and over time. These conceptualisations can be transferred to other domains, for example they might be applied to other complex organisations, such as universities, prisons, schools, etc. Similarly they are relevant for studies of energy use in 'everyday' life, for example understanding how patterns of driving and the material and timespace infrastructures it is part of are partly made in (past and present) practices of urban planning.

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Is small the only beautiful? Making sense of 'large phenomena' from a practice-based perspective

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In this chapter, I will discuss how a practice-base sensitivity can be used to address big issues and 'large scale phenomena'. The issue is central to the advancement of practice oriented studies for two main reasons. First, practice-based sensitivities are often pigeonholed as part of micro-sociology and deemed unsuitable to deal with some of the big issues of our time. Examples of big issues would include the nature and functioning of the financial market, large institutional arrangements, the education system, bureaucracy and the future of the planet. These issues are considered big both because they are highly relevant and because they are highly complex and perceived as transcending local specific situations, individual biographies and scenes of action. Second, the issue of how we address such 'large scale phenomena' is closely related to the issue of what can be done about them. In other terms, the question of how we address 'large scale phenomena' impinges on what are the practical uses of practice theory.

In this essay, I will discuss the position of practice based approaches on 'large scale phenomena' vis-à-vis the idea of macro phenomena, levels of reality and localism. I will then critically survey some of the ways in which practice oriented scholars have addressed 'large phenomena' and conclude that rethinking the ontological status of large scale phenomena requires also to consider the practical relevance and what such study is for.

1 ON 'LARGE SCALE PHENOMENA' AND PRAXEOLOGY

In this essay I take practice theory, practice-based studies, practice approach, or practice lens as different names to denote a family of orientations that place practices as central for the understanding of organisational and social phenomena. Authors who embrace this orientation suggest that matters such as social order, knowledge, institutions, identity, power, inequalities and social change result from and transpire through social practices. My aim here is not to

build a practice-based theory of big social phenomena – that is, to provide a theorization of large scale social phenomena building on a specific theory. Rather, more modestly, I am interested in the different ways in which large scale social phenomena can be addressed using different practice-based approaches. In other words, I approach the issue from a methodological rather than a theoretical perspective. In my view, the practice approach is first and foremost a coherent (which does not mean unified or unitary) set of sensitizing theoretical categories, research methods and discursive genres that allow seeing practices everywhere. Put yet another way, my aim here is to examine how 'large phenomena' transpire amid and emerge through different theories of practice. Accordingly, while I do have my own view of what practices consist in[i] here I will remain open and examine the question from different practice-based vantage points.

1.1 Practice approaches and the 'macro': large phenomena from a layered vs. flat ontology

One of the defining characteristics of all coherent practice approaches is the belief that concrete human activities – with blood, sweat, tears and all – are at the centre of the study of the production, reproduction and change of social phenomena. Pierre Bourdieu, for example, indicated that to understand crucial aspects of French society we need look into ordinary settings such as kitchens and dining rooms rather than high places or abstract spheres populated with structures, functions and the like (Bourdieu, 1984; Bourdieu and Wacquant, 1992). The texture of (French) society is in fact reproduced daily through ordinary activities and dining-room and conversations such as "Have you been respectful to your teachers in school today " and "this is not the proper way to sit at the table: sit up straight!" Similarly, one of the greatest recent social changes in North American history was triggered in the back of an old bus by a small number of courageous women and men who refused to leave their seats and in so doing interrupted the reproduction of segregation – in practice (Parks and Reed, 2000). This belief has critical methodological implications in that it requires that at some point in our investigation on practice we need to encounter real time activity in its historical situatedness –although how this can be done varies. How strictly is this criterion adhered to constitutes one of the dimension along which different practice approaches diverge.

Some (although not all) practice approaches generalise the idea above and suggest that all social phenomena are constituted by and through the aggregation of practices and the

reproduction regimes that they constitute. These authors therefore embrace a flat ontology and join forces with other relational sociologies (Ermibayer, 1997) which suggest in different ways that all social phenomena, small scale and large scale are constituted through and experienced in terms of 'micro' situations. The task of social scientists is therefore to lay bare this process constitution one at the time. The aim being to display their constitution in the text, that is, reassemble the social in front of the eyes of the reader or viewer or listener (Latour, 2005). Authors who adopt a flat ontology caution that although practitioners customarily use abstractions to refer to "summaries of the distribution of different microbehaviors in time and space" (Collins, 1981, p.989) these abstractions and summaries do not have causal power and should not be turned into entities with autonomous existence.

1.2 Not all practice theorists believe in flat ontology.

This position is shared by many but not all practice theorists. In short, not all practice theorists embrace a flat ontology. Two examples are Bourdieu and Giddens who hold fast to the idea that such things as structure, power and fields exist in their own right, although they need to be reproduced in and through practices. A similar stance has been adopted by authors such as Norman Fairclough (2005; 2013) who combines an attention for practice with a critical realist position; and Glynos and Horwarth (2007) who, building on a Lacanian sensitivity, suggest that practices are governed by a dialectic of social, political and fantasmatic logics – the latter providing and affective explanation of why specific practices and regimes grip subjects. In short, not all practice theorists subscribe to a flat ontology.

Differences in ontological positions with respect to the presumed layering of social matters are reflected in the conception of what counts as large phenomena. Authors like Bourdieu, Giddens, Fairclough and others who admit the existence of phenomena outside of the realm of practice conceive 'macro' social phenomena in terms of long-term, complex and far reaching social processes. These processes, which are beyond the discretionality of any individual, constitute 'external forces' which structure our daily conducts and as such they should be treated as self-subsistent entities: social classes, the market, the state. For these authors, such entities need to be explained in terms that are different from those used to explain mundane social intercourses, in common parlance they constitute a different level of social reality. Micro and macro large scale social phenomena are made of different ontological stuff, so to speak.

Authors who embrace a more relational standpoint, on the contrary, reject this view and denounce it as a theoretical sleight of hand. Complexity and size have nothing to do with the existence of so called 'macro' phenomena or at least they do not warrant granting them a different ontological status. For one thing, plenty of evidence exists that even the most ordinary 'micro' situations and discursive interaction are extremely complex and intricate. For example, the extensive body of work of conversation analysis has unearthed a Pandora box of mechanisms, effort, and skilled performance in even the most mundane of discursive interactions. At the same time, social conducts that according to the prior view we would hardly consider 'large scale' –for example the practice of greeting other people at the beginning of a social encounter, are in fact both ubiquitous, pervasive and critical to sustain the fabric of social relationships and its orderliness. Indeed, one can hardly think of a phenomenon that is more 'macro' and large scale than greetings.

For authors who subscribe to flat ontology, then, the idea of large phenomena points at issues that are highly ramified in time and space and for this reason difficult to grasp *and* . From this view, the ascription of a special ontological status to "large scale phenomena" is a combination of our lack of knowledge and the frustration with the fact that we lack capacity to get our head around them. In short, 'macro sociology' is a, among others, a sociology for impatient people.

1.3 Flat ontologies: Differences between individualism, Situationalism and Relationalism

Fundamental distinctions, however, also exist even between authors who subscribe to a flat ontology and accept the idea that when it comes to the social world, it is practicing all the way down. These distinctions are closely related to the praxeological orientation they adopt. Three main general variants are discussed here.

First, there is still a tendency – or maybe a risk – of practice oriented authors to fall back unto a methodological individualism position, that is, the idea that large scale social phenomena can be explained in terms of the dispositions and beliefs of individuals and their interlocked intentionality. This position, which is more common than one would expect (I will intentional refrain from naming names) often derives from the reductive idea that practice is basically an orientation towards 'what people do', the emphasis being on *people* as in 'well-formed individuals'. Practice theories reject this idea that practice theory is about people performing some pre-existing praxis, routine or traditions. This view in fact often leads to an overdetermined and over theorised outlook which explains social affairs in terms of rational

individual choices or (more or less successful) efforts to instantiate pre-existing rules, plans of action or mental schemes (see Schatzki, 1996, 2002 for an discussion). In alternative, coherent practice approaches take organised activities (practices) as the basic unit of analysis – conceiving individuals as carriers and performers of practices. The assumption is that actions, decisions and agency (what to do next, if anything) only acquire meaning as part of a practice and its temporal and historical unfolding.

Second, a group of authors usually associated with ethnomethodology and its later development and diaspora endorse what Knorr Cetina (1981) describes as 'methodological situationalism'. The notion of methodological situationalism adds a critical restrictive condition to the above mentioned principle that 'detailed observation of activity in situ is not only considered a prerequisite for any sociologically relevant understanding of social life but concrete social interactions may also be considered the building blocks for macro-sociological conceptions' (Knorr Cetina, 1981, p. 8). The supplementary condition being that nothing can be said of what happens beyond such in situ concrete individual social interactions. In its radical version, methodological situationalism suggests in fact that the only empirically acceptable unit of analysis in social investigation are orderly scenes of action taken one at the time. While scenes of action constitute sequences and more complex configurations, empirically speaking we can take into account of such sequences only to the extent that (1) they are invoked by participants in a particular scene of action or (2); they are made empirically present through other observable means that must be significant both for competent members and competent observers; and (3) they are demonstrably relevant and consequential for what happens in situ (or even in the text at hand). In short, what counts as the previous step in sequence is de facto decided when the next step it taken. The same applies to 'contextual conditions', resources and by extension to large phenomena such as power, institutions, and gender (Schegloff, 1997; Sarangi and Roberts, 1999). Nothing can be said outside these restrictive boundary conditions. In this extreme version therefore large scale phenomena are not accepted as a legitimate object of inquiry and at the most they can be considered to become large through the number of their repetitions or their consequences (as in the example of greeting).

In this very narrow interpretation, methodological situationalism risks to become an instance of what Levinson (2005) calls 'interactional reductionism' which he defines as the tendency to reduce all social phenomena to self-organizing local interactions. In so doing the approach turns the potentially generative idea that social phenomena are assembled amid and through

practices situated in specific social and historical conditions into an empirical straight jacket. When pushed too far, the idea that "social phenomena are unknown and unknowable unless they can be based upon knowledge derived from the analysis of micro-social situations" (Knorr Cetina, 1981, p. 8) restricts both the range of empirical options and, as I will discuss in the end, restrict the potential practical uses of practice approaches.

A third group of scholars, to which I belong and that will constitute the focus of the rest of the chapter, maintains what we can be defined as a form of relational or connected situationalism. The basic intuition, which distinguishes this group of scholars from the previous one, is that the basic unit of analysis is not a single scene of action or a specific situation or instance of the accomplishment of a practice but rather a chain or sequence or combination of performances *plus* their relationships -- what keeps them connected in space and time. From this perspective social phenomena are effects of and transpire through the association in time and space between situated performances and they can therefore be understood only if we take into account the nexus in which they come into being. What happens here and now and why (the conditions of possibility of any scene of action) is inextricably linked to what is happening in another 'here and now' or has happened in another 'here and now' in the past (and sometimes in the future). The position that I am advocating here therefore takes the study of practice as inextricable from the study of their social, material hinterland (Law, 2004). The idea of hinterland (as opposed, e.g., to the static idea of context) refers to the ramifying territory and set of activities which make any city centre possible. We can only account for the pulsating life of metropolis like Paris and Barcelona if we consider the activities that take place in their hinterlands -- although the relationship between the two is neither simply causal or one of containment and as such it cannot be captured by any number of 'arrows'. This becomes visible when a strike in the metro depo interrupts dining reservations, private parties and theatre nights. Because the hinterland of any practice is composed first and foremost of other practices, the study of large scale phenomena from a methodological connected situationalism position predispose towards a rhizomatic sensitivity. A rhizomatic sensitivity predisposes to think of associations of practices as a living connection of performances and what keeps them together; it offers an image of how the practices grows, expands and conquer new territory; it suggest that to study how large phenomena emerge from and transpire through connections between practices we should always start from a "here and now" and follow connections; and it finally offer a model for representing the gamut connections in action. As we will see below, depending on the sensitivity of the researcher this can take the

form of an overview –so that large phenomena appear as textures, nexuses, or meshes or assemblages of practices[ii], although this is not inevitable and other option to praxeologise large phenomena are also available.

In summary, from a connected situationalism position, then, the study of large phenomena amounts to (a) the investigation of how the large rhizomatic assemblages of situated activities look like, how they come into being, are reproduced and change; and (b) how these living assemblage are made available and become relevant and consequential in other situated activities or assemblages thereof by virtue of being turned into summaries and/or representations. The difference between studying and giving accounts of small vs. large scale phenomena impinges on practical and methodological issues (time, money, access) rather than being based.

The challenge is how to conceive, talk and investigate large phenomena in such a way that old views do not come back by the backdoor –for example unwittingly carried by the theory-method-description package that we employ for the purpose. Point (b) above is particularly important here because when in situ we are likely to find practitioners who use all manners of "summaries of the distribution of different microbehaviors in time and space" (Collins, 1981: see above) as well as the abstractions that other social scientists planted before us (what is known as double hermeneutic). That is, actors themselves – not only social scientists – use abstract/vague entities such as 'culture' or 'spirit of times' to account for concrete activities. We therefore need to be vigilant and refrain from colluding with them in believing that these abstractions are other than just what it says on the tin: convenient summaries. This does not mean that 'these abstractions and summaries do not *do* anything' as suggested by Collins (1981, p. 989). Abstractions such as 'energy consumption' and 'leadership' in fact do a lot of work, for example in parliament, in the stock market and in workplaces all over. Moreover their capacity to produce effects is strictly related to their assumed correspondence to what they summarise. Our job is not to denounce them as false idols but rather asking through what practices and technologies of representation they were produced, in which observable scene of actions these summaries where created and most importantly, what effect they produce when deployed in practice.

We also need to resist the temptation to study nexuses, assemblages and bundles in and of themselves[iii] that is studying them as purely abstract occurrences. As soon as we set to study "the market" or "institutions" or "the state" in abstract theoretical term (even if we use the word practice a thousand times) we simply abandon a practice oriented project and start doing something else. The (financial) "market" only exists by virtue of there being traders who sit in

front of their computers every day, analysts who spend the day building yet another algorithm, investors who regularly check the price of funds and invest money in them, and other people who work to provide them with the necessary information. As Collins nicely put it (1981) “sociological concepts can be made fully empirical only by grounding them in a sample of the typical micro-events that make them up (p.988)”. Large scale phenomena investigated by practice-based scholars are always necessarily historically and materially situated: the market of reinsurance, the school system in Alaska or in Australia at the in the turn of the millennium are the large scale phenomena that practice-based can take as their legitimate object of inquiry. How this can be done in practice and for what purpose it the subject of the rest of this essay.

2 FOUR STRATEGIES TO PRAXEOLOGISE LARGE SCALE PHENOMENA

In this section I will examine four practical empirical strategies that have been used to respond to the question “how can we understand large scale phenomena using a praxeological sensitivity”? As we shall see, these approaches offer different yet related ways to praxeologise large scale phenomena. While they all utilise the idea of practices and their relationship as their theoretical building block and methodological compass, they all develop the affordances of practice theory in slightly different directions. I will start this necessarily summary exposition by surveying approaches that address large scale phenomena in terms of webs of interconnected practices. I will then explore other practice based approaches that offer different vista and opportunities by problematizing the relationship between some of traditional binaries such as space and place, presence and distance, global and local.

2.1 Large scale phenomena as a fabric of interconnected practices

A number of practice oriented authors offered metaphors to capture the idea that large scale social phenomena emerge from and transpire through the living and pulsating connection among practices. Schatzki (2015) suggests that large phenomena are “constellations of practice-arrangement bundles or of slices or features thereof”. The difference between small and large phenomena is essentially one of extension and number of the practices involved: “A bundle is a set of linked practices and arrangements. A constellation is a set of linked bundles… the kinds of link that exist among bundles are the kinds of link that connect practices and arrangements. A constellation, consequently, is just a larger and possibly more

complex bundle, a larger and possibly more complex linkage of practices and arrangements" (Schatzki, 2011 working paper). Gherardi (2012) mobilises the image of texture (and sometimes web) to capture the interconnected nature of practices. According to the author fields of practices "arise in the interwoven texture that interconnects practices" (ibid, 131) and extend all the way to society. Admittedly, the concept of texture is used in an evocative way "to convey the image of shifting the analysis between studying practices from the inside and the outside (p.2) to follow the connections in action and investigating how action connects and disconnects" (p. 156). Czarniawska (2004) uses the image of the action net to achieve the same result. Large social phenomena such as institutions, business organizations and regional waste prevention program are conceived as the result weaving actions together and stabilizing the resulting arrangement inscribing them in text, bodies and artefacts (Lindberg and Czarniawska; 2006; Corvellec and Czarniawska, 2014). Texture and action net are thus meant to capture both the connectivity and the work that goes into establishing and maintaining it. Similarly to Schatzki, their view is that large phenomena are complex web of living connections between practices. Concepts such as net, network, web, bundle, texture, confederation, congregation, assemblage, mesh and ecology are often used by practice oriented authors (and other relational social scientists) to describe how practices work together. All these similes conjure and promote the idea that large social phenomena emerge from the interconnection of social and material practices and evoke the image of a pulsating yet seemingly chaotic anthill-like world. However, they are often used figuratively rather than analytically. In so doing, they nurture the *imaginaire* of a world made of practices but offer relatively few pragmatic indications of how we could make sense of it or approach the study of such world empirically.[iv].

Among the few authors who have fully operationalized ways to investigate and represent how practices constitute large configuration and constitute large phenomena are Stephen Kemmis and his colleagues (see chapter XXX in this book). In a number of works spanning a decade (Kemmis, 2005; Kemmis &, Grootenboer, 2008; Kemmis, & Mutton, 2012; Kemmis et al, 2014) these authors developed a sophisticated grammar and methodological principles to understand and represent practices and their ecologies.

Kemmis and colleagues conceive of practices in terms of socially established cooperative human activity composed of the hanging together of saying, doings and social relatings. These are organised around projects and by virtue of being reproduced in time assume the character of (practice) tradition: in the pursuit of projects participants engage in activities, speak a language characteristic of the practice, and enter relationships building on the 'memory' provided by the practice tradition. Critically, however, doings saying and relating

only become intelligible within a pre-existing set of cultural-discursive, material economic and social-political conditions. Such conditions both enable the unfolding of a practice (the practice memory is sedimented for example in the physical arrangements, language spoke, discourse used etc.) and constraint them (they establish what can be said and done). Kemmis and colleague call this intersubjective space, the architecture of practice –in effect, Kemmis' Habermasian reinterpretation of Schatzki 'orders'. To paraphrase Marx, people bring into being practices but they do so not in conditions of their own choosing. Differently from the traditional Marxian interpretation, however, the relationship between practices and architectures is two ways (what Schatzki, 2005 calls a contextural relationship).When practices happen they become part of the happening: they take up the available doings, saying and relating, they modify them and they leave behind traces that in turn become part of the practice architecture of future activities. Any activity and the architecture within which it unfolds shapes and is in turn shaped by other practices and their architecture. Through this interlocking which manifests in terms of the element describes above (the idea being that practices 'feed upon each other' Kemmis et al, 2014, p. 47), practices compose ecologies of practice understood as "distinctive interconnected webs of human social activities that are mutually-necessary to order and sustain a practice as a practice of a particular kind and complexity (for example, a progressive educational practice)" (Kemmis and Mutton 2012, p 15).

Kemmis and colleagues use this detailed theoretical construction to develop an empirical method to analyse practices and study how they combine into large phenomena. They do so by providing an analytical tool (in the shape of an analysis checklist) to examine individual practices in terms sayings, doings and relating, their project and the architecture amid which it unfolds. The same headings are then used to compare how different practices influence, enable or constrain each other and to examine how one practice 'feeds upon', 'is inter-connected with', 'is shaped or shapes' by other practices and whether the relationship is one of hospitability, symbiosis or suffocation (all these terms are used in Kemmis et al, 2014 ch.3). The result of this second type of analysis is a two entries table which allow the investigators to examine, for example, how is the practice of student learning shaped by teaching, teacher learning, leadership processes etc., The table also supports the effort to explore how student learning vice versa influences the other practices and how. We thus find that in the particular case examined the teacher's practices are reflexively shaped by her observations, and her interpretations of the ways students respond to her teaching; and that

they are equally framed by the particular democratic and participative leading practices and initiatives taken at district level.

The use of the analytical 'table of invention' (a term used to underscore its heuristic use) aims to support the attempt to map empirically and with some level of systematicity the relationships between practices in local parts of the ecology. And although the approach and the 'sequential, systematic and repeated' empirical analysis are limited to a specific part of the ecology, Kemmis is adamant that the same principle applies everywhere: "the educational practices in the Education Complex are not vast 'social structures' that order the world uniformly throughout a classroom, school, School District or national jurisdiction. On the contrary, they are realised in everyday interactions between people, and between people and other objects, in millions of diverse sites around the world" (Kemmis et al, 2014, p.52). While ecological relationship may turn out to be more complex and less linear that this combinatorial approach may suggest (Kemmis et al, 2012 have started to explore how principles from biological system theory can be translated into the discussion) the basic approach seems to remain valid: if the world is flat large scale social phenomena can be examined in terms of mutual relationship among practices.

2.2 Studying large scale phenomena via trans-situated practices

The work by Kemmis and colleague has the merit to render concrete and give empirical purchase to the idea that large social phenomena are the result of nets, large confederations, and vast ecologies of practices tied together. It also offers a practical way to investigate them. One may not agree with Kemmis' approach which can be accused of being a bit mechanical, simplistic and to recycle several elements of from old style system theory (via the action research tradition from which Kemmis derives). However, this corpus of work has the merit of shedding light what is at stake in practice if we use textile metaphors to study large phenomena from a praxeological perspective and what are the practical implications of the underlying guiding metaphors. One of the things that become clear once we use the idea of architectures and ecologies of practices to study large phenomena is that textile metaphors and derived approaches are especially suitable for situations where there is *direct* interaction and contact among practices and their human carriers or non-human carriers. This specific approach is however much less suitable to study the increasing number of social phenomena that are global in scope and where direct interaction is non-existent (or even prohibited, as in the terrorist movement studies by Knorr Cetin, 2005). The challenge is to find ways of studying such phenomena in ways that hold fast to the idea that practices are always social and materially situated and we can always encounter empirically some

real time scene of action analogous to Bourdieu's French dining room mentioned above. This can be done if we reconceptualise the notion of interdependence expanding the variety of ways in which practices can influence each other and substitute a textile view and research strategy with a coherent rhizomatic approach. Progress in this sense has been made by a group of scholars who substitute the idea of web, net and network with the idea of nested relationality (Jarzabkowski et al, 2015) trans-situatedness (Nicolini et al. 2015) and complex global micro structures (Knorr Cetina, 2005; 2009). The idea underlying this approach is that a number of large scale social phenomena emerge from the active relationships between highly localized forms of activities that take place in dispersed places and time zones. What keeps these distant local practices in a nexus of connections together however is not some superordinate form of coordination (like, for the example, in the case of the US army) or simply the fact that they all derive from the diffusion of some master idea or template (like for example the idea of evaluating the outcome of university professors with publication rankings that has now spread in almost all western countries). The connectivity is built in and stems from the nature and fabric of the practice itself. A concrete example will help to explain what is at stake here.

Jarzabkowski et al (2015) have utilized this approach to study the global market of re-insurance – that is, the place where insurance companies buy an insurance policy for themselves. Using a zooming in and out research strategy (Nicolini, 2009; 2012) they patiently followed the practice of reinsurance studying it in (extreme) depth in the five main global hubs where it concretely unfolds through highly situated activities (meetings, conversation, calculations in offices, restaurants, parties). In each hub, they identified the practices through which consensus price emerges, risk is modelled and trade are finalized. Among other things, they discovered that what makes this vast nexus of diverse elements and competing trader function as a recognizable market is that each of these practice constitute the context for each other locally first and trans-locally later. The complex web of relationality that they patiently unravel is sustained through belonging to the same community of practice; the utilization of specific scoping technologies (i.e., technologies that summarize the instant state of the market on a screen and allow at the same to intervene in it: see Knorr Cetina, 2005). Most importantly it also depends on the organizing effect afforded by the collective sharing of the same set of *practical understandings,* that is, the know-how which governs everyday ordinary activities such as how to arrive at a quote in the absence of a centralize market or how to deal with large adverse events; the circulation of the same *general understanding* on how the network of relationship works, why and what is legitimate and acceptable within this particular regime of practice; and the specific temporality inscribed in and re-produced by the collective practice –in the specific instance a periodical renewal dates that punctuate the process, provides a specific time horizon for the different activities and constitutes

to object towards which the gamut of activities converge and precipitate. Unlike other markets where participants are connected through embodied presence (e.g., on traditional trading room full of screaming brokers) or response presence (as in the case of the modern trading floors where the market is transformed into moving indexes on a computer screen to which human traders or non-human trading algorithms react) here we have a global market which also build on a form of relational presence. In short, the market is brought into existence because the practices of underwriters are relational to one another and the collective activities can be coordinated through being part of a same practice, despite the lack of a temporal or spatial co-presence.

The approach is very promising in that it gives concreteness and develops further the idea that understanding and representing practice requires a reiteration of two basic movements: zooming in on the situated accomplishments of practice, and zooming out of their relationships in space and time (Nicolini, 2009; 2013). It shows in particular that this approach can be extended to phenomena that have a broad and even global breath. The approach however also invites us to expand the palette of ways in which we interrogate how these relationships are established, maintained and consumed beyond the transactional "quid pro quo" principle that is built for example, in Latour's notion of interessement (Latour, 2005). General understandings for example connect practices mainly through discursive mediation and operate at a level that is both rational and affective. As authors like Laclau and Mouffe (1985) convincingly argue, discourse can govern and bring together practice at a distance through structuring the field of intelligibility and the related demands that this makes on upon social identities, relationships and systems of knowledge and belief – a case in point being the construction of national identity and other imagined communities (Anderson, 1983). Much of this takes place at a level that is affective rather than rational and builds on the power of affective drives (pulsions), the sense of lack and incompleteness built into the fabric of individualization. The point has been made particularly clear by Karin Knorr-Cetina (2005) who studied complex global micro structures -- structures which similarly to the reinsurance market above are driven by micro-interactions but are global in reach. Asking how do the fragmentary kaleidoscope of often unconnected cells of Al Qaeda make for a global movement she draws the attention, among other, to the transcendent sense of temporality shared by affiliates (a temporality that transcends the individual life and survival and that implies waiting, patience and preparedness); the use of media to communicate to the rest of the diaspora (terrorist attacks are also messages with a strong sensory, affective and motivating intent); and the strategic use of narrative of an ongoing and persistent confrontation between a religiously defined Arabic diaspora and various Western empires (p.23). Al Qaeda as a global and large scale phenomenon thrives on the principle of nested relationality and can only be studied by zooming in on its practices and follow

connecting is we are prepared to think of such connections in much broader terms than in current practice-based approaches.

2.3 Examining the global in the local

A third way in which practice-based approaches have tried to address large scale phenomena is by focussing on the ways in which the global manifests itself in the local. In effect, the movement is complementary to the one used by the approaches above: rather than building on an inside-out strategy whereby the researchers moves from local to local until a 'global' overview emerges, here the focus is on how the global itself manifests in or is constructed locally by ordinary practices – substituting a synecdoche narrative for merism.

This way of dealing with large scale phenomena is now very well-known and I will not examine it in detail here as it constitutes a cornerstone of Actor Network Theory (Callon and Latour, 1981; Latour, 2005). For ANT in fact there is no macro scale in any other way than as an "equally micro place, which is connected to many others through some medium transporting specific type of traces" (Latour, 2005, p. 176). 'Macro' phenomena therefore exist but only as the object of work of specific occupations. Large scale phenomena in this sense are ordinarily constructed summaries which are manufactured through ordinary work practices and consumed in centres of calculation such as control rooms, military command centres, news rooms, boardrooms of large corporations. Oligopticons, as Latour (2005) calls these representations of large scale phenomena, are therefore the result of ordinary work, the circulation of a number of mobile intermediaries and the assembling powers of skilled humans and scopic technologies (Knorr Cetina, 2005). Such work takes place in concrete localised ways and in the case of any 'large phenomena' we can we can always investigate in which building or bureau were they manufactured and how. In summary, from this perspective the study of large phenomena corresponds to the study of the practices of scalography, the practical ways in which the global is brought into being and differences of scale produced.

While ANT and STS authors focus on the practices through which large scale phenomena are intentionally and purposively manufactured, other authors suggest that translocal phenomena are always already constitutive of any social situation or encounter. Although as I discuss above this view is to some degree shared by all the approaches surveyed here, authors such as Scollon and Scollon (2001; 2004; 2005) have developed it into an explicit investigation

strategy. The basic intuition is to circumvent the circuits through which practices are reproduced, that is, retrace the imaginaries paths that lead from the city centre (or, more specifically, specific activities in the city centre) to its hinterland and back. In this way we can make sense of which part of the hinterland are relevant for the re-production of certain activities and centre as a whole and how. Scollon and Scollon (2001) call this strategy nexus analysis. As they come from discourse analysis background, they think of large scale phenomena in terms of large scale discursive formations – the conditions that bestow a certain order to the statements which belong to it. These rules of formation are obtained by assembling existing discursive and non-discursive elements in a novel way through the institutions of new social and discursive practices. Discursive formations are socially constitutive in that they contribute to the construction of social identities, relationships between people, and bodies of knowledge. Semiosis remains central but it spills over outside texts (where most discourse analysist still spend most of their time) and into the world. In turn discursive formations are socially and materially reproduced through and by the self-same conditions that they institute. Nexus analysis is the investigation of which forms of discursivity circulate through specific sites of practice and lead to the emergence of specific mediated actions and regimes of activity.

The analysis starts by examining a specific site of engagement (a time/space station where the practice is customarily reproduced) with special attention to the social arrangement (interactional order), the historical body of the participants (the lived experience of the participants) and the discourses that are active in the particular scene, that is the discourses which participants' attention appear to be directed at. The analysis of the site of engagement and the mediated actions allows identification of what are the crucial discourses operating on the scene. This is, however, only part of the task. The next step of the analysis consists of navigating these discourses "as a way of seeing how those moments are constituted out of past practices and how in turn they lead to new forms of action…"(Scollon and Scollon, 2004, p.29). This is achieved by "circumferencing" the existing cycles of discourse, and examining their historical origin and the way they constitute local action through anticipating consequences and providing motives. Key to this task is the idea that discourse mutate in time through what Iedema calls "resemiotization" (Iedema, 2001; 2003) and the deliberate use of different time scales

The idea of resemiotization captures the process through which discourses are progressively materialised from situated and quite 'local' talk towards increasingly durable – because they are written, multiplied and filed – forms of language use (Iedema, 2003, p.42). When

introduced into a different scene of action these durable manifestations of discourse perform locally the discourse inscribed in them. For example, it may be decided (talk) that a focus group aimed at discussing some social policies may be organised by inviting heads of a family. The decision is then resemiotised in term of an invitation letter (text) that is sent to male addressees or the householder (who is very often a male). These accept the invitation and participate in the focus group (talk). The site of engagement actively reproduces a gender bias that is brought to bear by a cycle of discourse. The discourse of gender bias is both manifested in, and perpetuated through, the nexus of practice "focus group". The situation is sealed by the fact that it is likely that male participants carry onto the scene historical bodies that predispose them to perceive themselves as the family spokesperson (even if they are not necessarily the actual breadwinner). The two cycles of discourse render participants doubly blind to the gendered nature of the practice. They do not see and they do not see the discourse that makes them not see. Following in reverse the multiple socio-historical chains of resemiotization, it is thus critical to uncover "how and why what we confront as 'real' has come about through networks of transmission and assemblage of semiotic resources (Iedema, ibid. p.48). Nexus analysis therefore provides an understanding of which discourses circulate in any form of practice and account at the same for how such large scale discursive formations are reproduced.

Critical to this endeavour is also the deliberate deployment and manipulation of different time scales, the assumption been that when we change the order of temporality that we take into account in our investigation, different types of phenomena become noticeable. For example Scollon (2005) lists a number of cycles with which different aspects of human existence are entrained: respiratory cycle; metabolic and digestive cycles; circadian cycle of wake and sleep; lunar cycle; solar cycle and the seasons; entropic cycles: formation and decay of material substances. The list, which is not meant to be exhaustive (the list, for example, does not include socially produced temporalities and cycles), is only a reminder that what counts as relevant and consequential changes depending on which temporal horizon we employ. Large scale phenomena need to be made, they are not given and what counts as large is very much an effect of our interests and practical concerns.

2.4 Double re-specification: white boxing large scale phenomena

While many practice oriented scholars are interested in how different practices are connected to compose star like formations, a different way to conceive large space phenomena is to ask

how manifestation of the same activity are connected in time. This would require to complement attention for *how* events forms sequences or constitute a regime with a focus on the sequences and regimes themselves, their natural life and fate. In short, the object of interest becomes the regular performances of a large number of similar activities across time and space called using a single name treated as a quasi-entity: showering, shopping in supermarkets, washing, teaching, and trading in the market (Shove, Pantzar and Watson, 2012). The manoeuvre builds explicitly on the constructivist sensitivity discussed above in that the 'entification' is performed in plain sight – no sleight of hand involved. There is no denying that the scholars are constructing Oligopticons (to use Latour's language above) and no denying that a two ways relationship exists between practice as an entity and its ordinary situated production (practice as accomplishment). Practices emerge from the situated the coming together and often the recombination of skills, meanings and artefacts; they grow by enrolling practitioners one by one in identifiable time/space stations and they become big through recruitment processes supported by human and non-human mediators. Local elaboration and negotiation of the practice keeps it in movement – all aspects that are compatible with the flat performative ontology outlined above (Shove, Pantzar and Watson, 2012). Once this fact is established and justified, however, we can bracket ordinary situated production and focus on the trajectories, dynamics and interaction between the semi-entified practices –a strategy successfully adopted by a growing number of practice oriented scholars (see, e.g., Warde, 2005; Shove, Pantzar and Watson, 2012; Shove and Spurling, 2013).

This way of proceeding builds on a double re-specification. The first re-specification consists in turning 'macro' phenomena into webs of connections among practices, i.e., opening the black box in line with other practice theorists; the second move is to re-specify this web of connections in terms of provisional entities and turning them into white boxes. These white boxes or entified practices can then be treated as actantial agencies and used to construct narratives of growth, survival and disappearance. The same white boxes can also be offered to practitioners who can use them to make sense of how large scale phenomena come about and what other different arrangements are possible while staying close to the level of detail they know all about. In short, this manoeuvre allows us to ask new questions and employ methods and strategies of investigation that complement those suited for the exploration of the situated accomplishment of practices alternating between different types of narratives.

For example, the approach lends itself to the study of the success of practices in terms of competition for practitioners, their time, attention, and other resources 'consumed' by the practice. We can thus explain why showering seems to have won the competition with

bathing, at least in most Western countries by focussing on how an incremental changes of techniques, know-how, and ways of understanding bodily cleanliness came together to 'created a space for showering to challenge the previously dominant way of doing bodily cleansing (that is bathing)' (Southerton, Warde, and Hand, 2004: 42). By focussing on the particular connections between the 'infrastructural, technological, rhetorical, and moral positioning of showering visa-a visa bathing' (Hand , Shove and Southerton, 2005, p. 1.5) the approach provides an alternative and practice based explanation to the process of 'diffusion' and how local innovations turn into large scale phenomena. It also leaves plenty of room and in fact invites us to take into account both individual calculation (costs), social mechanism (imitation and fashions) as well affective and preconscious elements (for example the subsconscious interpellation of cleanliness associated with late modernity: see Leader, 2002). By the same token, the approach also allows us to reason in terms of alliances, mutual support between practices and their components and even competitive appropriation. The rapid success of car mobility can thus be explained by the fact that cars shared and appropriated (or 'stole') skills, material forms and even spaces that belonged to other competing systems of mobility (horse carts, cycles and in certain case buses and train (Urry, 2004; Shove, Pantzar and Watson, 2012).

Finally, a double respecification approach also makes room for methodological approaches that other approaches tend to back ground. By partially entifying practices, in fact, we can open the possibility to study them historically and even count their frequency and variation in time and across locales. We thus break or at least moderate the idea that practice theory necessarily relies on proximal modes of inquiry 'all the time' – one of the legacies of methodological situationsism.

The approach is not without risks. One of the main challenges of this strategy is circumscribing the object of inquiry. In short, the need to decide what is the practice under scrutiny and to construct it as an analytical object. In this effort, we are helped by the fact that practitioners also customarily name and examine practices in objectified terms (e.g., people usually talk about showering in comparison to taking a bath). Unfortunately, the step from the construction of practices as analytical objects to reifying them as a 'thing with boundaries' is very short. Questions about "What is practice?" and "What are its limits?" soon emerge, mostly because we are so bad at dealing with performances (instead of entities). It is here, I believe, that the benefits of defining practices as regimes of socio-material activity as I suggested at the outset become evident. We all more or less know what the referent of the term Fascism is: the brutal, oppressive and violent political regime established in Italy the

first half of XX century. Many would also accept that the Italian fascist regime was a large scale phenomenon. Few would think of fascism as a thing and or would find sensible to ask "where are the boundary of Fascism (do not laugh: people ask these questions all the time with regards to communities of practice – see Nicolini, 2012, chapter 3). Moreover ample historical evidence exists on how the discursive and material manifestations of Fascism were accomplished, which micro practices and arrangements made it possible, which forms of empowerment and disempowerment were brought to bear, how these contributed to perpetuated it, and which form of resistance practices were put in place. For each of these practices we can ask "in which building did it happen?" and attach to them real faces and real histories. At the same time, however, we can treat Fascism as a 'white box' and ask questions such as: how did the regime came about? How did it grow? What competing regimes were available at the time? The response will have to point at things inside the white box, according the principle that history is always also made in Mrs & Mr Bourdieu's dining room this double movement. The trick being not to get lost in this complex game of foregrounding and backgrounding or start to attribute Leviathan status to some of these oligopticons – especially when we start to share them with the practitioners (see above).

3 CONCLUDING REMARKS: LEGISLATORS OR SABOTEURS?

Let's return to the initial question: how we use a practice-base sensitivity to address big issues and 'large scale phenomena'? The above discussion suggests that the question admits multiple related answers; this even among practice-oriented scholars who subscribe to a relational and flat ontology (Ermibayer, 1997). Taken together, however, these answers suggest that adopting a practice –based orientation offers some specific affordances vis-à-vis competing or cognate orientations.

First, practice based approaches join forces with other relational sociologies and invite us to rethink some entrenched distinctions starting from the idea that we can clearly distinguish between micro and macro phenomena: of course big issues exists, but big issues are not necessarily always large scale phenomena and not all large scale phenomena are considered big issues; large scale phenomena are not necessarily happening in places that are different from the 'small' ones; presence and distance are not opposite and have only occasionally to do with space and time; large scale and global phenomena do not point at things that can be seen from space.

Second, practice based approaches suggest that large phenomenon are made and differences in scale produced in practice and through practices. However, they also invite to manipulate, play, and tamper with different ways of scale-making. The competitive advantage of many practice approaches, so to speak, derives from their capacity to use more than one scale at the same time moving skilfully from one another.

Third, practice based approaches invite us to see that the question of "how large must a phenomenon be to be considered a large phenomenon" should be addressed by asking what is the what are large phenomena investigated for –and what roles social scientist ascribe to themselves in the process. The question is not one of ontology but one of different practices and the practical concerns they respond to.

Traditionally speaking, it is engineers not social scientists who are involved in setting up and running oligocopticons – the socio-material network configurations that create partial, thumbnail representation of large phenomena for specific practical uses: guiding an army, controlling a city, producing a news bulletin, making policy or investment decisions. Social scientists who are interested in large scale phenomena have often been busy producing a different type of representations, that Latour (2005) calls "panoramas". Panoramas are views that speak to the desire or fantasy to produce total overviews. The ambition is to offer images of how the entirety of the world looks like– a glance from nowhere, as philosopher Thomas Nagel (1986) called it. This however requires to operate at a level of abstraction that renders uncertain the relation of the image and any other localities. Panoramas satisfy the anxiety of wholeness but in the attempt of capturing too much, they risk to capture very little. Baumann (1992) associates the desire and effort to produce panoramas to the legislative view of modernity where both society and its members are found wanting "shapeable yet heretofore shaped in the wrong" (p.11). From this view, the aspired role of social scientists is to provide panoptical view that can be used for purposes of social engineering and control. The criterion of validity of this endeavour is therefore imagined completeness, the only way to satisfy the anxiety of control built into the rational project of modern governance at all levels and walks of life. Importantly, this criterion remained unchanged even when the aspiration to provide guidance was abandoned and social scientist retreated within the boundaries of technical disciplines "indefinitively reproducing its own institutionalised discourse ...in the absence of all interfaces with social praxis" (p.19).

Practice theories therefore question whether producing panoramas is the only way to study large scale phenomena and invite us to abandon what we could jokingly call "economics' envy" of "Parson's disease". This also requires to relax or change the traditional criteria used

to evaluate the quality of representations of large social phenomena – criteria that will probably lead to judge some of the approaches surveyed here as inadequate. Omni comprehensive panoramas are in fact one particular way to address large scale phenomena and big issues; although the idea is still hegemonic in Western social science, is historically and politically situated. Indeed, the authors surveyed in the previous sections reject the traditional intimation to produce panoramas (within the constraint derived from the fact that they are all professional academic and therefore all part of the autopoietic circle referenced by Bauman above) and offer alternative ways to proceed. Their aims is not so much to produce panoramic views that appear convincing based on the criterion of completeness (in terms of representativeness of the sample or sheer amount of data[v]) as much as producing representations that can support or facilitate change[vi]. They do so by point out what practice changes in the hinterland would enable practitioners to modify the institution they live by allowing them to encounter one another in new kinds of intersubjective spaces (Kemmis); by identifying junctures where the reproduction of practice could be interrupted and derailed (Scollon); by pointing out which connections needs to be broken and reconstituted so that one white box can be turned into another –so that one regime of practice can be substituted. Even the authors who provide something closer to a panoramas (Jarzabkowski et al) do so in order to offer practitioners a tool for reflecting on the system they work in and the changes that are happening.

The message is clear. The most useful contribution a coherent practice approach can provide is to help practitioners understand their practice so that they can do something about it. The quality of the representation is therefore evaluated in terms of the capacity of the users to recognise themselves in the picture and find concrete handles for changing their own practices. From a coherent practice perspective involves focussing not so much completeness as much as pragmatic relevance. What are the differences that make a difference? What are the critical junctures where the reproduction of regimes of practice can be interrupted? What are the critical associations that need to be established or dissolved to trigger a shift in the reproduction of the large scale phenomenon? How can the association between practices be re worked and re-engineered? The invitation to stop thinking like legislators or consultants to the legislators and adopt instead design logic whereby social scientist provide insights on how the Golem works so something can be done about it. The guiding image being that of social saboteurs rather than social engineers.

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[i] I think of social practices in terms of orderly regimes of mediated material and discursive activities that are aimed at identifiable objects and have a history, a constituency and a normative and affective dimension. For reasons of space I will not discuss or defend this stipulation in the present text. Readers are referred to other texts where I do so (Nicolini, 2012; Nicolini and Monteiro, 2016).

[ii] The image of the rhizome is to be preferred to the polished image of an homogenous network or texture or other word that evoke the image of orderly sets of connections that can be captured in its entirety. Nexus and bundle and mesh can be used to the extent that we imagine them as neutral with respect to assumptions of regularity. The term assemblage can also be used here. Assemblage is in fact "a resource with which to address in analysis and writing the modernist problem of the heterogeneous within the ephemeral, while preserving some concept of the structural so embedded in the enterprise of social science research (Markus and sake, 2006, p. 102).

[iii] I am in debt to Pedro Monteiro for this observation.

[iv] Some of these view moreover have traceable genealogical relationships to the idea of actor-network (Latour, 2005). This in spite of the fact that the latter cannot be considered a practice-based approach -- as Latour (1996) has made plainly clear. Latour forcefully disassociated himself from the practice turn in his exchange with Engeström (Latour, 1996).Schatzki agrees with Latour on this point and often foregrounds the differences between his version of practice theory and Latour's work (see Schatzki, 2002; 2005; 2011; 2015).

[v] This is the criterion of realism used by statistic and other big data studies to convince the readers of the validity of their representations

[vi] Kemmis et al. (2014), for example, explicitly state that studying architectures and ecologies of practice follows from the fact that making new practices possible requires creating new arrangements so the people involved encounter one another in new kinds of intersubjective spaces change (p.7). this is why the table of invention are valid even if they are not complete –as long as they constitute a platform for triggering reflection and taking action. Similarly, Jarzabkowski, Bednarek & Spee (2015) state explicitly that the aim of their book is to show both how the reinsurance marked work and the general understanding that makes it tick, but also to caution about the current tendencies to substitute existing tested practices and practical understanding with different arrangements that, being similar to those which took place in the subprime market in the late 2000s may produce the same catastrophic results. Scollon and Scollon (2004) explicitly see Nexus Analysis as an instrument of activism and change and suggest that the first and last question of any analysis is "what actions can you take as a participant analyst in the nexus of practice that will transform discourses into actions and actions into new discourse and practices?"(p.178). Finally, Shove Pantzar and Watson devote an entire chapter to show what a "practice oriented policy may actually involve" (p.140) and how a respecification of large scale phenomena from a practice perspective provides new and original junctures where to trigger transitions between regimes of practices.