

# **Contributions to Social Ontology**

Edited by  
**Clive Lawson, John Latsis  
and Nuno Martins**

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# 11 Real, invented or applied? Some reflections on scientific objectivity and social ontology<sup>1</sup>

*Eleonora Montuschi*

## Some preliminaries

A philosophical distinction is normally referred to between two concepts of objectivity: an ontological concept (to be objective is to exist independently of any knowledge, perception or conception we may have about what exists), and an epistemological concept (objectivity is a property of the content of mental states and acts).<sup>2</sup>

The question which is normally asked as regards this distinction is the following: does epistemological objectivity require ontological objectivity (does the objectivity of, say, a belief, depend on the objectivity of the entities this belief is purportedly about)?

For the realist, epistemological objectivity depends on ontological objectivity, namely for our beliefs to be objective we ought to assume the independent existence of determinate facts, objects, properties, events, etc. (i.e., an 'objective' ontology).<sup>3</sup> For the anti-realist, epistemological objectivity can be assessed in its own terms, that is the objectivity of our beliefs can be established by reference to other beliefs which may provide justifiable, coherent, intelligible, rational support to the beliefs the objectivity of which is in question. It is indeed on the basis of notions such as 'the way reality appears to us', or 'the evidence which is available at this present moment in time', or 'the criteria we apply', etc. that epistemological objectivity can be at all ascertained. This goes clearly against what the realist believes, namely that epistemological objectivity without ontological objectivity is simply 'invented'.<sup>4</sup>

This debate translates well when we turn to discussing scientific objectivity, that is objectivity as produced and pursued by science (as an institution and as an epistemic enterprise). In the philosophy of science the distinction (and the relation) between the two concepts of objectivity becomes one of the points of contention between scientific realists and social constructivists. Objective scientific theories 'discover' real objects, for the scientific realist (E-objectivity requires O-objectivity); they rather 'invent' those very objects, for the constructivist (O-objectivity is not required; in fact, it is itself a 'construction').

What format does a constructivist argument take? Here is a possible reconstruction:<sup>5</sup> To argue that 'X is constructed' we ought to assume:



1. X, or X as it is at present, is not determined by the nature of things
2. X is the product of *intentional human activity* (theories, actions, inquiries, history)
3. Human activity, although necessary for the existence of X, is not itself necessary

From here we conclude: X need not have existed, or need not be at all as it is (the non-inevitability of intentional human activity is responsible for the non-inevitability of X).<sup>6</sup>

So, if X is 'constructed', X is what it is because X is the *product* of a contingent activity or *process*, and not of any objectively existing state of affairs, nor of any given and transcendent order of things.<sup>7</sup> However, assumption (1), although a necessary condition for the truth-value of 'X is constructed', is not sufficient.<sup>8</sup> What needs to be specified is that for X to be not inevitable, it must be possible that, say, a scientist can make other choices, and that these choices are then reflected in a world-view consistent with them. In other words, what needs to be specified is that the non-inevitability of X is due to the fact that X is the product of *intentional human activity*. It is our theories, our actions, our inquiries, or our history, which make X what it is. But the theories, actions, inquiries, history which make X what it is, although necessary for the existence of X, are not themselves necessary. The non-inevitability of intentional human activity is ultimately responsible for the non-inevitability of X.

Having specified both the necessary and the sufficient conditions, the actual argument from construction can be framed at different levels: ontological (the level of the facts of the world we live in); epistemological (the level of what we can know of those facts); and semantic (the level of what can be said about those facts and about what we know about them).<sup>9</sup>

The ontological level seems to entail the most demanding form of constructivism. To say that X is constructed is to say that its very objectivity depends on human action. However, if we look at the C-argument above, we should ask: When we say 'X is constructed', what is the 'X' we are referring to? Hacking reminds us of a useful distinction: the one between *object* (something 'in the world', so to speak), and *idea* (a conception, a belief, a theory, a classification or a kind).<sup>10</sup>

One way of interpreting the social constructivist claim is to say that X is the object, and the object is socially constructed (by the idea). In other words, what we refer to as objects are actually ideas of objects, in the sense that objects are constructed by ideas and do not exist as separate entities. Another way of interpreting the claim is to say that there is a distinction to be made between the object and the idea: X is an idea, and the idea is constructed, it is used to refer to objects, but the objects it refers to are not themselves constructed (an idea of object). So, paradoxically, in both cases X is an idea – but what this means is rather different in each case. In the former interpretation, X is the idea because there are no objects to refer to other than ideas of objects. In the latter interpretation, X is the idea because the objects exist 'in the world', and the world cannot be constructed – only the ideas (beliefs, theories, classifications, etc.) we have of it can.

By looking at these two interpretations, we come to realise why a constructivist argument might be perceived as a threat to objectivity. In the first interpretation, a suggestion is made to the effect that what we take to be real is in actual fact 'only a construction' (an idea of 'real'). From here, we might well go all the way and come to say that reality is a fiction, and socially constructed fictions cannot be objective (in the sense of O-objectivity). This interpretation would result in an underestimation of ontological objectivity and a parallel overestimation of epistemological objectivity – an actual limitation, in my view.

However, the first interpretation might also have a merit. It somehow fences off the idea that assuming the existence of a world of independent objects should be taken to mean that the classes of objects a science investigates (its extension) are always ready-made, simply 'given'. The objects questioned by a science are (in some sense to be qualified) objects of some 'scientific' inquiry. To become a referent for scientific inquiry is a complex procedure, which involves different techniques of classification, representation, experimental and conceptual design, etc.

This is something that the constructivist argument specifically takes on board, but to the extreme of claiming (its possible 'vice') that, at the very end, nothing exists beyond or behind these classifications, representations, etc. The ontological status of the referents of scientific inquiries is then said to be invented by the theoretical and practical procedures of knowledge acquisition. It is not itself an object of scientific discovery. The constructivist argument completely reverses the direction of dependence between O-objectivity and E-objectivity: the former depends entirely on the latter, to the extent that the former is 'absorbed' by the latter, and shaped by it – there included its existence.

This is how the debate between scientific realists and constructivists is normally reported to have developed. Scientific objects are either discovered or invented. If they are invented they cannot be real (ontologically speaking). If they are discovered, they must be more than an epistemological construction. Of course framed along these lines, scientific referents cannot at the same time belong to an independent ontology (order of reality) and be constructed as having a specifically devised ontology (order of a man-concocted reality).

Hacking – who does not so much care about taking sides as he rather tries to understand the actual terms of the debate – clarifies two important points. Firstly, we ought to eliminate the confusion between objects and ideas in the constructivist-argument. Secondly, and as a consequence, reversing the direction of the relation of dependence between O-objectivity and E-objectivity (as done by the constructivist-argument) does not necessarily result in deleting O-objectivity.

As a matter of fact, in the history of the debate between realists and constructivists the oppositions, although often radically framed, prove less rigid than it is suggested above. What we often perceive is instead a difference in emphasis as regards the perspective from which the issue of objectivity is questioned by each side in the debate (i.e., it is either a matter of questioning the ontological/extensional from an epistemological/intensional point of view, or vice versa).

Attempts have then been made to attenuate the divide between the real and the invented projected by this debate. For example, an interesting perspective has



been recently named 'applied metaphysics' (or historical ontology) and is intended to advocate that scientific ontological objectivity can be at the same time real and invented, and therefore any concept of either ontological or epistemological objectivity has to take this into account.<sup>11</sup>

### Applied metaphysics

A preliminary clarification of the very expression 'applied metaphysics' is in order. Unlike pure metaphysics, which deals with 'the ethereal world of what is always and everywhere from a God-eye-viewpoint', applied metaphysics – Daston points out – is concerned with what constitutes the world studied by working scientists.<sup>12</sup> This does not mean that the latter reduces to epistemology, to what is 'dimly known' (as opposed to 'what is really real'). Rather, it includes those special categories of phenomena which constitute the referents of scientific investigations (more epistemologically complex than everyday 'things', and yet not less real, as we will see).

Having specified the background of investigation, there are three significant steps which are taken from within an applied metaphysics, in view of re-framing the meaning and scope of scientific objectivity. First of all, and most importantly, an applied metaphysics clarifies what the object of a science is. Rather than taking its cue from ideals, models, definitions of objectivity, it questions directly what it is that we are (are meant to be) objective about in scientific inquiry. Indeed, the term 'object' is ambiguous. Its root meaning (as in *objectus*, *Gegestand*, *oggetto*, *objet*) is that of a 'throwing before', 'putting against' (standing opposite). So objects in this sense are the 'solid, obvious, sharply outlined things of quotidian experience'; 'they possess the self-evidence of a slap in the face'.<sup>13</sup> However, the objects of *science* are a different matter.

Unlike quotidian objects, scientific objects are elusive, hard-won. Historians, philosophers and sociologists of science, says Daston, do not confuse the quotidian with the scientific. And yet, as exemplified by the realism/constructivism debates, arguments are drawn and put forward on the acceptance of an implicit ontology of quotidian objects. These arguments take the opposition real/invented for granted, a metaphysical axiom, and they quarrel over which of the two categories objects like 'race' or 'quarks' better fit into. They do not question the opposition itself, which – Daston reminds us – got established only at some point, in the eighteenth century, and after a period in which the two terms of the opposition (at least 'invention' and 'discovery') were synonyms – as we can infer, for example, simply from consulting the Oxford English Dictionary. It was only at some stage that one of the possible meanings of the term 'invention' (i.e. fabrication or contrivance) became prevalent, triggering a whole series of negative consequences as regards its use. There is a long story to recount about this opposition, which is largely still to be explored. Nonetheless, the step Daston is taking here is clear: let's see whether a 'good' meaning of invention can be restored and reinserted as an analytical tool to describe the nature of the objects of science, where no doubt 'invention' has a part to play.

The second important step, in the context of an applied metaphysics, is then to appraise what the world that science refers to consists of. The world of science is not a static reservoir of given objects, but rather, says Daston, is a dynamic world – a world made up of objects which ‘come into being’ or ‘fade away’ as referents of epistemic inquiry, depending on how epistemic inquiry develops. Objects become referents of a science depending on the scientists’ interests, lines of questioning and techniques of salience and embeddedness in research practice. This does not mean that scientific objects are entirely a creation of the scientist, and therefore that they are not real (not objective, in the sense of ontological objectivity). The step Daston takes here is instead to claim that, in an applied metaphysics, ‘reality is a matter of degrees’.<sup>14</sup> Phenomena which are undoubtedly ‘real’ (in the colloquial sense that they ‘exist’) can become ‘more or less’ real depending on how much and how deeply they are embedded with scientific practices.

Daston uses, as her example of scientific object, the case of ‘preternatural objects’.<sup>15</sup> Preternatural objects, as the term suggests (*preter naturam*), are natural and yet irregular, extraordinary, deviating, rare objects: images found in agates or marbles, comets presaging the deaths of kings, a Medusa’s head found in a hen’s egg in Bordeaux, the power of flax seeds to inspire prophetic dreams, etc. They came into being as scientific objects by means of preternatural philosophy in the 16th–17th centuries, and then faded away when preternatural philosophy was supplanted by natural philosophy in the late 17th and 18th centuries. When scientific interest abandoned these objects, agates or marbles with strange images, comets, flax seeds, etc. stayed where they were. They only ceased to be *scientific* objects.

The final, interesting step taken from within this perspective is to claim that an applied metaphysics is ‘catholic’ in scope. All sorts of scientific objects – dreams, atoms, monsters, culture, mortality, centers of gravity, value, cytoplasmatic particles, the self, tuberculosis – belong to the same metaphysics. So, the widely discussed differences between the objects of inquiry in natural science and those in social science (the former are real and independent of human existence, the latter are not; the former can be dealt with by scientific methods, the latter cannot; etc.) become less crucial. Both types of objects share the same ontological framework (applied metaphysics), and can be subjected to similar forms of questioning and investigation (i.e., scientific inquiry, and historical/epistemological reconstruction). Admittedly, Daston is able to reach this ‘catholic’ result as she works with a wider notion of science (*Wissenschaft*)<sup>16</sup> than the one normally suggested by the English meaning of the word, namely the one belonging to the empirical/experimental tradition. By doing this, she is able to avoid some of the confusions and ambiguities which are found sometimes in certain classifications of scientific objects.<sup>17</sup>

Though I am overall sympathetic with Daston’s approach, I have some queries concerning its third step. I question whether accepting that all scientific objects belongs in the same metaphysics does indeed do justice to the understanding of what the objects of different sciences actually amounts to. In particular, I wonder whether blurring the distinction between invention and discovery vis à vis scien-



tific objects also leads us inevitably and ipso facto to blurring the distinction between natural and social scientific objects.

In order to substantiate my doubts, a further and more accurate reflection on the meaning of reality, which Daston seems to rely on, is called for (second step). Namely, we should explore whether Daston's idea of 'degrees of reality' made dependent on scientific inquiry is a suitable ontological device to describe the applied metaphysics of the objects of both natural and social science. But before this, a few words on the real/invented divide as applied to social scientific objects are in order.

### The case of social scientific objects

In what follows I will question whether an applied metaphysics à la Daston really equally 'applies' to the objects of the social or human sciences. What does/can such metaphysics say of objects such as: 'productivity growth', or 'racially motivated crimes', or 'rate of inflation', or 'child abuse' – or, to go for more general abstract objects, 'society' and 'culture' (the social-science objects discussed in Daston's book *Biographies of Scientific Objects*)?

Daston makes two qualifications about the notion of invention (or novelty) vis à vis scientific objects which have interesting repercussions on social scientific objects. First, by including 'invention' into the meaning of scientific object we do not only refer to interpretations or descriptions of the world, she claims. We also refer to the practical and material conditions and contexts for the coming into being of these objects (social epistemological meaning of invention), such as, she writes, 'the stacking of atoms and the profits of insurance companies'. So in this sense, she continues, 'the objects of the human sciences do not appear to be more ephemeral than those of the natural sciences'.

Secondly, by using invention as the vehicle for the 'coming into being' of scientific objects (ontological meaning of invention), a series of connotations for the idea of novelty come to the fore. By means of scientific inquiry, 'quotidian' objects become *salient* (they come to 'rivet scientific attention'), *embedded* in scientific practices (they are entrenched in institutional networks), and *productive* (they offer results, allow manipulations, etc.). Novelty, however, might also endorse a more radical connotation: objects can be said to be *emergent*, in the sense that science, as Daston puts it, does not always silhouette extant objects, but sometimes creates them 'ex nihilo'. To use the words of a supporter of his own brand of applied metaphysics (or historical ontology, as he calls it): 'the very objects or their effects (...) do not exist in any recognizable form until they are objects of scientific study'.<sup>18</sup> That is to say, they become recognisable as those objects only when a certain descriptive practice (classification, institutional identification and support, etc.) is put in place.

Having made these two qualifications, Daston admits (and Hacking to some extent concurs) that social scientific objects have no 'quotidian prehistory'; and also that they constitute 'the most clear cut cases for the emergence [coming into being] of scientific objects' (radical sense of novelty).<sup>19</sup>



Both in Daston and in Hacking it seems that social objects are more easily identifiable by science (or maybe this is their actual difficulty) without precourse to extensional definitions. Does this single them out as special types of scientific objects, within Daston's catholic approach? Social scientific objects seem to pose the following ontological challenge to Daston's catholic view. Given that, according to an applied metaphysics, scientific objects are both real and invented, and that their reality is as a consequence a matter of degrees, what does it mean for social scientific objects to be 'more or less real', if there is no reality check point for these objects? Do they exist at all before science makes them 'emerge'? In other words, we are left with the question of how objects which lack quotidian prehistory (colloquial sense that they do not exist) can count as real, and become more or less real when subjected to scientific scrutiny.

That this is an actual problem with social-science objects is proved by the fact that several of the debates concerning these objects are indeed about their very existence. Take the example of 'society'. Peter Wagner interestingly shows that from the start, that is from when 'society' came into being as the object of a science (sociology, social science, science of society), the case for its existence had to be argued for.<sup>20</sup> For example in one of the early debates (mid 19th century), Robert von Mohl was confident that something entirely new had come into being in the last 50 years, the 'particular being' of society; whereas his opponent Heinrich von Treitschke rejected all together the idea that 'society' existed as an independent entity. For him, all the relations and elements purportedly constituting this 'new object' had essential links to the State, making the case for the existence of society as a separate entity totally redundant. And so the debate developed, Does society exist as separate from the State? Does it exist as separate from individuals (citizens)? Does society have specific causal effects which can prove its existence? Does it exist as an organism? etc.

It is interesting to see the terms in which T. Parson and R. MacIver reconstruct their far-reaching genealogy for the entry 'society' in the 1934 *Encyclopaedia of the Social Sciences*. First they look at the time when '[Plato's and Aristotle's] thought on society never takes the specific sociological form'; and then move on to the much later period when society does indeed become a specific focus of study, gradually acquiring the status of an 'independent reality'. However, Wagner remarks, this might 'underestimate the importance of changes in social practices that go along with terminological shifts: if there was neither "word" nor "thought" in the proper form, could it be that "society" [the scientific object of sociology] did not really exist before sociology?'

More examples come to mind. Does alcoholism exist before it becomes the phenomenon studied by a certain sociology? Or does suicide exist before the nineteenth century emergence of a certain 'medicine of insanity'? Do inflation or productivity growth exist before a particular machinery for measuring them is put in place? Do cultural representations as studied by certain anthropologists exist before causal chains from individual to social representations are identified by cognitive science and account for the former? Questions of this sort, I believe, rightly deserve inconclusive answers – of a yes-but-no type. Did the French

Revolution really exist? Of course it did. And yet without the description offered by the term 'revolution' and the practice of historical inquiry we can't really say that it existed. Or else, to claim that the existence of drunken people makes alcoholism a real scientific object seems far too simplistic. As it is misleading to say that alcoholism as described by certain sociological studies is the entire creation of those studies. However, we might also want to resist to say, as Daston's alternative seems to advocate, that the scientific object 'alcoholism' (partly invented by, say, sociology) makes the reality of drunken people 'more real'.

There seems to be something constraining, or at least to be further explored and qualified, in the idea of 'degrees of reality', which finally affects the thrust of applied metaphysics as a way out of the strictures of the real/invented divide. Let us go back to Daston once more.

### **Scientific reality and social objects**

In her approach Daston works with two categories of 'real', and – partly due to the nature of the approach she advocates – she often oscillates between the two. One is the everyday category: quotidian objects which are either material (flowers, comets, chairs) or immaterial (dreams, personal identity). The other is the scientific category of 'real': scientific objects alter the reality of everyday objects by turning the latter into an inclusive (or exclusive), observable, stable, rich in implication, etc. category of objects. In other words, familiar (and sometimes unfamiliar) features of phenomena become objects of expert scrutiny, elaborate theories and cultural significance. Daston's metaphor here is that in a scientific object, reality (everyday reality) is 'intensified'. Intensity comes in degrees and from here it is a short step to claim that the reality of a scientific object is a matter of degrees (of intensity). Is Daston's 'intensified reality' something in between scientific reality and everyday reality, and if so at what level do we locate intensity (i.e., is it an ontological property, or rather an epistemological/historical connotation)? Daston quotes from Rheinberger: 'scientific objects, not things per se, (...) are targets of epistemic activity. (...) It is not that there is no materiality there before such objects come into being, or that they would vanish altogether and shrink to nothing on their way into the future'.<sup>21</sup> It is rather that science makes them either central or marginal, depending on what science sees in them. Against the two-valued metaphysics that forces upon us the choice of either 'it exists' or 'it does not exist', in an applied metaphysics reality 'expands in a continuum'<sup>22</sup> (from everyday to scientific, and sometimes back to everyday). It is 'processual', it comes and goes: it (scientific reality) is reality 'in motion'.

On the other hand, Daston also quotes Latour, who makes bolder claims.<sup>23</sup> Like Daston, Latour argues for a homogeneous ontology, which includes both human and non-human objects. However, Latour claims, in the case of scientific objects, reality itself becomes a 'relative property', dependent on the degree of its involvement with institutionalised scientific practices. Scientific facts cannot escape their local (historical) conditions of production. This means, at least for Latour, that what we take to be historical is not only the 'discovery' of scientific



objects, but those objects themselves. In other words, it is not so much a matter of adding history (and practice) to reality, as Daston seems to say; it is rather, for him, a matter of finding history in reality. Scientific reality entails 'relative existence',<sup>24</sup> since history, so to speak, 'makes up' the reality science deals with.

How does Daston position herself between a Kantian (post-Kantian), epistemically conscious ontology à la Rheinberger, and an all inclusive, ontologised epistemology à la Latour? Which of the two perspectives better fits the frame and purpose of her catholic approach? To answer these questions, let us reflect on what features an ontology of social objects might bring to the fore, and then wonder how social reality can be included in a scientific ontology which is partly invented and partly real.

Purportedly, the problem with the objects that social science deals with is that, despite sharing the same ontological framework as natural objects, they have some specific ontological connotations which ultimately distinguish them ontologically from natural-science objects. True, like natural scientific objects, they are partly real and partly invented, but it is (1) the role that invention plays in their ontological identification, (2) the specific mechanism by which they get identified, and (3) the identifying features of so-called social kinds, which makes a difference.

As to the first aspect, and as Searle, among others, once put it: the objects of the material world (nature) do not need human intervention in order to be where they are, social objects exist precisely because they are represented by humans.

As to the second aspect, and as Hacking pointed out, the mechanism of representation – which admittedly intervenes in classifying both natural and social objects – is itself different when we shift from the former to the latter.

As to the third aspect, and as Michael Root suggested, it is the constitutive features of social kinds that determine in what specific sense social kinds are 'real'. Let's see what each aspect amounts to.

As to the first, Searle came up with a formula which describes the underlying logic of social reality: X counts as Y in C, that is social objects belong to natural reality (X) and yet they exist only as a consequence of a collectively sustained attribution of social functions and meanings to that reality (Y, or X represented as Y).<sup>25</sup> The difference from natural objects is that social objects can exist only if they are represented. So their dependence on representation (the invented part in Daston's terminological distinction) is total. This makes in a sense the term 'representation' misleading in the social context. An X becomes a Y not just in the sense that it is represented as a Y. Instead, Y allows X to exist as Y. This partly shows why a metaphysics of degrees of reality à la Daston does not seem to hit the target in the case of social objects. The invented part of social objects (the Y) does not make them be 'more or less' real (the X part); it rather makes them real all together, or better it makes them exist at a specific 'level' or 'order' of reality (the Y level).

But there is more, and here is where the second aspect becomes relevant. The mechanism of representation itself is different in the two cases. In describing the objects of the natural and the social world, Hacking famously made a distinction

between 'indifferent' and 'interactive' kinds.<sup>26</sup> 'The classification 'quark' is indifferent', he explains, 'in the sense that calling a quark a quark makes no difference to the quark'. With social or human kinds, the situation changes. People are the subject matter of these kinds, and when people become an object of study (e.g. child TV viewers, criminals, women refugees, black and white people, etc.), they 'interact' (accordingly or contrastively) with the ways they are classified, described, represented, and they also often experience themselves in the world according to ongoing classifications, descriptions, etc. There is a feedback, or 'looping' effect involved with classifying people, which does not occur in the case of natural kinds, and which typifies the representational mechanism of social-kind making. *Kinds* of people may change, because the *people* classified as being of certain kinds might themselves change, as a consequence of being so classified. To say that humans are 'social objects' must specifically take into account the fact that their relation to representation cannot be 'indifferent' – even, and particularly, as referents of social scientific inquiries. They are, so to speak, constantly on the move.

The social sciences, Hacking reminds us, are constantly under pressure to emulate the natural sciences and produce/refer to real natural kinds. But for this to be possible they should adopt an ontology and an epistemology which do not comply with the objects or referents they deal with. This does not mean that the objects social science refers to cannot ever be classified as indifferent. For example, an autistic child can be classified both interactively and indifferently, that is a social classification of autism does not exclude the possibility that some child is indeed the bearer of a certain pathology (autism can be a scientific concept). It does though rule out that an ontology built exclusively on indifferent kinds might be adequate in the case of social referents.

What effects does the way we classify social kinds have on their reality? Where should we look for their reality, if they owe their existence to the way we represent them? Michael Root argues that the reality of social kinds should be assessed at the level of the specific categories which the social order proceeds from, and not by comparison with natural-kind categories. In the social sciences, he claims, 'real taxonomy is less about generalization and more about regulations: we divide ourselves not by discovering our differences but by requiring ourselves to be different'.<sup>27</sup> Social categories, in other words, are normative: 'extrapolation across all instances is not possible, but normalization is', in the sense that social categories may prescribe not so much how whatever is classified by means of a certain category is, but rather how it ought to be. This is why these categories are 'well made for social regulation'.<sup>28</sup>

This does not mean that social categories are 'less real' than natural categories. The social world, just as the natural one, is ordered, but the source of such order is different: as Elster once pointed out,<sup>29</sup> it is an order based on norms and regulations. Root discusses the example of race. Race, he claims, is like crime. If we had not invented appropriate laws or drawn certain property distinctions, nobody would be guilty of theft. Yet, given that we did, social scientists can classify us along certain categories, provide descriptions and explanations by making use of



them, and even try to predict or explain phenomena and trends by means of those categories. Race is biologically real (to be black is to be black, not just to be perceived as being black, or to be believed to be black). And yet, the reality of race as a social category depends 'on what we (collectively) have made of race, and (...) whether we regulate or discipline each other by race. Should we divide but not regulate by race, we would retain the races but not conserve their reality'.<sup>30</sup> Root concludes: 'Laws of nature do not make race real, we do'.<sup>31</sup> As in Searle, we add categories to the world, and make 'new things' exist in the world.

If we now compare the three aspects of social ontology, as have just been described, with the claims made in the context of Daston's approach, we come to realise what the limits of the latter might be.

Working our way back from the last aspect, to say that all scientific objects are real (shared ontology), and can be more or less real depending on how science approaches them, hides the fact that the category of reality as applied to the objects of social science is based on different foundations (e.g. norms, and not laws of nature). As a consequence, social science should aim less at being a generalising science than at being a regulation-conscious type of inquiry.

Secondly, to say that invention is part of both types of objects hides the way in which invention actually achieves its ontological objective (the identification of each type of object). Social scientific objects are 'interactive' and normative in a specific sense, and the social sciences cannot investigate them in the same way as if they were natural objects (though this does not mean that the social sciences cannot investigate natural, or indifferent, kinds).

Finally, to say that all scientific objects are both invented and real hides the fact that without invention (there included scientific invention), the objects of social science, unlike those of natural science, would not so much exist 'less', they would not exist at all. The world does not come with all the categories we use to refer to it – and in some cases man-made categories are essential to identify referents at all. This is not to deny existence to social ontology, but to offer a more in-depth understanding of what such existence amounts to.

By means of the 'more-or-less-real' device, Daston, as I take it, resists the Latourian turn (she somehow preserves a notion of independent reality); but, at the same time, she seems to overlook that 'being real', especially in the case of scientific reality, is not so much a quality of entities than it is a predicate; and that as such, it can be predicated at, or of, different levels, or be conceptualised in terms of different orders of reality.<sup>32</sup>

Both Daston and Latour think of their approaches as wide-ranging, and make them applicable across the spectrum of both natural and social objects. In Daston's catholic approach, social scientific objects are not substantially different from natural scientific ones, in that invention plays a part on the undoubted reality of both. In Latour's view, it is rather the other way around: human and non-human objects are all historical (invented). A 'homogeneous ontology' applies to both natural and social objects, as in both types of objects their reality is relative to their history. However, neither approach significantly shows that a shared ontology should not necessarily treat all types of objects identically: it

should rather find ways to include and promote plurality and diversity of existence even within a shared background of reality.

## Conclusions

To return then to the suggestions of applied metaphysics, and to the claims of scientific objectivity in a revisited framework of the debate between realism and constructivism. On the real/invented divide, Daston is right: it is time to dismantle some of the myths and ghosts which have been unduly created about it, and seriously explore the ways the two poles of the opposition come together in the concrete cases and instances science practices upon.

On the quotidian/scientific divide, I find Daston less convincing. On one side, she advocates the necessity of not conflating the two in the case of scientific objects (to avoid all the problems which, for example, haunted the realism/constructivism debates). On the other, she seems to rely on the existence of quotidian objects to show how science operates in transforming them into scientific objects. This specifically creates problems in the case of social scientific objects, and more generally for her applied metaphysics which she wants to be catholic in scope (embracing all scientific objects, natural and human). The 'more or less real' device does not seem to offer the right solution to connect the real and the invented part in both the natural and social ontology. We should not take a pre-existing ontology of quotidian (not necessarily familiar) objects as being more or less real depending on scientific inquiry, but rather look at how different levels, orders, dimensions, or – to use a critical realist term, 'strata' – of reality become recognisable and identified as 'existent' by means of scientific inquiry.

To return to where we started: what effects does this way of framing social objects and social ontology have on the issue of scientific objectivity? Once re-conceptualised in a revised perspective of applied metaphysics, scientific objectivity cannot be taken as being derivative of some given or pre-determined 'way that things are'. It is rather strictly interdependent with the practical as well as conceptual ways we (the scientists) frame things in our inquiries. It is because of these ways (practices, procedures, etc.) that the objects scientific inquiries deal with become real, at various and different degrees and levels. Indeed, it seems that objectivity becomes an issue only in relation to specific systems of reference, that is in relation to objects embedded in those practical, theoretical, historical procedures of description, classification, conceptualisation and questioning, which allow them to become possible objects of specific inquiries.<sup>33</sup>

This has at least two important corollaries, or consequences. First, objectivity is not a fixed ideal, with a fixed meaning, applying in a fixed way across disciplines and their histories. Objectivity is rather a practice. Designing objects for scientific inquiry depends on available techniques, technologies, methods and methodologies, quantitative and qualitative, which are as much means to an end (the shaping of scientific objects) as they are themselves subject to scrutiny in terms of objective reliability (the use of methods for attaining objectivity).



Secondly, objectivity is not the exclusive task or achievement of scientific method as applied to natural objects (taken as a paradigm of objective knowledge). Saying that objectivity is a practice should not obfuscate the differences in practice pursued and developed by different sciences in their fields of inquiry.

Exploring how a specific category of scientific objects (social objects) is identified and works in the context of an applied metaphysics stands as a useful reminder of the complexity and multifaceted nature not only of scientific objectivity, but also of scientific reality.

## Notes

- 1 Previous versions of this paper were presented to the 'British Society for the Philosophy of Science', London (February 2004), and to the 'History, Philosophy and Sociology of Science' Symposium, Assos, Turkey (June 2004). I am grateful to the participants in both meetings for their questions and their useful criticism.
- 2 For this distinction and the relation between O-objectivity and E-objectivity, as well as the way the latter informs the debate between realists and anti-realists, see Bell (1994).
- 3 The realist also assumes that ontological objectivity can be 'captured' by epistemological objectivity, in that the latter can represent, at different degrees of accuracy, 'the way things are'. Crucially instrumental to this task is the idea of method which, ever since the natural philosophers of the 17th century, was conceived as a consistent series of rules not only for good reasoning, but also for 'extracting' truth from facts (rules for the 'direction of the mind', as, for example, Descartes defined them).
- 4 The forerunner of epistemological objectivity is normally considered to be Kant. He is certainly the first to have made use of the term and of the concept in a specific sense and for a specific purpose in philosophy. Objectivity for Kant is a property of human understanding, not a feature of the external world. The latter would appear to us as a disconnected manifold of heterogeneous experiences if it were not for the ordering attitude of the human mind, which organizes the world by objects. The ordering itself is objective because it does not depend on individual intellects. The mind has a structure which is shared by everybody, and works by producing categories and imposing rules which are the same for everybody. Kant is not then an anti-realist, in that he does not deny that an external world is needed in objectivity talks; but he is not a full-fledged realist, as he does not claim that objectivity depends plainly on the existence of an external world.
- 5 Such a reconstruction takes hints from both Ian Hacking (1999: 6) and André Kukla (2000: 1-3).
- 6 An example of this argument is offered by A. Pickering's discussion of quarks. Quarks are what they are because physics evolved the way it did, and elicited certain phenomena construed as evidence for the existence of quarks. However, physics could have evolved differently. According to Pickering, its evolution was contingent, and contrary to what many scientists would claim, it was not inevitable (Pickering 1984). Often the idea of non inevitability is associated with a negative connotation of a constructed X. As Hacking points out, 'most people who use the social construction idea enthusiastically want to criticize, change, or destroy some X that they dislike in the established order of things'. (Hacking 1999: 7). A typical example is the feminist critique of the notion of gender.
- 7 For the distinction between product and process, see Hacking (*ibid.*: 36-38).
- 8 See (Kukla 2000: Ch. 1).
- 9 For the distinction between these three levels, or 'theses' concerning the social constructivist argument see Kukla (*ibid.*: 4-6).

- 10 X can also be an *elevator word* (a word used to say something about the objects, or about what we say about them). See Hacking (ibid: 22–24).
- 11 See Daston (2000: 3).
- 12 Daston (2000: 1).
- 13 Daston (2000: 2).
- 14 Daston (2000: 1).
- 15 See Daston (2000: 15ff).
- 16 Daston (2000: 5).
- 17 See for example Kukla's classification (2000: 24–25). He presents four main categories of facts:
- (1) scientific facts: only the facts discovered or invented by the institution of science/only the facts of the (putatively) natural sciences/the non-social facts produced (discovered/ invented) by any special epistemic enterprise that goes beyond the practice of common sense
  - (2) social facts: the facts of the social sciences
  - (3) everyday facts: facts whose discovery or invention takes place outside the institutional boundaries of science or any other professional epistemic enterprise
  - (4) noumenal facts: facts about the world which are inaccessible by any method available to human beings.

Immediately we see a discrepancy between (1) and (2). If scientific facts are the facts produced by any special epistemic enterprise that goes beyond the practice of common sense, then the facts of social science qualify for this category. However, category (1) is rather confused. It seems to imply, and far too quickly, that the only science is natural science; that the institution of science has nothing to do with the social; that natural science provides for a paradigm of what a 'special epistemic enterprise' should amount to.

Kukla's classification is conceived having in mind the debate on constructivism, which appears to be particularly harsh (from both sides of the divide) when the constructed nature of *natural* facts is at stake. In order to identify the natural with non-social facts, Kukla must deny scientific status to the subject matter of the social domain. But by so doing, he ends up assuming that the social sciences are not sciences; and – at least at the stage of his argument where he is laying out this classification of objects – it is not clear by what process social objects are brought about and investigated, or ultimately how they exist.

- 18 Hacking (2002: 11)
- 19 Daston (2000: 9). Also in Hacking the examples offered of objects of this latter sort are somehow objects of study belonging to the human realm (psychic trauma, child development, multiple personality disorder, suicide, child abuse, etc.). The coming into being which occurs in science labs does not *create* objects for Hacking (facts, entities, phenomena), or – as he famously put it – labelling an atom 'atom' does not make any difference for the existence of the atom. See Hacking (2002: 14–15). However, Daston also points out that social objects share the type of novelty called 'emergency' with the objects of mathematical physics. This, among other things, is her way to show how the difference between natural and social objects is not after all so crucial, and that they can all comfortably accommodate within the same metaphysics (Daston 2000: 9).
- 20 See Wagner (2000).
- 21 Daston (2000: 12).
- 22 Daston (2000: 13).
- 23 In fact, Daston takes the expression 'more or less real' from Latour himself. In discussing the debates between Pasteur and Pouchet on spontaneous generation, Latour claims that existence is not an all-or-nothing property, but a relative property. Entities gain or lose in reality, depending on whether and how they are associated with other entities which either sustain or degrade their existence. He illustrates this by means of



a graph which shows how 'Pouchet's spontaneous generation becomes *less and less real*, and Pasteur's culture method become *more and more real*'. [my italics] (Latour 2000: 256–257).

24 Latour (2000: 251).

25 Searle (1995: 28).

26 Hacking (1999: 103–106).

27 Root (1998: 633).

28 *Ibid.*: 633.

29 Elster (1989: 287) quoted in Root (1998: 635).

30 Root (1998: 635).

31 Root (*Ibid.*: 638).

32 Latour appears to be more sensitive to the ontological nuances of the category of 'reality'. Still, by being specifically interested in showing that reality is relative in all and any scientific object, and that natural objects are no exception, he does not offer us sufficient tools to explore what a socio-historical ontology consists of in the case of social (or human) objects. Besides, and as already noted, he seems to shift far too quickly from the historicisation of the discovery of scientific objects to the historicisation of the reality of those objects themselves.

33 I argue for this view of objectivity in Montuschi (2003).

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