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ARE SPECIES SOCIAL OBJECTS? SOME NOTES¹

Abstract

Although biological species might seem paradigmatic natural objects, several objections can be advanced against their independence from taxonomic activities and from scientific and social practices in general. Darwin himself, in the second chapter of the *Origin*, claimed to be looking «at the term species as one arbitrarily given, for the sake of convenience, to a set of individuals closely resembling each other». In this contribution, I sketch the sticking points of the issue whether species are natural or social objects in the light of two of the main accounts of social objects, namely Searle's, on the one hand, and Ferraris' on the other.

1. Natural vs. Social: a Sharp Distinction

Although different in their core, the theory of social reality put forward by Searle (1995; 2010) and that by Ferraris (2009; 2012) are in a substantial agreement in drawing a sharp ontological distinction between natural objects and facts, on the one hand, and social or institutional objects and facts, on the other.

Consider the following statement: "The conference 'Social Ontology. From Intentionality to Documentality' was held in March 2011 at the Institute for Philosophy and Social Theory in Belgrade". The statement concerns a certain historical fact, and that fact makes it true or false – true, in this case. Nonetheless, that fact requires human institutions for its existence – things like conferences, cities, institutes, researchers, and so on – and thus it depends, ultimately, on human agreement. Now consider: "Your body is made of 16% proteins, 13% lipids, 1% glucids, 65% water, 5% mineral salts". This statement too concerns

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an objective fact, which makes the statement true. But this fact does not require human institutions for its existence. In this case, human institutions – such as language and scientific theories – are only needed to *state* the fact. Trivially, without language and scientific theories, a claim about the composition of human body could not be made; still, that very composition is completely independent of what human beings may think, know, and say about it. It only depends on physical and chemical objects involved.

In John Searle's words:

In a sense there are things that exist only because we believe them to exist. I am thinking of things like money, property, governments, and marriages. Yet many facts regarding these things are “objective” facts [...] as that I am a citizen of the United States, that the piece of paper in my pocket is a five dollar bill [...] These contrast with such facts as that Mount Everest has snow and ices near the summit [...] Years ago I baptized some of the facts dependent on human agreement as “institutional facts”, in contrast to noninstitutional, or “brute”, facts. Institutional facts [...] require human institution for their existence [...] Brute facts require no human institutions for their existence².

In a similar spirit, it has been claimed by Maurizio Ferraris that natural objects and social objects are two completely different types of objects altogether. Natural objects, such as mountains, rivers, human bodies, and animals, exist in space and time and are what they are independently of our beliefs, emotions, observations, and cognition of them. Social objects endure in time and exist in space, but – unlike natural objects – their physical presence is limited, according to Ferraris' theory, to the inscription being at their basis. And, contrary to natural objects, they depend on our subjective activities. After defining social reality as the sum of all social objects, and natural reality as the sum of all natural objects, Ferraris writes:

(a) [...] natural objects exist independently of our conceptual schemes, while social objects require such schemes essentially; and (b) [...] the schemes that are at work in the experience of social objects are different from those that apply to the science of natural objects. At this point, it is no longer possible to maintain that natural reality is constructed like scientists' theories, as the postmodernists claim³.

At first glance, the sharpness of the natural/social opposition is fairly intuitive and convincing: a stone is there, and it is what it is regardless of any representation we may have of it and of our presence, thoughts, and intentions. The Belgrade “Institute for Philosophy and Social Theory” is there, of course, but unlike the stone, without us it wouldn't be an institute for philosophy and social theory but merely an aggregate of bricks and glass. Nonetheless, if we carry

² Searle 1995: 1-2.

³ Ferraris 2009: 120 eng. tr.

the examples beyond the paradigmatic cases, it seems that some objects – and some facts involving those objects – challenge the sharpness of that opposition, asking for more fine-grained distinctions. In the following, I will focus on the case of biological species.

Before getting to the heart of the matter, a preliminary remark is in order. Even though Searle and Ferraris agree in drawing a sharp distinction between the natural and the social realms, they strongly disagree on which are the mechanisms underlying and regulating social reality. This can easily be seen by looking at the two constitutive rules of social objects that are at the basis of their respective theories: *X counts as Y in C* (Searle) and *Social Object = Inscribed Act* (Ferraris). While for Searle social reality rests on collective intentionality imposing functions, for Ferraris it rather rests on inscriptions: «Social objects follow from the registration of acts that involve at least two persons and that are inscribed on any kind of physical support»⁴. A second, more radical difference, albeit less explicitly stated, concerns the background ontologies embraced by the two philosophers. According to Searle, the basic ontology is scientific, i.e., it is the ontology that emerges from the picture of the world as sketched by our best scientific theories. Accordingly, the basic ontology is mainly shaped by the acceptance of the results of two theories: the atomic theory of matter and the evolutionary theory of biology. The picture of reality offered by these two theories is, in a nutshell, the following:

The world consists entirely of entities that we find it convenient, though not entirely accurate, to describe as particles. These particles exist in field of force, and are organized into systems. The boundaries of systems are set by causal relations. Examples of systems are mountains, planets, H₂O molecules, rivers, crystals, and babies. Types of living systems evolve through natural selection, and some of them [...] have evolved consciousness. With consciousness comes intentionality, the capacity of the organism to represent objects and states of affairs in the world to itself⁵.

Thus, the burning question underlying Searle's work (1995 and 2010) is: «How can we account for the existence of social facts within that ontology?»⁶.

Things are different in Ferraris' *Documentality*. Here, scientific ontology and social ontology are reconciled in what Ferraris will call, in 2012, «New Realism», where the «unmendability»⁷ of perceived reality dislocates scientific theories in

⁴ *Ibidem*: 159.

⁵ Searle 1995: 6-7.

⁶ *Ibidem*: 7.

⁷ The expression has been coined by Ferraris in his book *Il mondo esterno* (2001), and it refers to the impermeability to conceptual schemes that would characterize ordinary experience. «While I am looking at a fire – Ferraris writes – I may think of it as a process of oxidation, as the action of phlogiston and caloric; but, under normal conditions, I cannot put my hand into it and not get burned» (Ferraris 2004: 123, fn. 7).

the field of epistemology *contra* the field of ontology (where epistemology and ontology are defined, respectively, as «the sphere of knowledge» and «the sphere of being»⁸. Put differently, perception results in ontology, while science results in epistemology: the outcomes of the first are unemendable while the outcomes of the second are always perfectible and can be rejected or replaced. For Ferraris, then, conflict arises not between two ontologies (scientific and social) but rather between epistemology and ontology⁹. The question here will be something like: “What if science and perception disagree? Which of the two should we believe?”.

2. *The Conundrum of Species*

Paradigmatic examples of natural/brute objects and facts *vs.* social/institutional objects and facts are things like mountains, animals, and molecules *vs.* things like money, marriages, and governments, or facts involving the former things *vs.* facts involving the latter. I would like to argue that the some objects, such as taxonomic categories and the entities that they countenance, are not so easy to place on either side of the divide. In order to have an initial idea of why is it so, consider whales. As it is known, in the first edition of Linnaeus’ *Systema naturae* (1735), whales were classified as fish. In the tenth (1758), they “became” mammals. It is obvious that whales, those very organisms, did not undergo any change from 1735 to 1758. What changed was Linnaeus’ way of classifying them. Thus, on the one hand, it seems that we should say that families, genera, species, etc. are social objects, insofar as their characterization depends on our classificatory practices; but, on the other hand, it would seem odd to claim that *mammal* and *fish* are socially constructed categories. Even more odd would be to claim that our biology is founded on social objects.

In what follows, I will focus on species, since it is with species, more than with other taxonomic categories, that the conundrum is particularly evident. Indeed, as with most social objects, and unlike natural ones, if someone asked you to point at the *H. sapiens* species, it is not clear what you should point at. Moreover, it can be argued that species boundaries are affected by a certain indeterminacy. It is for that reason that Darwin himself claimed to be looking «at the term species as one arbitrarily given, for the sake of convenience, to a set of individuals closely resembling each other»¹⁰. Accordingly, the intuitive idea that species are natural objects is anything but unquestionable¹¹. One of the main argument is that lines of descent exist in the four-dimensional continuum; to single out species on this continuous, *we* must chop it into discrete units in some arbitrary way¹². Since everything is but

⁸ Ferraris 2009: ch. 2.

⁹ See Ferraris 2010: 43 ff.

¹⁰ Darwin 1859: ch. 2.

¹¹ See, for instance, Stamos 2003.

¹² Burma 1949.

a succession of conformations of individual particles of matter in time, the larger the aggregates we have to deal with become, the more our categories (which is to say the results of our grouping individual particles together) become abstract and devoid of real reference. Accordingly, for Burma, «Species and subspecies are the units with which the taxonomist deals, but they are merely convenient labels for arbitrary groupings and have only a minimum of biological meaning»¹³.

Nevertheless, at the same time species enjoy, at least in contemporary evolutionary biology, a sort of ontological primacy over other entities such as genera or families. This is partially because in Gould and Eldredge's model of punctuated equilibria (1972), «species boundaries become less arbitrary than in Darwin's own view, and species eventually emerge with an individuality that turns them into potential units of selection»¹⁴. If we agree with the majority of contemporary biologists, evolution is a fact concerning species¹⁵ (mainly, if not only), and it is a fact independent of us. Borrowing Searle's expression, we would be inclined to say that evolution is a *brute fact*. Species speciate and become extinct, shaping the diversity of life on Earth; they are discovered, have causal power, can be counted, are countenanced in biological laws, have a starting point and an end. Accordingly, it is very tempting to consider species as objective features of the natural world, hence as *natural objects*. As Ernst Mayr puts it:

The species is the principal unit of evolution [...] The term "species" refers to a concrete phenomenon of nature and this fact severely constrains the number and kinds of possible definitions. The word "species" is, like the words "planet" or "moon", a technical term for a concrete phenomenon¹⁶.

However, Mayr continues, «the conclusion that there are concrete describable objects in nature which deserve to be called "species" is not unanimously accepted. There has been a widespread view that species are only arbitrary artifacts of the human mind». As if to confirm this, while I am writing this article Google alerted me about the publication of a commentary by Zachos and Lovari in which it is argued that the Phylogenetic Species Concept¹⁷ «results in taxonomic

¹³ *Ibidem*: 370.

¹⁴ Minelli 2013.

¹⁵ According to Darwin selection operated on individual organisms only – Darwin's theory is a theory of microevolution (and this is probably enough to explain the popular fragment of the *Origin* reported above).

¹⁶ Mayr 1996: 262-263.

¹⁷ The Biological Species Concept – that was widely accepted in the aftermath of the Modern Synthesis and according to which species are reproductively isolated units – is becoming more and more replaced by the Phylogenetic Species Concept, which defines a species as the smallest diagnosable group of individual organisms tied by a parental pattern of ancestry and descent (see Cracraft 1983: 170).

artefacts because it is theoretically flawed»¹⁸. Now, even without entering into the controversial question of what is the best species concept (more than 20 concepts are attested in the literature)¹⁹, it is clear that somehow, when species are talked about as an *outcome* or a result of a given concept, the ghost of social objects is beating on the door.

Who is right? Are species social objects? In order to make some progress towards answering the question that drives this contribution, a first, crucial distinction is in order. “Species” can refer to two different things. On the one hand, it can refer to (1) a *category*. This can be understood as (1a) a rank in the taxonomic hierarchy, more precisely the rank above subspecies and below genus; or (1b) a class, namely the class whose members are all and only the species taxa. On the other hand, “species” can refer to (2) *species taxa*, namely groups of populations comprised of concrete individual organisms, such as *Homo sapiens*, *Rosa gigantea*, *Felis catus*.

(1a) Taxonomic levels can be quite easily treated as abstract objects. To put in a Millian way, “species” is in this case an abstract name that stands for an attribute of a thing rather than for a thing:

A concrete name is a name which stands for a thing; an abstract name is a name which stands for an attribute of a thing. Thus, *John*, *the sea*, *this table*, are names of things. *White*, also, is a name of a thing, or rather of things. Whiteness, again, is the name of a quality or attribute of those things. *Man* is a name of many things; *humanity* is a name of an attribute of those things. *Old* is a name of things; *old age* is a name of one of their attributes²⁰.

In the present case, «the thing» are the taxa, and «the attribute» could be called the *specieness*, namely the attribute of belonging to a certain taxonomic rank. Of course, things become more complicated when we switch from a mere semantic statement of the issue to a more metaphysically engaging one, i.e., when we ask whether the attributes sort things into classes and, if so, what is the ontological status of those classes.

(1b) A class, in itself, seems to belong to the realm of abstract objects, too. Accordingly, you can be a nominalist on abstract objects, rejecting them altogether, or you can be a realist, thinking that they exist somewhere, out of time and space, in a causally inert fashion²¹. But this is a different matter than the one we want to address in asking whether species are social objects. When we say that mountains are natural objects, or that banks are social objects, we clearly have in mind mountains and banks as concrete particulars; we are not

¹⁸Zachos and Lovari 2013: 142.

¹⁹Mayden 1997.

²⁰Mill 1900: 17.

²¹This is, of course, a naïve characterization of what abstract objects are thought to be, but here can do the job. For a discussion, see Burgess and Rosen 1997: 13-25.

concerned with the class of all mountains, the class of all banks, or with some kind of abstract object whatsoever. As a result, to properly address our question we need to leave the first way of understanding “species”, namely (1) as a category – be it a taxonomic rank or a class – and shift our attention to the second way, namely (2) as species taxa.

3. From the Species Category to Species Taxa

To investigate the ontological status of species taxa, two different points must be made. First, we need to draw a clear distinction between folk and expert understanding of species taxa; second, we need to consider the metaphysical status of taxa.

Beginning with the first point, it is widely known that species as conceived in our everyday life overlap only partially with those recognized by taxonomists, and their names, too, are quite different²². Scott Atran (1999) proved that “folkbiological” species – which he named “generic species” – reflect characteristics of both species and genus taxa, probably because distinguishing between genus and species is not pertinent to the knowledge of the local environment or to practical purposes. Generic species sometimes correspond to scientific genera (for instance, oak), sometimes – usually in the case of the most phenomenally salient and well-known organisms – to species (for instance, cat). Sometimes, as Atran states, folkbiological species correspond to fragments of biological families (vulture) or orders (bat). It should be noticed that generic species cannot easily be dismissed as mere mistakes or deviations from scientific species. They are quite stable and shared objects: ethnobiological evidence proves that human societies everywhere share similar folkbiological structures, and these cross-cultural invariants suggest that folkbiological taxonomy is a taxonomy with full rights, quite coherent, and structured around a small number of universal organizing principles²³.

As noticed by Dupré (1981), the extensions of folkbiological species taxa are quite dependent on our needs and interests. In folk taxonomy, a certain group of organisms can be classified as a species – the ontological privileged level – because they are economically or culturally important (silkworms, sheep, oaks) or maybe because they are nice and furry (Koala bears, rabbits), or again because they are very noticeable (tigers, elephants). And this list «could no doubt be extended almost indefinitely, which merely reflects the immense variety of human interests»²⁴. Folk taxonomy often responds to our everyday needs in a more effective way than scientific taxonomy: it would be a severe culinary misfortune – says again Dupré – if a gourmet would not put more emphasis on the distinction between garlic and onions than the expert taxonomist.

²² Dupré 1981.

²³ Atran 1990; Berlin 1992.

²⁴ Dupré 1981: 80.

Back to our question, because of their dependence on our needs and interests, it would seem quite reasonable to classify generic species as social objects. If we weren't there, some generic species would not exist, or would be quite different from what we think they are. If so, recalling the respective questions underlying Searle's and Ferraris' different ontologies, in one case we should deal with the question: "How can we account for the existence of generic species within an evolutionary-based ontology?"; in the other, with the question: "What if folk and expert taxonomy disagree? Who would be right?"

Starting with the second question, in some cases generic species and scientific species correspond, as with cats (*F. catus*) or human beings (*H. sapiens*). Regarding those cases in which they do not correspond, a pluralistic view about species taxa could do the job. To be sure, pluralism on species taxa comes with a high price to pay, namely the questioning of the reality of species. Nevertheless, several attempts have been made to avoid paying such a price²⁵. As for Searle's first question – how to account for the existence of generic species within an evolutionary-based ontology – a possible answer is that, while taxonomists try to reconstruct the evolution of species and to reflect it in biological taxonomies, generic species seem to belong more to *our own* evolution, and this should be enough to reconcile them with an evolutionary-based ontology. In fact, it seems plausible to think that the universal and spontaneous understanding of the organic world at the basis of folk taxonomies is «an evolutionary adaptation [...] to relevant and recurrent features of hominid ancestral environments (e.g., wide-ranging subsistence involving the understanding of potentially indefinitely many species and habitats)»²⁶.

Consider now species taxa as they are recognized by expert taxonomists. While in the case of generic species it seems reasonable to suppose that such groups are, to a great extent, the product of our own perceptual system and pragmatic interests, the aim of scientific taxonomies is to mirror the structure of natural world, with no reference whatsoever to our interests or cognitive activities (even though, of course, taxonomists are human beings and their activity is constrained and conditioned by their own cognitive limits and biases)²⁷. Are taxa as recognized by experts *natural* objects?

This question takes us to the second point mentioned at the beginning of this section, namely, what sort of entities are species taxa, in the understanding of taxonomists? Traditionally, species taxa are considered to be sets or classes of organisms: *H. sapiens* is the set or class made up of all human beings. If so, then the answer is almost trivial, as in (1b) considered above: species taxa are neither social nor natural objects; rather, they are abstract entities whose members are

²⁵ Kitcher (1984) and Ereshefsky (1992) apply pluralism to scientific species only; while Dupré (1993) takes into account folkbiological species too.

²⁶ Atran 1999.

²⁷ See, for instance, Hey 2001.

concrete organisms. By contrast, an increasingly popular view sees species taxa as particular, individual things²⁸. Intuitively, they are “large” individual wholes that are literally composed of concrete individual organisms, in the same way in which an individual organism is composed of its own cells. Thus, for example, on this view a human being is literally a *part* of the taxon *Homo sapiens*, not a member of it. Understood in this way, species taxa possess a history of their own along with peculiar features that do not depend in any way on us. They are spatiotemporal entities, just like the individual organisms they consist of (and like stones, mountains, etc.); they have a beginning and an end; they can make more of themselves (by speciating); and so on. They are, in short, “super organisms” of some sort, provided with their own identity and survival conditions and – according to some (e.g. Johnson 1992) – with interests in their own right. Understood in this way, it seems reasonable to think of species taxa as of natural objects, at least to the extent that we are inclined to think of a human being, a stone or a mountain as a natural object – a claim that both Searle and Ferraris would be willing to make.

4. *Concluding Remarks*

In this contribution some lines for a possible enquiry on the ontological status of species have been suggested. Starting with a comparison between two of the main theories on social objects, the question whether species are social or natural objects has been raised. It has been argued that answering that question would require a fine-grained analysis of what species are. In particular, species as a category and species as taxa have been distinguished. In the first case, it has been suggested that both ways of understandings species as a category (namely, as a taxonomic level or as a class) are likely to yield an answer to the effect that species are neither social nor natural objects, but rather abstract entities. In the second case, two different notions of species taxa – folkbiological and scientific – have been considered. It has been argued that, while the former can plausibly be construed as social objects, the latter are rather natural (or, better, biological) objects *as long as* they are also considered as individuals.

²⁸ Hull 1976; Ghiselin 1974; and more recently Brogaard 2004.

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