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WHY SORTALS ARE NOT REQUIRED IN METAPHYSICS
AGAINST A CONCEPTUALIST APPROACH TO THE PROBLEM OF INDIVIDUATION
WITHIN THE BOUNDARIES OF ONTOLOGICAL ANALYSIS

F5749

“[The] argument for sortalism has its place in a concern with language and epistemology rather than metaphysics.” (*Singling out Objects without Sortals*, Anne Newstead, 2007).

“[...] Copi (1954), holds that there is a more “metaphysical” and less “epistemic” understanding of the notion of explanation, according to which one thing explains another thing just in case there is a certain mind-independent relation that holds between them.” (*Essential vs. Accidental Properties*, Teresa Robertson, 2008).

“[...] physical objects are natural unities or natural structures which come into existence, continue to exist and cease to exist quite independently of any conceptualizing on our part [...] What is important is that the recognition of the fact of continuity is logically independent of the possession of sortal concepts, whereas the formation of the sortal concept is at least psychologically dependent, in normal cases, upon the recognition of continuity.” (*Individuals without Sortals*, Ayers, 1974, p.114 and p.117).

In relation to any metaphysical inquiry, many attempts seem to turn over a much less reliable and eventually confusing, if not incomplete, epistemological interpretation¹. So seems to be the case in relation to the problem of individuation.

The aim of this paper is to analyse for which reasons individuation by mere conceptualist analysis is not possible (where individuation is taken between two qualitatively different but numerically identical objects), so to promote a return to a more metaphysical interpretation, as originally challenged by Leibniz’s Law.

To do so, I shall consider what seems to be the most compelling account in which *absoluteness* of identity is promoted but under the influence of a moderate conceptualist interpretation: Wiggins’ sortal theory. Such argument is compelling for it is able to reduce many of the epistemic attacks proposed by the anti-sortalists. I shall then conclude by

¹ So it has been advanced also by Kripke in his *Naming and Necessity*, whose claim can be summarised in the statement: “[...] some philosophers somehow change the modality [...] from *can* to *must*. [...] This is just a mistake.” p. 35.

proposing a new picture for interpreting sortals, one which is favorable to a sortal-neutral theory.

What our agenda will then require is:

- a specification of the problem in its general lines;
- a clarification of the scope of our inquiry, which includes only *essential-natural change* (or in Aristotelian words what happens to be by means of ‘final cause’) in *natural kind entities* only; reasons of why *artifacts* and *artificial* (or ‘efficiently caused’) *changes* in natural kind objects are excluded, will be given when possible;
- a definition and an attack to what is proposed by the sortal theory in general;
- we will then be able to see why Wiggins’ claim, as it is offered in his *Sameness and Substance*, is fallacious in respect of the conceptual approach grounded in his theory.

We shall conclude, in Section III, with an analysis of how sortals ought to be considered in relation with their specific limits as outlined here in. I assume that sufficient reasons for a non conceptual analysis of individuation will be given, without nevertheless assuming any invalidity in the sortal theory from an epistemological point of view².

I

“The central notion involved in any modal characterization of the distinction between essential and accidental properties is that of metaphysical necessity/possibility. [...] Numerous kinds of epistemic possibility have been of interest to philosophers, but all that is important for our immediate purpose is that metaphysical possibility is not a form of epistemic possibility.” (*Essential vs. Accidental Properties*, Teresa Robertson, 2008).

Some clarifications are required in relation to epistemological versus metaphysical analysis; these can be represented in the following way:

- a) To wonder whether an object, *a*, at *t1* is the same object, *b*, at *t2*, is a metaphysical task;
- b) The same holds in questioning *why* it is possible to determine the *necessary* conditions under which *a* and *b* are the same object.

² It ought to be kept in mind that our aim here is to see why sortals are not required in metaphysics only.

In different words: we are to understand the *de re* ‘must’ that is given by nature; or as Wilkerson said: “[...] any decision about identity must be referred to, and settled by, nature”³.

c) On the contrary, to wonder whether any extra element, so to define my way of thinking of these objects, should be employed to facilitate such individuation, is merely epistemological.

This latter simplification aims to *understand* under which conditions, and restrictions, singling out an object is *possibly universal*. In other words, the dichotomy here is about whether we choose to *see how the world is*, or *how we see the world*. This is, I assume, what Richard E. Grandy questions in his *Sortals* (2007): “One of the unclarities of the phrase ‘criterion of identity’ is that it is never spelled out what the criterion is to be applied to. For example, is it a criterion to be applied to names of objects or to perceptual representations of objects or to the objects themselves?”⁴.

To better understand the problem, let’s assume the following, well known case: cup *a* at *t1* and truncated-cup *b* at *t2*: by following Leibniz’s Law: “sameness of things gives sameness of properties”⁵:

$$(\forall P) (\forall x) (\forall y) ((x = y) \supset (Px \equiv Py))$$

a cannot be identical with *b*: This problem is known as ‘the problem of identity over time’, where there is at least one property by which *a* (at *t1*) and *b* (at *t2*) are not identical; therefore an account of how the same - numerically identical - ‘cup’ can persist over time (so to show why qualitative distinction between *a* and *b* is still possible), is required.

Some intuitions, nevertheless, set up our starting point: we ‘know’ that *a* and *b* indeed are the same object: this is equal to the ‘first wondering’ expressed above (a); to understand *why* this equality can be necessarily defined as *a* being identical with *b*, is what concerns our ‘second question’ (b). Again: both are to be taken under a specific metaphysical approach. But to give priority over our way of defining that (*a* = *b*) such that

³ Natural Kinds and Identity, an Horticultural Inquiry, T.E. Wilkerson 1986, p. 64.

⁴ Sortals, E. Grandy, Stanford Encyclopedia, 2007

⁵ *Universals, an Opinionated Introduction*, Armstrong 1989.

identity can be ultimately confirmed, is far from being a metaphysical task: one solution being to employ the possibility of conceptualising over *a* and *b*, in such a way that *absoluteness* of identity between cup *a* and truncated-cup *b* is eventually at risk: the origin of it being possibly (and in case of sortals, I assume, most probably) contingent.

How can this be so? A brief, but incomplete, foreword in explaining such a conclusion could be that, any possible theory concerning sortals ought to include ‘sortal-ignorance’ as a possibility which, as we shall see, inevitably leads to serious difficulties in individuating our object of inquiry. It would then follow that it is only a contingent matter whether the perceiving subject is in effect able to actualize such individuation.

This conclusion, however, is not sufficient: more clarifications are needed. We may start with answering a much more basic question: what is *individuation*? From a sortal-essentialist point of view, criterion of identity and individuation are strictly related⁶. Now, as claimed by B. Brody in his *Natural Kinds and Real Essences* (1967), any theory of identity has to solve two problems: it must give a criterion of identity of the object through at least some changes; it must also give a criterion for selecting one among various objects that have certain properties in common⁷. In relation to our inquiry, we may take the first requirement for granted, for it partially sums up what is at issue here; the same however does not apply to the second problem: the ‘selection’ advanced can be interpreted in two, very different ways: either as a mere presupposition of what *we* ‘produce’, as entities that do individuate, for such a selection to be possible (call it Interpretation 1); or a specific aspect that indeed belongs to the object itself (Interpretation 2). Again: if the first option is assumed, we are still within the boundaries of epistemology; to opt for the second, however, is equal to opting for a well determined ontological commitment, the difference being that only by Interpretation 2 we are lead to an inquiry over the object as it necessary *is*.

It will now be useful to see whether Wiggins’ interpretation deals with the first or the second of our interpretations. Prior to this, however, it is important to establish the scope

⁶ cf. Sortal Concepts and Essential Properties, P. Mackie, p. 313.

⁷ Natural Kinds and Real Essences, A. Brody 1967, p. 441

of our inquiry (which entities are included, and under which conditions such entities can be analysed).

“It looks, therefore, as though essences are connected in some way with explanations, as though the essential properties of an object are those which are used to explain the other properties of the object. [...] I am suggesting that it is the properties that we use in explaining other properties that are said to be essential, and it is not as though we had some separate criterion for picking out what properties are essential.” (Natural Kinds and Real Essences, A. Brody, 1967, p. 445).

In here it is assumed that a theory of change over time should only include *natural kind objects* where only essential change ought to be considered. This last requirement needs a further clarification: if I cut a whole tree into very small pieces, the essence of the object is inevitably lost: the tree has ceased to exist as such (change by means of *efficient* cause). A different situation is that of a tree ceasing to exist naturally, i.e. by age (change by means of *final* cause). While these two scenarios have in common the loss of the tree’s essence, in the first case we can only individuate the causal history of the object’s ceasing-to-exist in relation to external factors, while in the latter, this can be done within the boundaries of the object’s existence only, independently of any external factor.

It follows that, in employing this Aristotelian view, the question by which I seek to individuate a numerically identical but qualitative distinct object, cannot rely over the problem of how artifacts do change: to say that cup *a* and truncated-cup *b* are numerically the same object one ought to be able to define its causal history: i.e. a valid causal chain which is able to determine the causal dependance between the event representing object *a* and that representing object *b*. The same applies to *natural kind objects* where change is produced by means of an efficient agent: to cut a branch from our tree at *t2* is a clear example of the kind: a causal chain can be defined so to determine why different qualities in tree at *t1* and tree at *t2* belong to one and the same object. Such a causal chain is the *sufficient* requirement for the individuation of sameness of such objects.

When we turn back to the problem of change over time in natural kind objects, our main interest directs to the essence of such objects, and most precisely over their essential properties. It is important to remark this secondary distinction (between object’s essence and object’s essential properties) for the following reason: when Bennett (1969), as well as many others, attempts to define what an essential property is, a common example is:

“Socrates was essentially a man, but he was not essentially wise or ugly or a philosopher, nor was he essentially an entity, or of flesh and blood, or not a dog.”⁸. It is understandable why Bennett later claims that: “Essential properties *sort* the entities of which they are true in some fashion.”. However, it seems that a confusion is present here: can ‘being a man’ be considered on the same ontological level of ‘being wise’? In other words: do these two attributions effectively belong to different ontological ‘departments’. If we are to assume that:

- *essential properties* of an object are those properties that an object must (necessarily) have; while

- *accidental properties* are those that an object happens to have but could (possibly) lack,

the question is: for which reason ‘being a man’ should belong to the former and not the latter group? If ‘being a man’ is, as it should be, taken as a *concept*, and if the ‘status of contingency’ of conceptualising over an object is taken as valid, then such a property shall be individuated only by those which are not sortal-ignorant of such a concept: thus, ‘being a man’ should belong to the latter group (an object, *x*, may lack the property ‘being a man’, if no one is able to individuate *x* as such).

Also, in regards to ‘to be wise’ and ‘to have blood’, one can make a further distinction, the former being, agreeably, accidental; and the latter, I assume, essential, for it is *constitutively* so.

It will then be clear that what should be adopted is the view that only a *purely qualitative constitution of things* ought to be considered⁹. This brings to the conclusion that what we define as *haecceitas* might have nothing to do with sortals, but only with the qualitative characterisation of an object¹⁰.

⁸ Essential Properties, Bennett (1969), p. 488.

⁹ So as it was claimed by others such as Leibniz, Ayers, Russell, among others.

¹⁰ At this stage we can still purport the possibility that no *bundle* view (either involving tropes or universals) ought to be implied, cf. Primitive Thisness and Primitive Identity, R. M. Adams 1979, p. 7.

II

Now that the preliminaries of our inquiry have been established, we can turn to the sortal theory of individuation, so to analyse whether the second task proposed by Brody (see above) is indeed taken under our second, metaphysical, interpretation (any theory of identity must give a criterion for selecting one among various objects that have certain properties in common; where selection is derivable from a specific aspect that only belongs to the object itself) or not. We shall first see under which reasons conceptualism can be put under attack: by doing so we will also review the basis for a sortal view in its general terms. Our inquiry will then lead to two fundamental questions: *where are sortals from?* and *Is individuation satisfied by sortals?* Both will be analysed in relation to the general conceptualist analysis and Wiggins' sortal theory. It will be shown, not only that both questions will lead to a negative answer, but it will also give reasons to support a more limited view of how sortals should be considered (Section III).

“How general words are made. The next thing to be considered is, – How general words come to be made. For, since all things that exist are only particulars, how come we by general terms ; or where find we those general natures they are supposed to stand for ? Words become general by being made the signs of general ideas : and ideas become general, by separating from them the circumstances of time and place, and any other ideas that may determine them to this or that particular existence. By this way of abstraction they are made capable of representing more individuals than one ; each of which having in it a conformity to that abstract idea, is (as we call it) of that sort.” (*An Essay Concerning Human Understanding*, Locke, Book III, Ch. 3, 6).

What are sortals? For Lowe we have *sortal concepts* (a cat, an apple, etc.) which are expressed by *sortal terms* (cat, apple, etc.) where a ‘concept’ is “a way of thinking of some thing or things”¹¹. In his *Sortals and the Individuation of Objects* he claims that: “[...] concepts, being ways of thinking of things, are ways of being and hence properties — and, more specifically, *mental* properties, since thought is a mental process. (What they are properties *of* is a matter for some dispute, but I shall assume [...] that they are properties of *persons*, on the grounds that persons, certainly, are thinkers, even if they are not alone in being thinkers.)”¹². Justifiably, we may wonder what are such ‘properties of *persons*’. It is furthermore claimed that, independently of our ontological view, there are

¹¹ Lowe 2006 , pp. 85 – 86.

¹² *Sortals and the Individuation of Objects*, Lowe 2007, p. 516.

not consequences over the existence of concepts: for they can only be either ‘grasped’ or ‘failed to be grasped’. Two questions arise:

- in relation to what concepts can only be either grasped or failed to be grasped?: for this to be valid, concepts would have to be taken as proper existents, and the ‘baptizing of one would justify its existence *necessarily* (this seems, however not very coherent, as we shall soon see);

- and how can this be of any help in the metaphysical analysis regarding absoluteness of identity?

The former question expresses a problem that can be more easily understood by paraphrasing it as: *Where are sortals from?*; in other words: what ontological role they cover and, if none (specifically), is there any way to ‘confidently’ rely on their *objective* possibility? (Problem 1). The latter, instead, can be paraphrased as: *Is individuation satisfied by sortals?* (Problem 2). This includes a justification of the boundaries between phase and substance sortals, as well as the necessary determination of the latter in relation to the essence of an object. In order to object any sortal theory we ought first to see how such a theory deals with Problem 1, and if positively answered, with Problem 2.

PROBLEM 1 (*Where are sortals from?*). To assume that sortals represent something constitutively inherited in the object has to be excluded; not only because we have already seen that substance sortals play no role in the essential character of any object (at least under the definition of *haecceitas* assumed here [Section I, above]), but also because it is commonly agreed - by the very same supporters of sortalism - that any sortal reference is eventually grounded in a conceptual approach. Without drastically excluding any possibility that such sortals cover any ontological role, we may be unsatisfied with the contingent requirements that a conceptualist has to offer, and want to individuate a logical explanation within semantics.

If we take a case of subject-predicate proposition, where the predicate term has to be ‘nominal’ (‘is a dog’; ‘is an apple’) and not ‘attributive’ (‘is red’; ‘is short’) because it is individuation what is at issue here, (and as Lowe claims: “It is commonly said that the key distinction between sortal and adjectival terms is that while both possess criteria of

application , only the former [nominal predicate term] possesses a criterion of *identity*”¹³), we may assume the following possibilities in answering ‘where are sortals from?’:

- (1) sortals are further elaborations of predicates, *or*
- (2) predicates are derivations of sortals, *or*
- (3) sortals and predicates are two completely distinct entities *or*
- (4) sortal concepts are indeed nothing but predicates themselves.

Let us analyse them in order.

In (1) we assume that an object, x , has a property, ϕ , and from it we derive that given an object, y , the latter will be the same f as x iff both have the property, ϕ . The sortal f in this case will be a collection of properties (a further elaboration of them) sufficient for the identification of an object. This is of course in contrast with Wiggins’ analysis and we can reject it for now.

In (2) we have the reverse order, namely: because x and y are of the same sort, f , we can determine (from f) that they both participate of the property, ϕ . This is, I believe, incomplete, if not wrong, unless a definition can be given of kinds (or sorts) as the representation of sets of properties (so that, from the sortal g , I am able to extract all those properties that - as members of a set - will necessarily belong to g). This seems to be rejected by Wiggins also when, in defining D(iii), he says that ‘coincidence under f ’ stands for a congruence relation *so that* the pair of objects $\langle x,y \rangle$ respects the Leibniz schema ($\phi x \leftrightarrow \phi y$); therefore no strict dependency seems to derive from the sortal to the given property. However, this possibility cannot be completely excluded if we take into account what, in D(vi), Wiggins claims: “[...] [an object] a is traced under f [...]”¹⁴.

We then have the third possibility, where sortal concepts are entities of a different nature compared to predicates. Clearly, we are then in need of a thesis that can explain how a sortal can be a representative of the collection of qualities of a pair of objects $\langle x,y \rangle$. It will be shown whether this works in Section III.

¹³ Sortals and the Individuation of Objects, Lowe 2007, p. 515.

¹⁴ Further reasons of why Wiggins supposedly rejects them will be given later in this Section and in Section III.

The latter possibility, (4), can be applied only if (1) and (2) are proved to be invalid (for being a derivation/elaboration of something makes it clearly different from one another), so to infer a thesis that can establish why, if we are able to choose a specific sortal, only a certain kind of predicates can be possibly rendered as sortal concepts. I assume that this is the way as claimed by Wiggins, as well as by Leibniz in his *Discourse on Metaphysics* (section 8), where the concept of an individual is said to imply *every predicate* for the individual.

In order to verify hypothesis 4, I shall proceed in defining the conceptualist theory from its basic conditions. I will then analyse the differences in relation with the conceptual-realist theory proposed by Wiggins so to be able to see how, if possible, sortal concepts and properties can coexist in relation to the realist account. I shall conclude by giving a new representation of sortal concepts.

From Abelard, a new identification of abstract entities was so defined: there are not universals, but only universal words, which are predicable; they represent abstract concepts. Such concepts are formed by the mind to separate ('single out' in Wiggins' language) the particular given through sense experience. An immediate objection that comes to mind at this stage is that proposed by Quine, which claims that: to say that a thing exists only in our mind is equal to say that it does not exist at all. For if it does exist, it needs to do so *out of us* and *our thinking* of it. For example: to say that the idea of Pegasus is equal to pegasus, is like saying that the idea of the Parthenon is equal to the Parthenon itself; and it can be rejected as absurd¹⁵. Nevertheless, we have to bare in mind, as we will soon see, that Wiggins rejects a *pure* conceptualist ontological interpretation, in favor of a more moderate theory, so that we are still able to formulate a link between identity and the empirically causal properties "in order for our intellectual handling to be able to admit of a broadly phenomenalist analysis"¹⁶.

A way, which I am intended to adopt here, to attack the general conceptualist view, is the one proposed by Bealer, in his *Universals* (1993), where an analysis of *that-clause* applied to intensional statements (i.e. modal statement of assertion and belief) is offered.

¹⁵ On What There Is, W. V. Quine 1948, p.p. 22-23.

¹⁶ This seems to exemplify Wiggins' adherence to both conceptualism and realism; but, it will be argued, is not without serious problems.

He first establishes that the ‘that-clause’ in sentences of the form:

(1) It is true that A

is a *singular term*. Secondly, such a clause can contain externally quantifiable variables. However the question is: how can an atomic intensional sentence be true in an arbitrary language? If we apply Russell’s theory of description and the general realist schema we say that: an A is F[A] iff:

- there is something that the singular term [A] designates;
- the predicate F applies to that thing.

In order to determine its validity, though, we are required to apply a referential analysis, so that, if we have:

(2) F [A]

(2’) Apollo is a Greek god

F [A] is true not because Apollo designates something to which F applies; but for simple *matter of belief*.

Clearly, however, *there are not enough beliefs* to back up every atomic intensional sentences. The problem increases if considering contingently true sentences, for their truth condition can be given only by referring to the world. The only possible solution seems to be then, that “the truth of atomic intensional sentences *must be backed up by reality*”¹⁷.

We can then assume that, in any atomic intensional sentence, [A] either designates a particular or linguistic token (nominalism); a mind dependent universal (conceptualism); a mind independent universal which is yet ontologically dependent on the particular (immanent realism) or an ontologically independent universal (ante rem realism). Here only the conceptual position will be taken under analysis.

¹⁷ Universals, Bealer 1995, p.15.

From a conceptualist point of view, ‘that-clauses’ represent ideas which are contingent entities that depend on the mental activity of – contingent – agents. However, as Armstrong pointed out, a first objection can be purported in accusing conceptualists that ideas, as taken in atomic intensional statements, presumably refer only to tokens and not predicate-types.

But several other objections can be advanced:

- a main feature is that:

$$\sim \Box (\forall y) (\exists i \text{ that applies to } y)$$

where i is the conceptualist ‘idea’. However it is logically possible that $\exists y$ even though there is no agent that can produce an idea of it. Therefore:

$$\Diamond (\exists y \ \& \ \sim (\exists i \text{ that applies to } y))^{18}$$

We also have to consider that:

$$\sim \Box (\forall y) (\exists i \text{ that rigidly single out } y)^{19}$$

for it is still logically possible that there is a y where not actual name n or description would rigidly designate y .

Bealer suggests that the only logical solution for conceptualism would then be to formulate the validity of the existence of a God that has an actual idea also for ‘non-now

¹⁸ As Ian Rumfitt has pointed out, an example is required for such a statement to be compelling for any conceptualist account: i.e. What are such objects? It is intuitively clear, however, that to answer by means of sortal terms, is to ‘play’ the conceptualist game. It will be clarified in Section III, that it is indeed possible for an object to exist, even if it is not the case that there is at least an idea that can be applied to it; all that is required is that we substitute the conceptualist idea of *individuation* with that of *reference*: i.e. to refer to that object as it physically manifests itself, by means of spatiotemporal continuous compresence of its essential properties. All we need to remark here, however, is that given that there is a concept for every existing object, then such a concept ought to be constantly conceptualized (as we suppose is the case when such concepts are stored in the individual’s – or some other entity’s – memory).

¹⁹ This assumption will come useful in Section III, and in answering Question 3, below.

actual objects’, so that his epistemological make up lets him have ideas we could not have. Clearly, no philosophical schema of this kind is available.

This is generally how a conceptual analysis can be put under attack. We shall return to the problem of rigidity and sortals in Section III. We will now move to our prior challenge: that of showing the possible *incompleteness* in Wiggins’ theory of individuation based on our previous assumption that its conceptual approach is the weakest part of it.

“To understand a predicate and know what concept it stands for is to grasp a rule that associates things that answer to it the True and things that don’t answer to it with the False. [...] To grasp the rule, is to grasp how or what a thing must be in order to satisfy a predicate” (*Sameness and Substance Renewed*, Wiggins 2001, p.p. 9-10).

Wiggins presupposes the possibility that, as we have said, a theory of individuation where we can derive true identity statements, has to be founded on the necessity of absoluteness of identity²⁰. Therefore, by rejecting the relativist theory of individuation, we can infer the so called sortal dependency of individuation. To better understand how this is possible, we first need to introduce sortals as defined by Wiggins. These are represented as *f*, *g*, *h*, etc... and ought *not to be confused with predicates* themselves (which are represented by ϕ , ψ , etc...). Sortal concepts are conceived under the condition of individuation: Wiggins claims that, when a thinker singles out *x*, she singles it out as:

- *x*
- as a thing of a kind *f* such that the membership in *f* entails some correct answer to the ‘what is it?’ question.

where *f* is the concept we define in determining what sort of thing an object is.

However, does Wiggins presuppose a relation between sortal concepts and predicates/properties in general, as supposed in hypothesis 4 above? And if so, how can we picture it out? Some explanations seem to be given only half way through Wiggins’ theory. In chapter 2 Wiggins asks: how can a predicate be a sortal concept? It is claimed that sortal concepts are equal to the concept of identity expressed by Leibniz’s Law so that:

$$(\forall x) (\forall y) ((x = y) \rightarrow (\phi x \leftrightarrow \phi y)) \text{ is equal to } (\forall x) (\forall y) ((x = y) \rightarrow (\phi x \leftrightarrow \phi y))$$

f

²⁰ See: *Sameness and Substance Renewed*, Wiggins 2001, p.53 ff. : ‘Absoluteness and Sortal Dependence Jointly Affirmed and Formalized’.

where ‘= / f’ is read as ‘... is the same f as ...’²¹. The only difference, inherited from Geach²², is that, whenever we attempt to answer the Aristotelian question ‘what is it?’, ‘= / f’ is logically prior to: ‘a is an f’; ‘b is an f’; ‘a = b’; it is then clear that: we single out an object, *a*, by defining what sort of thing it is. And only after doing so, we can establish if another object, *b*, is indeed identical with the former by means of its sort (such that the properties of *a* will coincide with the properties of *b*), as shown in:

$$((\exists f) (a = b)) \rightarrow ((\forall g) (g(a) \rightarrow (a = b)))$$

f g

So Wiggins claims that we locate the referent (or object) under a sortal concept, which determines a criterion of identity for the thing that satisfies it. But if the relation of two objects under a sortal concept (that which is expressed by =/f) is prior to the property an object may have, an immediate doubt arises: are then these concepts chosen *arbitrarily*?

For if it is so there would not be a great deal of support to oppose a Relativist’s analysis. In chapter 5 the answer is given: he admits that sortal concepts are related to our *interests*, but this does not imply arbitrariness after all, for a ‘moderate conceptualist’ “must insist that natural things and their concepts exist independently of whether our conceptions of them were destined to be fashioned”. What seems then arbitrary is only the schema we apply (which admittedly is one over a series of schema, and not the ultimate one)²³ so as to form some principles of individuation.

Two important points need to be noted:

- in chapter 2 it is said that in practice we do not start with: $\phi x \leftrightarrow \phi y$. We *reach* $\phi x \leftrightarrow \phi y$ from identity.
- while, explaining the D(iii) principle, it is said that D(iii) shows that ‘community of property’ is the *consequence* and not the *basis* for a criterion of identity. This indeed follows from Leibniz Law (in contrast with the Identity of Indiscernibles).

²¹ *Sameness and Substance Renewed*, Wiggins 2001, p.p. 24-28.

²² See: *Sameness and Substance Renewed*, Wiggins 2001, p. 51-53: ‘Conclusions Concerning R, The Relativity of Identity’.

²³ *Sameness and Substance Renewed*, Wiggins, ch. 5.

However, it seems that we are even further from answering the question ‘how can a predicate be a sortal concept?’ (PROBLEM 1). It might be the case that a different approach needs to be adopted (as we will see in Section III). For the moment, however, we turn to the second of our two problems.

PROBLEM 2 (*Is individuation satisfied by sortals?*). Still maintaining that the only possibility is that offered in hypothesis 4 (sortal concept are nothing but predicates themselves; so that predication offers identity and vice versa), we now consider Wiggins distinction of phase and substantial sortals.

In Chapter 3 Wiggins claims that among everything that can be a sortal predicate, natural kind words seem the most convincing; we can then imagine a kind, *k*, which is associated with a concept, *c*, expressed by a sortal predicate, *f*; so that for *x* to be something of that kind, is to exemplify the distinctive mode of activity/functioning that they determine. An example is to claim that ‘the boy who did such and such in 1948’ [a] is the same *f* as ‘the mayor of London in 1988’ [b]. Here the sortal concept, *f*, needs to be a natural kind sortal concept that has no phase restrictions (such as being a boy [a] and being an adult [b]), namely: a *substance concept* (being a human being). Now, phased sortals are intended to be non-overlapping and adjacent, “[...] so that if *f*’ restricts the same sortal as *f*” we have a transitive and symmetrical relation where the history of a thing can be divided into adjacent and non-overlapping phase-sortals”. But this clearly convinces that no such relation, as established in (4), can be brought up in favor of an identity of sortals and qualities. Indeed, even though the distinction between phased and substance sortals can be admitted, a further problem arises, as noted by Shoemaker²⁴: in the switch between *f*’ and *f*” (which are non overlapping), how can we establish that *x* doesn’t cease to exist? We necessarily need to refer to a further sortal, say *g*; but then on what basis can we say that it is *f*” and not *g*-phase to continue *x*’s existence?

This can be represented as:

$$\begin{array}{l} > //-----f' - phase -----//-----f'' - phase -----// > \quad | \quad x's \\ > //-----g - phase -----// > \quad | \quad existence \end{array}$$

²⁴ Wiggins on Identity, S. Shoemaker, 1970.

In many respects and particularly in relation to the question: *how can I know that a substantial sortal is reached?*, it seems that *arbitrariness* is still required. And even though such arbitrariness can be translated as *interest*, as Wiggins seems to claim (see above), yet we are left with the serious problem of how we can conceive sortal concepts from *unfamiliar* or quite unknown situations²⁵. Indeed, Wiggins convinces that it is through agreement that we can be committed to common answers. But in the latter case, the unfamiliar one, clearly *only* disagreement would be possible (for example in stating the development of new, complicate physics discoveries to which we are unfamiliar with). It follows that the question: *Is individuation satisfied by sortals?* has to be answered negatively: If I am not able to determine – necessarily – what substantial sortal *x* falls under, then how can I individuate *x* through a sortal analysis of it? Further more, it seems not only that predicates and sortal concepts can hardly share the same status, but a thesis that supposes their relation is far from being clear. This problem will now be taken with greater care in the following section.

III

Our aim here is to clarify how sortal terms ought to be taken. What will be argued in this section is that: sortal terms are *general proper names*; sortal concepts are *nominal predicates* (in a wide sense) which function by being predicative expressions of such names in all cases, *salva verita*²⁶. Basics and possible objections²⁷ for a sortal-neutral theory will follow.

“Along with phase sortals, that is, kind classifications which apply temporarily to things that they classify, there are contingent sortals, that is, kind classifications which happen to apply to things throughout their entire careers, but need not. By contrast with contingent sortals and phase sortals, there are “substance sortals”, which classify things by their essential features.” (*Human Being Revisited: My body is not an Animal*, Mark Johnston 2007, p. 51).

²⁵ I tend to assume that, if there is at least one unfamiliar situation, it may be the case that every situation is, in some respects, unfamiliar.

²⁶ For an objection and a possible answer related to this topic, see Section III, Question 2.

²⁷ See particularly pp. 31-32 below.

An immediate question related to the application of *natural kind* sortals to the criterion of individuation is the following: when I am implying that ‘a is the same *f* as b’, where a and b are person *x* at *t*₁ and *t*₂, should the sortal employed be necessarily the sortal *human being*? Could it not be, for example *black man*? One intuitive response might be that substantial sortals are the higher order sortals employable. Alas, this won’t work: we are here left with the following choice: *f* is *black man*; *f* is *human being*; *f* is *animal*. The latter is the highest order under which a and b may fall. What does the sort hierarchy have to say regarding this question? One common view is to remark the characteristic of *rigidity* in the substantial sortal: “a sortal is substantial if the entities always have that property (non-substantial if the sortal is non-rigid: some entities may lose the property in different times or situations)”²⁸ for individuals cannot change from being one substantial sort to another: it represents the stability of their identity over time. Under this description, however, none of the three possibilities appear to be a non-substantial sortal.

Furthermore, even if we define the *subsort relation* (\leq) between substantial sortals (so to obtain: *man* \leq *person* \leq *animal*)²⁹ we would not escape the following consequence: we might say that whether a higher or lower substantial sortal is employed is only a matter of *interest*, but this should imply that there are no much ontological consequences in such a choice. However, this seems not to be the case.

“As the 20th-century world recoiled from the horrors of Nazi Germany and the eugenics movement, we learned how economic, political and social circumstances produced the racial *differences* that science had once claimed to be *natural*.” (*Return of the Race Myth*, O. K. Obasogie, 2009).

If being a black man is a substantial sortal (I doubt it, but it seems to satisfy the requirements to be so) and is conceivably in a subsort relation with some higher substantial sortal (say that of being a human being), then possibly (not necessarily, of course), the failure of ‘black man’ to be recognised as a sortal, as the Human Genome Project determined in 2000 (all humans are more than 99 per cent alike: there is no genetic variations exclusive to any racial group), will determine a failure in its higher representative (being a human being).

²⁸ Ontological Knowledge Base Reasoning with Sort-Hierarchy and Rigidity, Ken Kaneiwa.

²⁹ Arguably ‘person’ is a substantial sortal. This, however, is not our issue here.

“Ontological categories must not be confused with natural kinds. Categorical structure is an a priori matter. By contrast, taxonomic relations between natural kinds are an a posteriori matter of natural law. [...] an empirical matter open to constant revision.” (*The Possibility of Metaphysics*, Lowe 1998, ch. 8, pp. 184-185).

Further more, we are still to face whether such a sortal ‘essentially represents’ the objects it supposedly falls under: as pointed out by P. Mackie, there are doubts regarding the validity of the sortal essentialist assumption that: “a sortal concept S is an essential sortal iff the things that falls under S could not have existed without falling under S ”³⁰.

Ethically, there is a thought experiment I would like to propose: Prague, 1939: Spillman is playing his masterpiece at a cafe in the city. Dr. Aribert Heim listens to his work and says: “This is a great pianist!”. Mauthausen concentration camp, 1941: Spillman is in a laboratory for Dr. Aribert Heim’s new experiment. He eventually says, not recognising Spillman: “This is a great guinea pig (or test subject)!”. Clearly enough, at $t1$ (1939) the phase sortal in use (being a pianist) can only be subsort related to the substantial ‘human being’; while the latter at $t2$ (1941) to any other substantial sortal, artifacts included! The consequence of it is that, not only failure of recognising a specific sortal can determine a failure of recognising the higher sortal to which the former is subsort related; but also, by being the requirements to fall under a substantial sortal maintained, Dr. Aribert Heim’s action should not be morally unworthy (as far as experimenting over an artifact is not). Or, at least he might be able to say that, by being sortal ignorant of the fact that Spillman at $t2$ is a human being, he is justified in experimenting over his person.

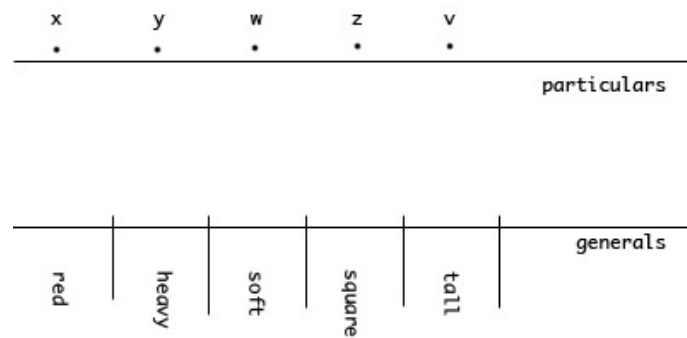
This thought scenario may seem unsound in many respects. What collides the most is probably the fact that we cannot accept Dr. Aribert Heim’s sortal ignorance in respect of the concept ‘human being’. Why can’t we? I assume there are not sufficient conditions for such an objection. For, as we have previously seen, the contingency of a conceptual analysis of individuation *has to include sortal ignorance* over the cases. The fact that ‘human being’ has to be nevertheless recognised, is not a conceptual thing. It is a *physical issue*: some properties belong to what we individuate as a human being, and we are inclined to accept this over every case (*salva verita*) in which such a collection of properties apply.

³⁰ Sortal Concepts and Essential Properties, P. Mackie, p. 313.

“Something is a member of a natural kind if and only if it has a real essence, an intrinsic property or set of properties that make it the kind of thing it is, irrespective of any system of classification we may find it convenient to adopt” (*Natural Kinds and Identity, an Horticultural Inquiry*, T.E. Wilkerson 1986, p. 63).

If this is so, then it is on *family* of properties what our concern ultimately relies³¹ and, to say it in very simple words, a new *ontological house* needs to be found for sortals. We shall try to accomplish both tasks here. I claim that both hypothesis 1 and 3 (see Section II above) should be adopted, offering the sortals a new semantic role (TASK 1); we will then see whether in these terms, a criterion of individuation is possible without any reference to sortal terms (TASK 2).

TASK 1: We can trace two parallel lines, where the first one belongs to particular entities, the second to general ones:



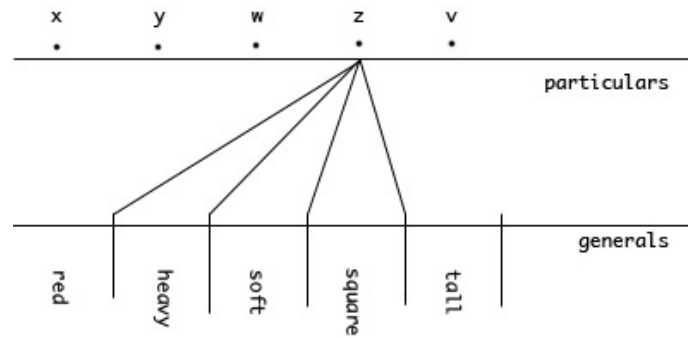
graph 1

When properties are *directly* instantiated, the way to express it is by means of *attributive* predicate, such as ‘z is square’. We also imagine that the object z may have more properties, say that of being ‘heavy’ and ‘soft’. So we obtain: ‘z is square & z is heavy & z is soft’. In predicate logic, this would be equal to:

$$\exists z ((Sz \ \& \ Hz) \ \& \ Oz)$$

and can be represented as:

³¹ Kripke claims that: “What we really associate with the name is a family of descriptions”. *Naming and Necessity*, Kripke 1970, p. 31.

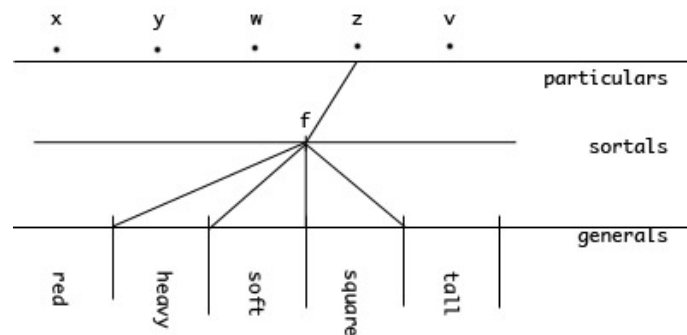


graph 2

Contingently, it might be the case that only a certain *type* of thing is at the same time square and heavy and soft. It is then possible to define these general terms as belonging to the same *family* of properties which we will name under a *general proper name*: i.e. under the same sortal. Within a specific community of speakers, the sortal f will always identify a certain family of properties [(Sx & Hx)&Oz]. This shows why, outside such a community, speakers might be possibly ignorant of the sortal, f ; but, of course, not necessarily ignorant.

Whenever a sortal is in use, such a family is expressed by means of *nominal* predicates, such as ‘z is an f’. What is represented by the *general proper name* is not *every* property belonging to the object, but only those which are *essential* to it in a specific context. Without further specifications, we could then conclude that the condition required in hypothesis (2) above would be satisfied: when x and y are of the same sort, f, we can determine (from f) that they both participate of the property, ϕ . The result of which, however, was wrong, unless a definition can be given of kinds (or sorts) as the representation of sets of properties (so that, from the sortal f, I am able to extract specific properties that – as members of a set – will necessarily belong to f). This would also determine then, that for an object to fall under a sortal f is for that object to necessarily have all those properties represented by it (and consequently contingency in sortal application would be avoided). It is not so, however, the reason being that our selection of such essential properties is a purely subjective one (I recognise certain properties in the clay that are related to my interest as an artist, but only some of them, and possibly none, are relevant for an architect). Science supposedly proposes an objective representation of such families.

When nominal predicates are in use, we have the following *unary structuring* scenario:



graph 3

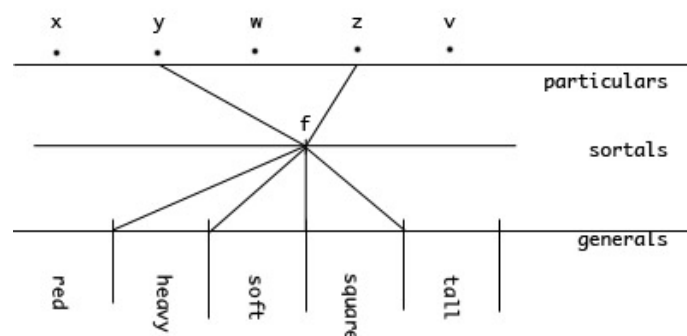
Intuitively, in this way it is true that sortals satisfy a criterion of individuation. But such a criterion *cannot* be reliable for absoluteness of identity for we have no necessary conditions under which f should be preferable over g where f and g are sortals representing two different families of essential properties of the same object z . In other words: it is not a primitive aspect whether a falls under a sortal f or not.

If Wiggins were right in assuming that:

$$(\forall x)(\forall y)((z = y) \rightarrow (\phi_z \leftrightarrow \phi_y))$$

f

then we would obtain:



graph 4

But we also understand that this would hold just in case the family of properties represented by the sortal f has been previously established by the community of speakers, so that both z and y fall under f . Otherwise individuation not only will not be absolute, but most probably impossible. For example: the switch in the case of whales between their

being fish at t_1 and mammals at t_2 would have had, if sortal individuation was based on absolute identity, the following consequence: there would have been a time (between t_1 and t_2) where no whale was identical with itself. We know that this cannot be the case, simply because none of its essential properties was changed: i.e. the nature was able to give its characteristics well beyond our conceptual interpretation of it.

Now, according to Strawson (1959), a sortal predicate (like apple) "supplies a principle for distinguishing and counting individual particulars which it collects"³². While Guarino says: "A predicate will be a sortal predicate if it is both countable and temporally stable; in our proposal, unary structuring predicates (i.e. concepts) must all be sortals"³³. Both definitions seem to be compatible with our picture: sortal predicates offer such a principle for distinguishing and counting; it is also true that they unary structure - attributive - predicates (see graphs above). *All that needs to be added is simply that this must be taken contingently, and not necessarily*. This, I assume, removes any possibility for sortals to be taken rigidly: what gives them the claimed rigidity is only the pre-establishment of the family of properties represented by the sortal. Then, we may also agree with Lowe, that sortals are "properties of persons"³⁴. This brings to two conclusions:

- in relation to Brody's second task, a sortal theory of individuation concerns only with interpretation 1 (selection is a mere presupposition of what *we* 'produce', as entities that do individuate, for such a selection to be possible).

- in order to establish interpretation 2, rigidity must be found elsewhere: i.e. in the properties themselves or, in other words, under a *more direct connection* between particular and general entities.

Such an 'accuse', however, needs to be justified both in relation to the nature of proper names (I) and to that of generality (II), if we are to assume sortals as *general proper names*.

(I) In Searle's *Proper Names*: "it seems as if the rules for a proper name must somehow be logically tied to particular characteristics of the object in such a way that a name

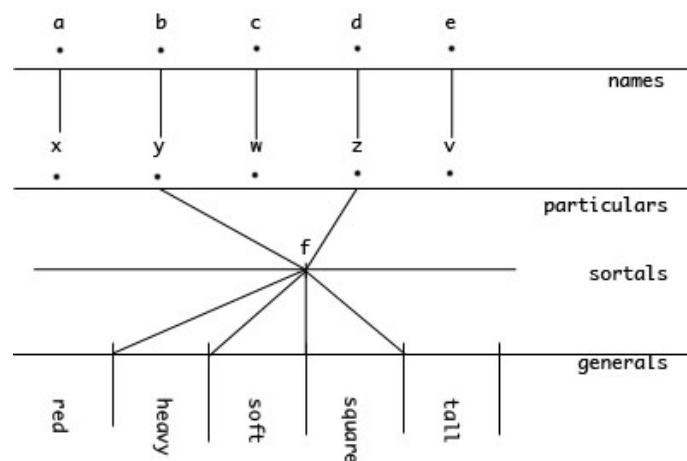
³² *Individuals*, Strawson, 1959.

³³ Formal ontology, conceptual analysis and knowledge representation, N. Guarino 1995, In *Human-Computer Studies* 43, pp. 625-640.

³⁴ See page 8 above.

has a sense as well as a reference [...] proper names do have sense necessarily but a reference only contingently. They begin to look more and more like shorthand and perhaps vague descriptions; [this is possible if we are able to] present the description in place of a proper name”³⁵. So far it seems that the only limit in relation to our view is in “tied to *particular* characteristics of the object”; but this is not an issue because such a statement applies to *classic* proper names, like ‘Aristotle’, which are, indeed, referring expressions for particulars. Our aim, instead, is that of showing how a *general proper name* can tie families of general properties to particulars. Searle further claims that: “the meaning of the name would change every time there was any change at all in the object, that the name would have different meaning for different people”. So he concludes: “suppose we ask what are the necessary and sufficient conditions for applying a particular name to a particular object, [it seems to be that] the object must be identical with an object originally christened by this name [...]”³⁶. The same seems to apply to sortals as we have defined them.

(II) In relation to the characteristic of *generality*, all we have to say is that: while a *classic* proper name directly individuates the entity in question or, as noted by Kaplan: proper names are *directly referential expressions*; so we can represent it as:



graph 5

A *general proper name* (*f*) does not directly individuate the entity in question. ‘a’ (‘b’, ‘c’...) is used *in order to* directly individuate a *unique* entity; on the contrary, a sortal *f*

³⁵ *Proper Names*, J. R. Searle 1958, p.p. 168-169.

³⁶ *Proper Names*, J. R. Searle 1958, p.p. 169-170.

simply aims to group the ‘previously established’ family of properties, so that it can be further applied to *numerically* distinct entities (many trees) and contingently - at science’s will - to *qualitative* distinct entities: I may use the sortal f to determine a family of properties completely different, or at least not perfectly overlapping, the one assumed by another person. This, again, is a consequence of the impossibility to ‘extract’ (or derive) specific properties that - as members of a set f - will necessarily belong to f ³⁷.

TASK 2: We previously said that, the fact that the notion of ‘human being’ has to be nevertheless recognised, is not a conceptual thing, it is a physical issue: some properties belong to what we individuate as a human being, and we are inclined to accept this over every case in which such a collection of properties apply. We now ought to define under which conditions this is possible, so to include a criterion of individuation in a theory of change that can avoid any reference to individuation by means of sortal analysis.

In defining identity, we are generally brought to face the problem whether the statement produced can only be necessary or by any chance contingent. In contrast with Wiggins’ *Identity Statements*, Kripke proposes a new theory for the evaluation of the impossibility of contingent statements of identity produced by *rigid designators*. Therefore, in:

$$(1) \quad a = b$$

if a and b are rigid designators³⁸ then statement (1) will be necessary, if true, in every possible world where a and b exist. It is generally assumed that this seems to be possible not only for names, but also for natural kind terms as representatives of rigid designators. I shall argue, instead, that what is intended, with this, is that only the compresence of all the *essential properties* of an object can *rigidly designate* such an object (recall ‘the distinction between an object’s essence and an object’s essential properties’, Section I above). And in what follows, if natural kind terms will be proved to be different from sor-

³⁷ Which is our argument against hypothesis 2, Section II above.

³⁸ Which means they are names, and not in use for description but in use to refer to a specific object; and they are terms that designate the same object in every possible world, which doesn’t imply that they necessarily exist in all possible worlds.

tals, they will still have a chance of being directly referential expressions, but yet within a certain descriptive function³⁹.

To show how this works, we can start with what is argued by N. Salmon in his *Are General Terms Rigid Designators*: he claims that “We must be careful to distinguish sharply between general terms [...] and its corresponding predicate”. He then distinguishes between: “is { }”, and “is-a { }”. These operators designate the functions that assign to any universal its metaphysical extension in that world at that time. The extension of a property P is (in a possible world *w* at time *t*) the class of possible objects that have P (in *w* at *t*). Now if we say, for example, that ‘x is blue’, the noun ‘blue’ *rigidly designates* a universal, while the predicate ‘is blue’ *does not* rigidly designate its extension. It does not require a great departure to see how this applies to our analysis of sortals: while what stands in the ‘general line’ of our previous graphs (above) rigidly designates each property, the same cannot be said of what stands in the ‘sortal line’.

This shows that, if a theory of rigid designators can be applied to properties, then we ought not to implement any further possibility of conceptual analysis in terms of identification; at least for the fact that it seems not to be metaphysically required. Indeed, rigid designators would be capable of giving the sufficient objective status to whatever may concern properties and relations.

Under this light, how can we possibly determine whether something is a rigid designator? I propose the following example: in 1869 Dmitri Mendeleev discovered that there were four gaps in the periodic table. Such a discovery *was not* originated by a lack in some elements themselves, in that case: scandium, gallium, technetium, germanium (it took other 63 years to discover them); but through the properties that should have characterised them, in this specific case: the positrons revealed by the electron’s antimatter in the cosmic rays. What can be defined, in this story, as a rigid designator? If we are confident with Salmon’s specification, then we agree that the general terms representing each property of the elements are rigid designators. The same cannot be said, however, for the

³⁹ At this stage, some confusions may arise concerning whether semantics can possibly be the key to unveil our sortal-neutral account. For an understanding of this matter, please refer to *Question 3*, below.

sortal under which they fall: namely that of being ‘elements’, as well as that of being ‘technetium’, ‘gallium’, etc... Whether I use the former or the latter, or none, as a sortal concept, this is, again, simply a contingent fact, an empirical matter open to constant revision. However, we ought to notice, that while the former cannot be said to *directly refer* to a specific entity (suppose to claim that there are ‘elements’ in a specific portion of space: this would be, at most, a great deal for a follower of Democritus) the latter indeed maintains a form of referential role (offered by its – scientifically proven – specification).

So, by following Kripke’s account of rigid designators, we might say that what was proved in 1932 was not an ‘element’ as such, or that such a thing falls under a specific sortal, but the possibility that a certain property exists, and that such a property could be dubbed under the name ‘technetium’: i.e. in every possible world where such a property exists, it is equal to what we define as ‘technetium’. While I assume that this is partly true, there is much more to say regarding an analysis over possible worlds: it is more coherent to argue, with D. Macbeth, that: “natural kind terms are not rigid, and predications of them [even in] context of scientific inquiry, are epistemically rigid”⁴⁰. This is because natural kind terms *are* indeed descriptive, even if supposedly directly referential. When we agree that natural kind terms can form necessary identity statements, it is always the case that we add the condition ‘if true’ “within brackets”⁴¹. The ‘if true’ condition relies on our assumption that scientific analysis is able to give us the closest valid condition under which a family of properties is essentially as such.

However, we can still suppose that – at least some – natural kind terms are rigid designators, as recently proposed by C. Besson⁴², where it is attempted to overcome the limit in Kripke’s theory by not being able to express the semantic difference between general natural kind terms and descriptive general terms⁴³. One major point claimed is that natural kind terms cannot be taken to rigidly refer to their extension “[...] since their extension

⁴⁰ Names, Natural Kind Terms and Rigid Designators, D. Macbeth 1995, p. 260

⁴¹ “Certain statements - and the identity statement is a paradigm of such a statement on my view - if true at all, must be necessarily true”. *Naming and Necessity*, Kripke 1972, p. 109.

⁴² Natural Kind Terms and Rigidity: A Metasemantic Approach, C. Besson, 2007

⁴³ An example of the former is given as ‘water’, while of the latter is ‘transparent liquid of which lakes are composed and which falls as rain’

may be different in different possible worlds, the name would not come out as rigid”⁴⁴. So, while rigidity can be applied to proper names, the same doesn’t apply to natural kind terms; unless we introduce the distinction between *de jure* and *de facto* rigidity⁴⁵: the former designator designates the same thing in all possible worlds as a matter of stipulation; the latter without any stipulation. Natural kind terms are introduced at dubbing (act of baptism): they are *de jure* rigid and non-descriptive. While descriptive general terms are not introduced at dubbing: i.e. rigidity is not achieved as in the case of natural kind terms⁴⁶. Doing so, we obtain that natural kind terms can be indeed taken as directly referential as well as for proper names, but only at the price of being *obstinately rigid* (recall note 45). I will briefly argue that natural kind terms, as they should be interpreted, have nothing to share with conceptualism, for if they were, then they would lose their character of rigidity.

One question represents the problem: ‘Can we *refer* to objects without knowing what *sort* of things those objects are?’ The answer, I insist, is yes. If I am walking in some exotic environment and face a new existent, I might not be able to say what sort of entity it is, but I am sure I can define some of its properties; I can even draw a portrait of it, if interested and skilled enough; and most importantly, I can define where such an entity is located relative to myself: my knowledge of the object’s location is the ultimate proof that I am able to refer to it. Let’s now suppose that, because of my disinterest in biology, I didn’t even realise that what is in front of me is something I am not, by any means, able to define under any possible natural kind term. Yet, this doesn’t exclude the possibility that I can still *refer* to it. And it may be up to my memory or classificatory capacity whether, the day after, I can recognise if change has occurred to it. Ignorant but yet very rich in intuitions and tools, I have with me the sufficient instruments that can identify its mitochondrial DNA. This is a specific character, a property, and I decide to baptize this mysterious entity under the - not very original - name ‘A’. Now, clearly enough, no other entity will ever match its haplotype, or DNA signature: this means that necessarily $A = x$

⁴⁴ Natural Kind Terms and Rigidity: A Metasemantic Approach, C. Besson, 2007, p. 2.

⁴⁵ The real definition adopted is that of being ‘obstinately rigid’, where an obstinately rigid designator is a designator that designates the same object in all possible world regardless of whether that object exists at a given world. *Ibid* p. 5.

⁴⁶ Natural Kind Terms and Rigidity: A Metasemantic Approach, C. Besson, 2007, p. 12.

haplotype. I know that I will always be able to refer to that entity, even though no sortal individuation has ever occurred⁴⁷. It seems also clear that ‘A’ as well as the property of having such and such haplotype are rigid designators. It may then happen that another, numerically distinct entity resembles A’s mitochondrial DNA quite closely, and by matter of simplicity we decide to call it ‘E’ and classify it within the æ’s natural kind class, which from now on includes whatever has such and such mitochondrial DNA, haplotype excluded. But then it seems quite clear that what we are to obtain is not individuation of a unique entity, but merely similarity over two, numerically distinct, entities, by means of description. This reinforces our previous claim that natural kind terms are descriptive, even if supposedly directly referential. However, such terms are by no means conceptual derivations. This latter case has shown that a specific biological coordinate has already defined its members. Here, no interests and no *personal* knowledge of the observer has been considered; and secondly, but more importantly, the grouping of them was ‘extra’ information supplied over the the previously made reference of the entity.

To summarise: it is true that sortals do have a fundamental role in answering the question ‘what is it?’ the price being that such an answer is taken as contingently true and strictly related only to *how we decide to see the world*⁴⁸. Metaphysics, however, aims for the necessity of things, and therefore, for a method of reference based on necessary conditions under which a criterion can be established. What I have argued, so far, is that our way of looking and individuating objects is directly referred to properties belonging to each object. Such properties are united by means of compresence in a object and this is what suffices in determining its unique existence; when then it is further recognised that such compresence holds within numerically distinct entities, a family of properties *can* be established. However, it is not necessarily the case that such a family will represent all the

⁴⁷ A common objection against cases where DNA is assumed to be the correct representative for the role of ‘essential property of an entity’, is that of ‘amebas’, i.e. organisms which are able to double themselves while preserving the same DNA signature. This is however beyond our analysis as it is developed here: ‘individuation is taken between two qualitatively different *but numerically identical* objects’ (p.2); whether such a requirement can be purported, is simply a matter of our ‘capacity’ of respecting the rules of *continuity* represented by any valid spatio-temporal account. It may be the case that we are eventually required to include *relational properties* (in contrast with the more common *non-relational properties*) of an object; for all that matters is that *numerical distinction* and *similarity* are prior to any further analysis in relation to the object in question.

⁴⁸ A more important point to be addressed is that it is hard to imagine how we could express all we do indeed express in our everyday life, without appealing to sortal terms.

essential properties to which an object is made of, and it may be the case that none of them is essentially as such: it is the task of science to determine the ‘closest possibility’. This is the same as rejecting that there is always at least a sortal *f* under which *x* and *y* fall, as expressed by Wiggins in relation to the D-principle:

$$x = y \text{ iff } (\exists f) (x = y) \text{ } ^{49}$$

For example, when it has been discovered that not all living organisms are ‘eukaryotes’ (depending on whether a nucleus is present or not in their cells) this might have required the formulation of a new sortal. It should be clear now that we can object the principle above as it was only an empirical matter, that *a* and *b* were the same sort of living organism, and *a fortiori*, if *f* is ‘being an eukaryote’, then it is purely contingent whether there is at least one *f*. On the contrary, it is not a contingent fact that some living organisms have the property (are constituted by) cells with nucleus, while others have not such a property.

It follows that, in determining the necessary conditions under which an object can be singled out, it is through its essential properties, and not through the family representing them, that such individuation is possible. This goes in tune with Newstead’s argument where, in defining the Sortalist argument under the following general conditions:

- (1) Singular reference to an object requires knowing which object it is.
- (2) Knowing which object something is requires knowing what sortal concept it falls under.
- (3) Therefore, one cannot refer to any object without knowing what sortal concept it falls under ⁵⁰.

it is argued - and we can agree - that condition (2) is false.

I shall now advance some general objections which would commonly create a possible difficulty for what has been so far proposed. This should show what views, already established by others, would be of any support for our account. It is not our aim, however, to

⁴⁹ *Sameness and Substance Renewed*, Wiggins, p. 53.

⁵⁰ Singling out Objects without Sortals, Anne Newstead, p. 2.

defend such views; and for this reason, what follows shall only be taken briefly, and as a mere appendix, so to sharpen the basis of what has been so far established for any further enquiry.

Question 1: *What are the reasons to believe that only essential properties are representative of an object?*

Question 2: *Does the semantic distinction between nominal and attributive predicates completely exemplify the distinction between properties inherited in the object and general proper names (sortals)?*

Question 3: *Why is an analysis of rigid designators considered so fundamental in defining such a sortal-neutral account?*

Question 4: *Can it be the case that a sortal theory is instituted simply as an exemplification of our way of talking?*⁵¹.

The first question is a commonly agreed objection against the opponents of the sortal theory: to say that things are not falling under specific sortals requires an account of how certain, and not all properties, may join together in order to constitute an individual. A convincing solution to the problem is taken under consideration by M. Ayers in his *Is Physical Object a Sortal Concept?* where it is claimed that each individual is the *product of similar causes* which also guarantee the integrity of their career. Therefore, we can stipulate a causal matrix from which the object is constructed under a *bottom-up* system of classification, in opposition to the *top-down* ‘holistic’ model proposed by the most recent sortalism⁵².

The second question regards the problem whether a semantic analysis, as has been proposed, can effectively offer the logical grounds required in the distinction between *attributive* and *nominal* predicates. An interesting objection that would put our assumption (as it has been specified all through Section III⁵³) under attack, is offered by the very common cases of attributive predicates derivable from *general proper names* (sortals), for

⁵¹ Questions 2 and 4 have been proposed by students of the University of London, during the Metaphysics and Language meetings, Summer 2009. Question 3 has been pointed out by Ian Rumfitt.

⁵² *Is Physical Object a Sortal Concept? A Reply to Xu*, M. Ayers, p. 4.

⁵³ See in particular the distinction as represented between Graph 2 and Graph 3, above.

example statements such as: ‘all dogs are canines’. What would be generally assumed is that these cases offer a counterexample to the proposed distinction. However, attributive predicates that are derivable from general proper names, are not representative of specific properties as such, these terms being a mere simplification of the category an object *conceptually* belongs to: i.e. they do not represent any specific property inherited in the object; they are attributive only so far as they are nominal representatives of family of properties.

In order to answer Question 3: we recall Bealer’s assumption that:

$$\sim \Box (\forall y) (\exists i \text{ that rigidly single out } y)$$

This claim should clearly represent the necessity of a rigidity requirement in any sortal analysis of an object. We have previously established that sortal concepts are not inherited in the object itself (PROBLEM 1, page 9 above). We have also said that “the formation of the sortal concept is at least psychologically dependent” (Ayers, page 2 above), and that they are (always ?) expressed by sortal terms (Lowe, page 8 above). If so, then, I assume that no other way can be imagined in order to define the necessary relations between an object and the sortal it falls under, unless we adopt Kripke’s account of rigidity.

Finally and very briefly, to answer our fourth question: it is not the case that a sortal theory is instituted simply as an exemplification of our way of talking, simply because: “the claim, common to all sortalists, [is] that individual identity and persistence *depend* on the individual’s sortal”⁵⁴, as we have already seen in Problem 1, Section 2 and in relation to Wiggins’ proof of the *absoluteness* of identity.

“After much thought Snowball declared that the Seven Commandments could in effect be reduced to a single maxim, namely: ‘Four legs good, two legs bad’. This, he said, contained the essential principle of Animalism. Whoever had thoroughly grasped it would be safe from human influences” (*Animal Farm*, G. Orwell, 1945).

⁵⁴ Individuals and Their Concepts, S. Block et al, p.5.

BIBLIOGRAPHY & REFERENCES

- Adams, R. M. Primitive Thisness and Primitive Identity, *The Journal of Philosophy*, vol.76, n.1. 1979.
- Armstrong, D.M. *On Universals, an opinionated introduction*, Westview Press, 1989.
- Armstrong, D.M. *Universals and Scientific Realism*, Cambridge University Press, 1978.
- Ayers, M. Individuals without sortals, *Canadian Journal of Philosophy*, vol. IV, n.1, 1974.
- Ayers, M. Is Physical Object a Sortal Concept? A Reply to Xu, *Mind and Language*, vol. 12, n.3-4 1997, pp. 393-405.
- Bacon, J. Universals and property instances, *Erkenntnis*, vol.49, n.1, 1998.
- Balaguer M., Platonism in Metaphysics, *Stanford Encyclopedia*, 2009.
- Barcan Marcus, Modalities and Intensional Language, *Boston Studies in the Philosophy of Science*, vol.1, pp. 77-116, 1963.
- Bealer, G. Universals, *The Journal of Philosophy*, vol.90, n.1. 1993.
- Bennett, D. Do we need identity, *The Journal of Philosophy*, vol.66, n.15. 1969.
- Bannett, D. Essential Properties, *The Journal of Philosophy*, vol.66, n.15. 1969.
- Besson, C. Natural Kind Terms and Rigidity, 2007.
<http://www.bristol.ac.uk/metaphysics/science/naicpapers/besson.pdf>
- Bird, A. & Tobin, E. Natural kinds, *Stanford Encyclopedia*, 2008
- Block, S. et al, Individuals and Their Concepts, in 'Categorization inside and outside the lab', W-k Ahn et al, p.5.
- Bostock, D. Kripke on Identity and Necessity, *Philosophical Quarterly*, vol.27, n.109, 1977
- Brody, A. Natural kinds and real essences, *The Journal of Philosophy*, vol.64, n.14. 1967.
- Church, A. On Carnap analysis of statements of assertion and belief, *Analysis*, vol.10, n.5, 1950.
- Copi, I. Essence and Accidents, *The Journal of Philosophy*, vol.51, n.23. 1954.
- Evans, Can there be vague objects, *Analysis*, vol.38, 1978.
- Fredman, F. Sortal Predicates, (lost reference).
- Gallois A., Identity over time, *Stanford Encyclopedia*, 2005.
- Grandy, R.E. Sortals, *Stanford Encyclopedia*, 2007.
- Guarino, N. Formal ontology, conceptual analysis and knowledge representation, in *Human-Computer Studies* 43, 1995.
- Hirsch, E. *The concept of Identity*, Oxford University Press, 1982.
- Keller, P. How to tell Universals from Particulars, University of Geneva, Switzerland 2003.
<http://www.philosophie.ch/preprints/21%20How%20To%20Tell%20Universals%20From%20Particulars.pdf>
- Kripke, S. Identity and Necessity, in *Identity and Individuation*, M.K. Munitz, New York University Press, pp. 135-164, 1971.
- Kripke, S. *Naming and Necessity*, Oxford Blackwell, 1972.
- Johnston, M. Human Being Revisited: My body is not an Animal, in *Oxford Studies in Metaphysics* vol.3 pp. 33-74, 2007
- Laporte, J. Rigid Designators, *Stanford Encyclopedia*, 2006.
- Lewis, D. Is there a problem about persistence? (lost reference).
- Lowe, E.J. *The four category ontology*, Oxford University Press 2006.

- Lowe, E.J. *The possibility of Metaphysics*, Oxford University Press, 2001.
- Lowe, E.J. Sortals and the Individuation of Objects, *Mind and Language*, vol.22, n.5, 2007.
- Macbeth, D. Names, Natural Kind Terms and Rigid Designators, *Philosophical Studies* vol.79, n.3, 1995.
- Mackie, P. Sortal Concepts and Essential Properties, *The Philosophical Quarterly*, vol. 44, n.176, pp. 311-333.
- Makie, J.L. De what re is de re modality, *The Journal of Philosophy*, vol.81, n.16, 1974.
- May, R. Comments on Nathan Salmon's 'Are general terms rigid?', *Princeton Semantics Workshop*, 2003.
- Mellor, D.H. Natural kinds, *The British Journal for the Philosophy of Science*, vol.28, n.4, pp: 299-312, 1977.
- Miller, A. Realism, *Stanford Encyclopedia*, 2005.
- Moore, G.E. Are the characteristics of particular things particular or universal?, *Proceedings of the Aristotelian Society*, supp. vol. III, 1923.
- Newman, A. The bundle theory for simple Particulars, 2006.
- Newstead, A. Singling out objects without sortals, <http://web.maths.unsw.edu.au/~jim/ICCSPaper.pdf>
- Nooran H., Identity, *Stanford Encyclopedia*, 2006.
- O'Leary-Hawthorne, J. The Bundle Theory of substance and the Identity of Indiscernibles, *Analysis* vol.55, n.3, pp:191-196, 1995.
- Orwell, G. *Animal Farm*, Penguin Books, 1945.
- Parfitt, D. Personal Identity, *Philosophical Review* vol.80 pp. 3–27, 1971, and reprinted in Perry 1975.
- Perry, J. The same F, in *Identity, Personal Identity, and the Self*, Hackett, 2002, xiv
- Peterson, P.L. Revealing designators and acquaintance with Universals, *Nous*, vol.20, n.3, pp: 291-311, 1986.
- Pitt, D. Realist Bundle Theory, <http://www.calstatela.edu/faculty/dpitt/Realist%20Bundle%20Theory2.pdf>
- Quine, W.V. *From a logical point of view*, Essays 1, 4, Harvard University Press. 2nd edition, 1980.
- Ramsey, On Universals, in *Philosophical Papers*, edited D.H. Mellor, Cambridge University Press, 1990.
- Robertson T., *Essential vs Accidental properties*, *Stanford Encyclopedia*, 2008.
- Russell, B. *The problems of Philosophy*, 1912. In Oxford University Press paperback, 1959. Reprinted, 1971-2.
- Russell, B. The Principle of Individuation, *Human Knowledge*, 1948, reprinted Routledge London 1997, pp.310-325.
- Salmon, N. Are General Terms Rigid?, *Linguistics and Philosophy*, vol.28, n.1, 2005.
- Shoemaker, S. Wiggins on Identity, *Philosophical Review* 10/1970.
- Strawson, P.F. *Individuals*, Methuen, 1959.
- Wiggins, D. *Identity and SpatioTemporal Continuity*, Basil Blackwell, 1967.
- Wiggins, D. Identity Statements, (lost reference).
- Wiggins, D. On being in the same place at the same time, *Philosophical Review*, vol.77, n.1, pp: 90-95, 1968.
- Wiggins, D. *Sameness & Substances Renewed*, Cambridge University Press, 2001.
- Wilkerson, T.E. Natural Kinds and Identity, an Horticultural Inquiry, *Philosophical Studies* 49, 1986.
- Wittgenstein, L. *Tractatus Logico-Philosophicus* (in particular 2.01231; 2.0251; 3.144), 1921, reprinted in Routledge Classics, 2001.