

## GENERAL TERMS AND RIGIDITY: ANOTHER SOLUTION TO THE TRIVIALIZATION PROBLEM\*

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**Abstract:** In this paper I am concerned with the problem of applying the notion of rigidity to general terms. In *Naming and Necessity*, Kripke has clearly suggested that we should include some general terms among the rigid ones, namely, those common nouns semantically correlated with natural substances, species and *phenomena*, in general, natural kinds -‘water’, ‘tiger’, ‘heat’- and some adjectives -‘red’, ‘hot’, ‘loud’. However, the notion of rigidity has been defined for singular terms; after all, the notion that Kripke has provided us with is the notion of a rigid designator. But general terms do not designate single individuals: rather, they apply to many of them. In sum, the original concept of rigidity cannot be straightforwardly applied to general terms: it has to be somehow redefined in order to make it cover them. As is known, two main positions have been put forward to accomplish that task: the identity of designation conception, according to which a rigid general term is one that designates the same property or kind in all possible worlds, and the essentialist conception, which conceives of a rigid general term as an essentialist one, namely, a term that expresses an essential property of an object. My purpose in the present paper is to defend a particular version of the identity of designation conception: on the proposed approach, a rigid general term will be one that *expresses* the same property in all possible worlds and *names* the property it expresses. In my opinion, the position can be established on the basis of an inference to the best explanation of our intuitive interpretation and evaluation, relative to counterfactual circumstances, of statements containing different kinds of general terms, which is strictly analogous

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to our intuitive interpretation and evaluation, relative to such circumstances, of statements containing different kinds of singular ones. I will argue that it is possible to offer a new solution to the trivialization problem that is thought to threaten all versions of the identity of designation conception of rigidity. Finally, I will also sketch a solution to the so-called ‘over-generalization and under-generalization problems’, both closely related to the above-mentioned one.

**Key-words:** General terms – rigidity – identity of designation conception – trivialization problem – over-generalization and under-generalization problems

## INTRODUCTION

In this paper I am concerned with the problem of applying the notion of rigidity to general terms. In *Naming and Necessity*, Kripke has clearly suggested that we should include some general terms among the rigid ones, namely, those common nouns semantically correlated with natural substances, species and *phenomena*, in general, natural kinds -‘water’, ‘tiger’, ‘heat’- and some adjectives -‘red’, ‘hot’, ‘loud’. However, the notion of rigidity has been defined for singular terms; after all, the notion that Kripke has provided us with is the notion of a rigid *designator*. But general terms do not designate single individuals: rather, they *apply to* many of them. The different individuals that a certain general term applies to are usually identified in terms of a property had by them –which need not involve any particular ontological commitment regarding the nature of properties. A general term can be thus said to bear two kinds of semantic relations to reality: on the one hand, it *applies* to the individuals that are in its extension (if any); on the other hand, it *expresses* a certain property that the individuals in question can be taken to have in common.<sup>1</sup>

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<sup>1</sup> It is worth pointing to the fact that this holds for both count nouns, such as ‘tiger’, and mass terms, of the likes of ‘water’; in the last case, the individuals in the extension are samples of a certain substance.

In sum, as far as general terms are concerned, rigidity cannot be defined in terms of the identity, across possible worlds, of *the individual designated*. In other words, the original concept of rigidity cannot be straightforwardly applied to general terms: it has to be somehow redefined in order to make it cover them.

As is known, two main positions have been put forward to accomplish that task: *the identity of designation conception*, according to which a rigid general term is one that *designates* not the same individual but *the same property or kind in all possible worlds* (Linsky 1984, LaPorte 2000 and 2006, Martí 2004, Salmon 2005, López de Sa 2007 and 2008, among others); and *the essentialist conception*, which conceives of a rigid general term as an essentialist one, namely, a term that *expresses an essential property of an object or applies to an object in all the worlds in which it exists* (Devitt & Sterelny 1999, Devitt 2005, Gómez Torrente 2004 and 2006). Finally, some philosophers have adopted what might be called a ‘nihilistic stance’, according to which the rigid/non-rigid distinction is just a distinction among singular terms, which cannot be extended to general ones (Soames 2002, Schwartz 2002).

My purpose in the present paper is to defend a particular version of the identity of designation conception: on the proposed approach, a rigid general term will be one that *expresses the same property in all possible worlds* and *names* the property it expresses. In my opinion, the position can be established on the basis of an inference to the best explanation of our intuitive interpretation and evaluation, relative to counterfactual circumstances, of statements containing different kinds of general terms, which is strictly analogous to our intuitive interpretation and evaluation,

relative to such circumstances, of statements containing different kinds of singular ones. From the suggested perspective, rigid and non-rigid general terms bear different kinds of relations to different kinds of properties; in other words, they differ from each other in their expressive mechanisms. I will argue that, by taking those relations into account, it is possible to offer a new solution to the trivialization problem that is thought to threaten all versions of the identity of designation conception of rigidity. The project has the philosophical significance of attempting to provide a justification for the Kripkean claim according to which rigidity is a property that can be applied not only to a distinguished set of singular terms but also to a significant set of general ones, which thus seem to semantically behave more similarly to each other than one would have thought.

A very important clarification point should be made from the outset: I take general terms to be essentially and primarily *predicative*; accordingly, they should not be confused with their respective nominalizations or canonical designators, which result, for instance, either from substituting the adjective for an abstract substantive or by using the words ‘the property of...’. The difference at stake can be exemplified by means of the following pairs of statements:

- (1) This apple is *red* (predicative use of the simple general term ‘red’)
- (2) *Redness/the property of being red* is a colour property (nominalization of the simple general term ‘red’)

and

(3) This apple is *Peter's favourite colour* (predicative use of the complex general term 'Peter's favourite colour')

(4) *Peter's favourite colour/the property of being of whatever colour happens to be preferred by Peter* is my favourite one (nominalization of the complex general term 'Peter's favourite colour')

It is worth pointing out that, whereas in (4) 'Peter's favourite colour' is a definite description, this is not the case with (3): (3) exemplifies, by analogy with (1), a predicative use of a general term –more precisely, of what can be taken to be, from my perspective, a descriptive general term.<sup>2</sup> On the basis of the proposed analogy between simple and complex general terms, and the idea that general terms are primarily and essentially predicative terms and can only have nominal uses by a process of nominalization, I will be assuming that there are some complex general terms, which, though having the logical form of definite descriptions, function predicatively.<sup>3</sup>

The paper has the following structure. In the first section, I present an argument for a version of the identity of designation conception, which is grounded on an intuitive analogy between general terms and singular ones. The second section contains the proposed solution to the trivialization problem. In the third section, I sketch a solution to the so-called 'over-generalization and

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<sup>2</sup> Notice that it is not possible to interpret the occurrence of the 'is' in (3) as standing for identity.

<sup>3</sup> Even if the predicative and the nominal forms may be in those cases formally or morphologically identical (in English), they are obviously syntactically different. From a semantic point of view, they can also be taken to make the same contribution to truth-conditions, namely, a certain kind of property.

under-generalization problems’, both closely related to the above-mentioned one.

## I. AN ARGUMENT FOR THE RIGIDITY OF SIMPLE KINDS TERMS

The rigid/non-rigid distinction is usually ascribed the theoretical task of accounting for certain closely interrelated *phenomena* concerning the use of singular terms, among which the difference in our intuitive interpretation and evaluation of statements containing names and descriptions with respect to counterfactual circumstances plays a prominent role. By ‘intuitive interpretation and evaluation’ I mean the competent speaker’s judgments about the content of statements belonging in the language in which she is competent, as much as her intuitive assignments of truth-values to such statements. In terms of an example, on the one hand, we intuitively take

(5) Aristotle wrote many philosophy books

to be a statement about *Aristotle*, even with respect to a counterfactual world in which Aristotle died at the age of 4 and someone else taught Alexander the Great and wrote many philosophy books, and we intuitively evaluate it as *false* with respect to that world. On the other hand, we intuitively think that

(6) The teacher of Alexander the Great wrote many philosophy books

is a statement about *whoever happened to teach Alexander the Great*, and we intuitively accept that it should be evaluated as *true* with respect to the counterfactual world described above, in which

Aristotle died at 4, if there is an alternative person satisfying the description in the world at stake who in fact did write many philosophy books.<sup>4</sup> In my view, this intuitive difference can be taken to be the premise of an inference to the best explanation whose conclusion is the semantic distinction between *de iure* rigid and non-rigid designators, according to which, as is also known from Kripke's work, names fall on the rigid side whereas descriptions fall on the non-rigid one. As is known, names are taken to be *de iure* rigid, that is, rigid by virtue of their semantic nature, whereas there are very few descriptions that are merely *de facto* rigid, namely, rigid but not by virtue of their semantic nature: that is the case with essentialist descriptions, which pick out their objects by properties that the objects necessarily satisfy uniquely, and descriptions containing the 'actual' rigidifying operator, namely, not usual ones like 'the teacher of Alexander the Great'.

Now, my present point is that there is an analogous difference in our intuitive interpretation and evaluation, with respect to counterfactual circumstances, of statements containing

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<sup>4</sup> Accordingly, we intuitively take the modal statement "It might have been the case that Aristotle did not teach Alexander the Great" to be a statement about *Aristotle* and evaluate it as *true*. In contrast, the modal statement containing a definite description instead of the name, "It might have been the case that the teacher of Alexander the Great did not teach Alexander the Great", can be intuitively taken to be a statement about *whoever might have taught Alexander the Great* -certainly, *somebody different from Aristotle*- and evaluated as *false*, since the person in question could not help having the property of having taught Alexander the Great. In sum, the latter, in contrast with the former, has a scope ambiguity and hence a possible false reading: it is false on the narrow-scope interpretation of the description, whereas it is true on its wide-scope one. It is then the first construal that makes for a clear contrast between descriptions and names.

different kinds of general terms. As an instance, on the one hand, we intuitively take

(7) Those apples are red

to be a statement about *red* apples, even with respect to a counterfactual world in which, due to a special atmospheric *phenomenon*, things have stopped looking red to us, and we intuitively evaluate it as *false* with respect to that world; on the other hand, we intuitively think that

(8) Those apples are Peter's favourite colour

is a statement about apples of *whatever colour happened to be preferred by Peter* at the world of the utterance and we intuitively accept that it should be evaluated as *true* with respect to the counterfactual world described above, if there is a colour that Peter prefers in the world at stake and the apples pointed to by the speaker of (8) are in fact that colour.<sup>5</sup> To put it in other words, in

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<sup>5</sup> Accordingly, it should be noticed that the modal statement "It might have been the case that red apples were not apples of Peter's favourite colour" is intuitively interpreted as a statement about *red* apples and evaluated as *true*, on the basis of the possible existence of worlds where red, contrarily to what happens in the actual world, is not the colour preferred by Peter. In contrast, the modal statement containing the descriptive general term 'Peter's favourite color' instead of 'red', "It might have been the case that apples of Peter's favourite colour were not apples of Peter's favourite colour" can be intuitively interpreted as a statement about apples of *whatever colour might have happened to be preferred by Peter - a colour such as green, namely, not the one that he actually prefers-*, and, inasmuch as those apples could not help being of whatever colour might have happened to be preferred by Peter, the statement will be considered *false*. Once again, we may think that, in contrast with the



the case of (7), we intuitively think that it ascribes a certain property to certain apples, namely, *being red*, relative to both the described counterfactual circumstances and the actual world. In contrast, in the case of (8), we intuitively think that, relative to the above-mentioned counterfactual circumstances, it may serve to ascribe, for instance, the property of *being green* to certain apples, whereas relative to the actual world, where Peter prefers red to any other colour, it serves to ascribe them the property of *being red*.

Therefore, *through an inference to the best explanation, it is possible to establish the claim that there is a corresponding semantic distinction concerning general terms, according to which there are certain general terms that are related just to the same properties of things both in the actual world and in counterfactual circumstances, whereas there are others that are not. Inasmuch as the former allow us to track the same property in all possible worlds, they can be considered to be de iure rigid, that is, rigid by virtue of their semantic nature, whereas the latter, allowing us to pick out a different property in each possible world, can be taken to be de iure non-rigid.*

In sum, the difference in the intuitive interpretation and evaluation, relative to counterfactual circumstances, of statements containing different kinds of singular and general terms is hereby taken to be both:

(i) *the premise of an inference to the best explanation* whose conclusion is the *de iure rigid/non-rigid* distinction,

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former, the latter provides us with an example of scope ambiguity: on the one hand, it has a false reading corresponding to the narrow-scope interpretation of the descriptive general term; on the other, it also has a true one based on the wide-scope interpretation of the term in question.

and

(ii) *an intuitive test* for semantically classifying certain expressions ('Aristotle', 'red') as rigid and certain others ('the teacher of Alexander the Great', 'Peter's favourite colour', in predicative use, as exemplified above) as non-rigid.

It is clear, thus, that the rigid/non-rigid distinction is a *semantic* one: it is a property that certain expressions have by virtue of the kind of contribution they make to the truth-conditions of statements containing them.

Moreover, as must be remembered, the difference at stake has been exploited in Kripke's modal argument against description theories of meaning for names. To put it in a nutshell, ordinary names are *de iure* rigid designators, whereas ordinary definite descriptions are non-rigid ones; consequently, it makes no sense to try to explain, as intended by description theories, the meaning of names in terms of associated descriptions. It is thus clear that, according to Kripke, singular terms are classified as *de iure* rigid or non-rigid, at least partly, on the basis of their non-descriptive or descriptive character respectively. Likewise, the difference revealed by the above-mentioned intuitions concerning general terms may be regarded as grounded on the absence or presence of a descriptive component in the expressions respectively involved. In other words, following Kripke, general terms can also be classified as *de iure* rigid or non-rigid, at least partly, on the basis of their non-descriptive or descriptive character respectively. It is worth emphasizing that although non-descriptiveness is thus taken to be the main *source* of (*de iure*) rigidity it is not constitutive of the *definition* of (*de iure*) rigidity –which is given, by analogy with names, in terms of the *sameness, in all possible worlds, of the property*

*expressed by the term, i.e., its aptitude for tracking the same property in all worlds.* So, my argument can be considered to be the output of a strict application of Kripke's modal argument to general terms.

A clarification point is in order. In saying that, according to Kripke, non-descriptiveness is the main source of rigidity, I am restricting the claim to ordinary names and simple natural kind terms. I do not intend to deny that Kripke has clearly acknowledged that there are other sources of rigidity for singular terms, such as the presence of a rigidifying operator as in 'the *actual* president of the USA', the existence of essentialist descriptions as in 'the product of the union of ovule X and spermatozoid Y' (namely, the above mentioned '*de facto* rigid designators') or descriptions taking wide scope over modal operators. But those are sources of rigidity *for descriptions, not for names*: in their case, the source of rigidity is their non-descriptive character. Likewise, there might be thought to be other sources of rigidity for general terms, such as the presence of a rigidifying operator as in 'Peter's *actual* favourite colour', the existence of essentialist descriptive general terms such as 'sample of the substance with atomic number 79' (namely, what might be called '*de facto* rigid general terms') or descriptive general terms taking wide scope over modal operators. But those are sources of rigidity *for descriptive general terms, not for the usual simple natural kind ones*: in their case, the source of rigidity is their non-descriptive character.

To summarize the present section, our intuitions concerning our interpretation and evaluation of statements containing general terms with respect to counterfactual circumstances can be taken to ground a *de iure* classification of such terms into rigid and non-rigid ones -analogous to the famous classification concerning

singular terms. Moreover, the classification in question can be regarded as mainly grounded, as proposed by Kripke as far as singular terms were concerned, on their respective non-descriptive and descriptive semantic character. According to this, whereas among singular terms we can distinguish the *de iure rigid names* from the *de iure non-rigid (ordinary) descriptions*, among general ones we might distinguish the *de iure rigid simple natural kind terms* from the *de iure non-rigid descriptive terms*. It is then the strong intuitive analogy that I want to emphasize that exists between singular and general terms that made me start focusing on descriptive general terms –as the first kind of non-rigid general terms that I would like to encompass; later on, other kinds of general terms, such as artificial kind and social role terms, will be analysed and showed to be non-rigid as well.

## II. THE TRIVIALIZATION PROBLEM

The identity of designation approach is affected by the so-called ‘trivialization problem’: according to it, all general terms turn out to be rigid, which makes the notion of rigidity theoretically uninteresting. To put it in terms of the previous discussion, it is plausible to think that a descriptive general term such as ‘Peter’s favourite colour’ is as rigid as ‘red’, insofar as it can be taken to be semantically related not to different colour properties in each world but to the single property of *being of whatever colour happens to be preferred by Peter* in all of them (LaPorte 2006, Martí & Martínez 2010).<sup>6</sup> Now, inasmuch as the

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<sup>6</sup> Martí & Martínez (2010) have stated the trivialization problem in different terms: to them, the main point is that it is impossible to distinguish a rigid from a non-rigid interpretation of general terms in predicative use, since both readings yield the same truth-value for any

present proposal is a particular version of that general approach, it may appear to be threatened by this problem.

Some authors (LaPorte 2000, Schwartz 2002, Devitt 2005) think that the trivialization problem can only be solved by adopting a selective realism, namely, a metaphysical position that is committed to the existence of some properties, the sparse or natural ones (like *being red*), but not others, the abundant or non-natural ones (like *being of whatever colour happens to be preferred by Peter*).<sup>7</sup> This is clearly stated in the following fragment against LaPorte's version of the identity of designation conception –which is long but worth quoting because it presents the standard metaphysical solution in a very clear way:

This proposal avoids trivializing rigidity by claiming that some kind terms like 'beverage my uncle requests at Super Bowl parties' are not rigid. But what is the basis for this claim? Suppose that among the kinds there is not only the soda kind but also the different beverage-my-uncle-requests-at-Super-Bowl-parties kind (which happens to be coextensive with the soda kind in the actual world). For short, call this kind "BMURASP." Then, in the actual world, 'beverage my uncle requests at Super Bowl parties' would not designate the soda kind because the soda kind happens to satisfy a particular description. Rather it would designate the

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sentence involved. Take, for instance, 'The flowers in my garden are Peter's favourite colour', and suppose that the flowers are in fact red, which is Peter's favourite colour. If we evaluate that statement with respect to the actual world, it turns out true, on both readings. On the other hand, if we evaluate it with respect to an alternative possible world in which the flowers are also red but Peter's favourite colour is green, it turns out false on both readings. The conclusion seems to be that there are no reasons not to take all such terms to be rigid.

<sup>7</sup> The source of the classification of properties into sparse or natural and abundant or non-natural is Lewis (1983).

BMURASP kind. Indeed it would designate the BMURASP kind in all possible worlds: it would be rigid. So the semantic issue of whether this term is rigid comes down to the issue of whether the BMURASP kind exists and is distinct from the soda kind. A totally “unselective realist” about “universals” –roughly, a universal for every predicate– will think that there is indeed a distinct BMURASP kind with the result that the term is rigid after all. LaPorte’s claim that the term is not rigid requires a “selective realism” that rules out the existence of the distinct BMURASP kind. So the choice between these claims comes down to a controversial metaphysical issue in the theory of universals. LaPorte’s proposal seems to leave the rigidity issue with no substance beyond this metaphysical issue. (Devitt 2005, p. 141)

Am I committed to that kind of solution? In what follows, I will try to show that the particular version of the identity of designation conception that I want to defend can give a different answer to the trivialization problem, namely, *one that does not rest on a selective realism about sparse properties*.<sup>8</sup> The solution hereby proposed is two-fold: it involves making a *semantic distinction* between mechanisms of designation applied to general terms, and a correlative (rather uncontroversial) *metaphysical distinction* between basic and non-basic or functional properties.

The semantic distinction at stake is based on a distinction made by Perry concerning singular terms (Perry 2001).<sup>9</sup> According to Perry, taking into account their respective *mechanisms of*

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<sup>8</sup> This is something that the present proposal has in common with Martí’s, which does not involve a selective metaphysical commitment to sparse properties either. See Martí (2004, pp. 135-140). In another article, LaPorte has also offered an alternative way out of the trivialization problem, though different from the one I will be defending in this paper. See LaPorte (2006, section II, pp. 324-328).

<sup>9</sup> He in turn credits Genoveva Martí with it; see footnote 10 on page 30.

*designation*, grammatically singular terms can be classified into two different groups: the *naming* expressions and the *denoting* ones. The former are the ones that are *directly* related to individuals, that is, names; the latter are only *indirectly* related to individuals, namely, *by means of their satisfying an identifying condition or possessing a connoted property*, which is the case with descriptions and indexicals (Perry 2001, pp. 30-31). Therefore, a name is in principle correlated with just *the individual being named*, whereas a definite description can be correlated with two kinds of entities by means of two kinds of relations: *the property being connoted* and *the individual being denoted*. Therefore, *designation* is taken to be a generic relation for singular terms: different kinds of singular terms hold more specific relations to different aspects of reality; in particular, *names name individuals*, whereas *definite descriptions* may both *connote properties* and *denote individuals*. Moreover, it is taken for granted that the former are rigid, whereas the latter are, aside from the special cases mentioned in the previous section, non-rigid.

Now, since *expression* can be taken to be the corresponding generic property in the case of predicates, on a parallel to the distinction between mechanisms of designation concerning singular terms, I would like to distinguish *mechanisms of expression* concerning general ones –in general, whereas singular terms *designate* individuals, general ones *express* properties. So, whereas following Perry, by taking into account their respective mechanisms of designation, singular terms can be classified into the naming and the denoting ones, general terms might be classified into two analogous groups, by taking into account (what I prefer to consider) their corresponding mechanisms of expression. On the one hand, what I would like to call ‘referential general terms’ are *naming expressions*: they directly *name* a property. On the other

hand, descriptive general terms are *denoting expressions*: they *denote* a property by means of *connoting* a different, more complex one. Likewise, on the one hand, referential general terms can be considered to be rigid; hence, a rigid general term is one that directly *names the property it expresses, the only one it is correlated with in all worlds*. In terms of our example, ‘red’ is correlated with the property of *being red* in all possible worlds, and can be thus said to directly name it. On the other hand, descriptive general terms, aside from the special cases above mentioned, can be taken to be non-rigid.

More specifically, I will call descriptive general terms *functional-descriptive* ones, inasmuch as I take them to involve the description of a certain function or functional property, the property *connoted* in all possible worlds, which may be realized by virtue of the existence of different basic properties at each world, the property *denoted* in each of them. I would then say that ‘Peter’s favourite colour’ *connotes* one and the same functional property, namely, *being of whatever colour happens to be preferred by Peter*, in all worlds, whereas it *may denote* a different colour property in each one, namely, the one playing the function of being significant in Peter’s aesthetic and emotional life in the world at stake -in the actual world, the property of *being red*. By analogy with a definite description, which can be correlated with two kinds of entities by means of two kinds of relations, a descriptive general term is thus correlated with two kinds of properties by means of two kinds of relations: *the functional property it connotes in all worlds* and *the different, basic properties it may denote in each one*.<sup>10</sup>

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<sup>10</sup> To offer another example, ‘sample of the liquid that fills the lakes and rivers’ *connotes* the functional property of *being a sample of the liquid that fills the lakes and rivers* in all worlds, but it *may denote* a different natural



An important point should be emphasized: the first feature does not make the term rigid, since having that kind of fixed meaning is compatible with having different *denotata* across the different possible worlds, and this is exactly what is thought to determine non-rigidity in the analogous case of definite descriptions. Definite descriptions also have a fixed meaning across worlds, which does not prevent them from the possibility of denoting different individuals in the different worlds, namely, from being non-rigid.

The proposal involves then a commitment to the well-known metaphysical distinction, put forward by functionalists in the philosophy of mind, between basic and functional properties, which, as is known, are linked to each other by the relation of *multiple realizability*. Regarding functional properties I could subscribe to what Schnieder has to say about what he mostly describes as relational ones:

[...] we may say that these properties possess a varying basis; with respect to different possible worlds there are different properties such that in virtue of possessing them, an object possesses the relational property. (Schnieder 2005, p.13)

This makes it sufficiently clear that functional properties are not properties of properties but properties of objects, with the peculiarity that they are properties that objects have in virtue of having other, more basic properties: to give an example, my car has the property of *being of whatever colour happens to be preferred*

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property in each of them, namely, the one performing the function of filling the lakes and rivers in the world in question –in the actual world, the property of *being a sample of water*. Incidentally, this serves to show that the distinction functional/basic is orthogonal to the distinction non-natural/natural, since a property can be *both functional and natural*.

by Peter because it has the property of *being red* -and not the other way around.<sup>11</sup> A very important point should be emphasized from the outset, though: the basic properties may vary not just from world to world but also from time to time, and, in general, from context to context. Therefore, it is possible to distinguish multiple realizability at different worlds, multiple realizability at different times, and multiple realizability 'here and now', depending on the context of utterance. To take our previous example, the property of *being of whatever colour happens to be preferred by Peter* is multiple realizable both at different worlds and at different times; by contrast, the property of *being Peggy's pet* is multiple realizable here and now: it can be realized by *being Uma*, Peggy's cat, or by *being Ulysses*, Peggy's dog.<sup>12 13</sup>

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<sup>11</sup> It is worth emphasizing that saying that 'red' designates rigidly what 'Peter's favourite colour' designates non-rigidly is, from my perspective, just a shorthand for saying what I would rather express in the following terms: 'red' *names* the same property that 'Peter's favourite colour' *denotes*, that is, *being red*. The claim does not imply that both terms are correlated with just one property: 'Peter's favourite colour' is also correlated, by means of the *connotation* relation, with another property, namely, the property of *being of whatever colour happens to be preferred by Peter*. Therefore, my position does not involve an identification of the properties of *being red* and *being of whatever colour happens to be preferred by Peter*. That may be the case with other versions of the identity of designation conception. See Schnieder's criticisms in his 2005, pp. 7-10. I agree with Schnieder on all his points, but I think that they do not apply to my version, which does not have the consequence that he criticizes.

<sup>12</sup> This is reasonable to expect, since the *denotatum* of a functional-descriptive term is no part of the expression contribution to the literal truth-conditions of the statements in which it occurs: it can be taken to constitute its pragmatic content, which is clearly contextually determined.

The new solution to the trivialization problem is thus pretty straightforward: ‘Peter’s favourite colour’ connotes the functional property of *being of whatever colour happens to be preferred by Peter* in all the worlds but cannot be considered to name it, because it

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<sup>13</sup> In her 2004 paper, Martí proposes a solution to the trivialization problem by making a similar distinction between the property *expressed* and the property *designated* by a general term. A difference between the present account and Martí’s is that she conceives of properties in terms of intensions of different levels; according to her, the property expressed by ‘Peter’s favourite colour’ would be a higher level function that assigns to each index a lower level function, the property designated, which in turn assigns to each index a set of things. It is not clear to me whether those abstract functions are considered to have metaphysical counterparts or not; in other terms, whether her proposal involves a metaphysical commitment to the existence of different kinds of properties, interrelated by means of multiple realizability, or not. I tend to think that that is not the case.

On the other hand, I would not say, as she does, that ‘Peter’s favourite colour’ can be used rigidly to designate the property of *being Peter’s favourite colour*: to me, ‘Peter’s favourite colour’ is a non-rigid general term and cannot be thus used to rigidly designate anything at all. It can only be used to both connote the property of *being Peter’s favourite colour* and denote a more basic colour property, such as *being red*, namely, it can only be used non-rigidly. *Mutatis mutandis*, for ‘the property of being Peter’s favourite colour’: from my perspective, it is one of the nominal forms of the descriptive general term ‘Peter’s favourite colour’ and as such it makes the same semantic contribution as the predicative form, through an analogous semantic mechanism, namely, it contributes the functional property it connotes in all worlds and denotes a different basic property in each world –on the assumption that Peter’s colour preferences vary across them (see the discussion on page 136 of her article).

may also denote a different colour property in each one, namely, the specific colour that happens to be preferred by Peter in the world at stake.<sup>14</sup> It is this second feature, rather than the alleged non-existence of the abundant property of *being of whatever colour happens to be preferred by Peter*, that makes it non-rigid. Therefore, the present proposal not only does not exclude but is perfectly compatible with an ontological commitment to the existence of abundant properties, such as the property of *being of whatever colour happens to be preferred by Peter*. In other words, even if also dependent on some metaphysical considerations, it does not involve a commitment to selective realism about sparse properties. Moreover, I think its metaphysical load is considerably lighter than the one carried by the standard solution, since, for one thing, the distinction between basic and functional properties is, as above emphasized, pretty uncontroversial, and, besides, it has been put in correspondence with an independently motivated semantic distinction between mechanisms of designation/expression, which allows for a more fine-grained account of the intuitive differences between the different kinds of general terms that were mentioned in the first section.

Notice that the fact that some general terms, namely, the descriptive ones, have turned out to be non-rigid involves having solved the trivialization problem, since it is sufficient to deny the claim that on the identity of designation approach *all* general terms are rigid. By showing that at least the descriptive general terms are

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<sup>14</sup> Notice that an analogous claim can be held regarding definite descriptions: ‘the teacher of Alexander the Great’ *connotes* the same set of properties, constituted by the property of *having taught Alexander* and the property of *being identical to any other individual who has that property*, in all possible worlds, whereas it *may denote* a different individual in each world.

non-rigid ones, the trivialization problem has been solved. This does not imply that there are not some other, closely related problems, the so-called ‘over-generalization’ and ‘under-generalization’ problems, which are still to be faced. I will turn to both of them in the next section.

### III. THE CONDITION OF EXTENSIONAL ADEQUACY

#### III. i. The over-generalization problem

It is important to notice that the identity of designation conception has another, clearly different problem, which has been called ‘the over-generalization problem’ (López de Sa 2008b). According to this, even if it is clear that the resulting notion of rigidity does not apply to all general terms (as explained so far, it does not apply to descriptive general terms), it seems to apply *not only* to natural kind ones but to other kinds as well. In other words, the proposal fails to meet a condition of extensional adequacy, namely, the requirement that, among general terms, *all and only the natural kind ones should come out rigid*. To offer some examples: how do general terms for artificial kinds and social roles, such as ‘paperweight’ and ‘bachelor’ respectively, fare on the present approach? Since they are *prima facie* similar to ‘red’ and ‘water’ in being grammatically simple, it is not at all clear why they should not turn out to be rigid too: they also seem to be related to just one and the same property, namely, *being a paperweight* and *being a bachelor* respectively, in all the worlds. Why not then say that they *name* the property in question, or, to use the previously introduced terminology, why not then consider them to be *referential general terms*? I am aware that this problem is left open after the trivialization problem is solved, and that this is in fact the case with the proposal developed in the previous

sections. Moreover, it may be thought that if this crucial problem were not properly addressed, no adequate answer to the nihilist, who thinks that the rigid/non-rigid distinction is not theoretically useful for general terms, could be provided. In this final section, I will try to sketch a solution to this new problem.

It is worth mentioning that there are some authors that do not find this problem crucial, though; namely, they do not think that the explanation of general term rigidity should comply with the condition of extensional adequacy (LaPorte 2000, Salmon 2005, López de Sa 2008a). I think, instead, that there are certain grounds for accepting the condition, or something close to it, that are related to certain fundamental differences between *paradigmatic simple natural* and *non-natural kind terms* respectively.<sup>15</sup>

My main point could be put as follows: *most simple non-natural kind terms are in fact semantically more similar to descriptive general terms than to simple natural kind ones*. On the one hand, as above mentioned and argued to be the main source of their rigid character, simple natural kind terms are applied to certain entities without having in mind the description of a set of individually necessary and jointly sufficient conditions of application, namely, their correct application is not completely governed by a descriptive content.<sup>16</sup> On the other hand, descriptive general terms are applied to certain entities by virtue of the satisfaction of certain

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<sup>15</sup> This is clearly compatible with acknowledging that the notion of natural kind is a vague one: there are cases, though not the paradigmatic ones, in which it is not clear whether the kind involved is natural or not (cf. 'petrol').

<sup>16</sup> As pointed out in the first section, semantic descriptiveness/non-descriptiveness can be considered to be the main source of non-rigidity/rigidity, respectively.

conditions, that is, their correct application is completely governed by a descriptive content. It can be thus said that there is a clear semantic difference between simple natural kind terms and descriptive general terms, namely, a difference related to the ways in which they are competently used. Now, simple artificial kind and social role terms, such as the previous ‘paperweight’ and ‘bachelor’, are *applied* to certain entities by having in mind a description of what those entities can serve for or what function they can fulfil; in other words, their correct application is always governed by their respective descriptive contents. More technically, their mechanism of reference borrowing is not causal but *purely descriptive*.

This in turn seems to be based on the fact that, whereas natural kind terms are thought to apply to objects or samples by virtue of their having an underlying nature that is independent of the epistemic and pragmatic capacities of most competent speakers and thus remains largely unknown to them, non-natural kind terms apply to objects or samples by virtue of their fulfilling a certain function that depends on the speakers’ capacities and interests, and is thus usually accessed by them. To put it in some more detail, the underlying natures of those entities to which the usual natural kind terms apply have identity conditions that are independent of human capacities, whereas the practical or social functions fulfilled by those entities to which artificial kind and social role terms apply can only be identified in relation to a human need or interest. This ontological difference grounds the above-mentioned epistemic difference, namely, the fact that in the case of natural kind terms competent speakers are mostly ignorant of or mistaken about the respective underlying natures, while for non-natural kind ones, the respective functions are in fact mostly

grasped by the members of the linguistic community.<sup>17</sup>

Moreover, simple natural kind terms differ from both descriptive general terms and non-natural kind ones in another respect: the former are introduced in the language by mere stipulation, whereas the latter are descriptively introduced.<sup>18</sup>

On the basis of the previous considerations, I think it is reasonable to expect that an account of general term rigidity should take the natural kind terms to be rigid and the non-natural ones to be non-rigid, namely, that it should meet the extensional adequacy requirement –or something close to it.

Accordingly, I will take artificial kind terms and social role ones, such as ‘paperweight’ and ‘bachelor’, to be (not referential but) *abbreviated functional-descriptive terms*, namely, each of them can be taken to connote a certain functional property: ‘paperweight’ seems to connote the property of *servicing to secure paper*, and ‘bachelor’, the one of *being an adult unmarried human male*. Now, those are, from my perspective, functional properties that may be realized, in different possible worlds, by a different set

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<sup>17</sup> This is perfectly compatible with acknowledging that natural substances can perform certain *natural* functions, such as *filling the lakes and rivers*, which are independent of human needs and interests. Consequently, it is not such the naturalness of the properties referred to by natural kind terms that enables us to refer to them directly: it is their basic character. That is why, from my perspective, the distinction between natural and non-natural properties is orthogonal to the distinction between basic and functional ones.

<sup>18</sup> Since the mechanisms of introduction of terms or reference fixing are related to foundational issues, the difference at stake is not a semantic but a meta-semantic one.



of basic ones. To start with an example of multiple realizability at different worlds, in the actual world, the property of *servicing to secure paper* is realized by different sets of basic properties, such as, for instance, the one constitutive of *being a marble stone* but it might have been realized by a completely different set, such as, for instance, the one constitutive of *being a (certain kind of) dog*: (certain kinds of) dogs might have been used as paperweights by merely possible cultures that are different from any actual one. Likewise, the property of *being an adult unmarried man* might have been realized by a set of basic properties that are different from the ones that actually realize it: for instance, it might have involved *being free from a marriage bond that is different from any existent one*; alternatively, it can be taken as an example of multiple realizability here and now, and thought to be realized in the actual world by different basic properties, such as *not having a girlfriend* (which might make straight-John a bachelor) and *not having a boyfriend* (which might make gay-George a bachelor). So, on the present approach, those different sets of basic properties are the possibly different *denotata* of the respective functional-descriptive general terms. Accordingly, those terms turn out to be non-rigid, since, although they connote one and the same functional property in all possible worlds, they may denote a different basic one or set of basic ones in each of them, namely, the one allowing for the realization of the corresponding function.

An interesting way of establishing the status of those terms is by checking whether it is possible to run an argument against their rigidity, analogous to the general one presented in the first section, namely, based on the intuitive interpretation and evaluation of statements containing them with respect to some counterfactual circumstances. Consider the following example:

(9) This is a marble stone

(10) This is a paperweight

In the first case, we intuitively take the statement to be about *a marble stone*, even with respect to a counterfactual world in which, due to a special natural catastrophe, marble stones have disappeared from the surface of the earth, and we intuitively evaluate it as *false* with respect to that world. In the second case, we intuitively take it to be a statement about whatever thing is a paperweight at the world of the utterance and we intuitively accept that it should be evaluated as *true* with respect to a counterfactual world as the above, in which marble stones have disappeared and dogs are regularly used as paperweights, and the thing pointed to by the speaker of (10) is in fact a dog. To put it in other words, in the case of (9), we intuitively think that it ascribes a certain property to a demonstrated object, namely, *being a marble stone*, relative to both the described counterfactual circumstances and the actual world. In contrast, in the case of (10), we intuitively think that, relative to the above-mentioned counterfactual circumstances, it ascribes the property of *being a dog*, whereas relative to the actual world, where marble stones but not dogs are regularly used as paperweights, it ascribes the property of *being a marble stone*.<sup>19</sup>

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<sup>19</sup> Likewise, the modal statement “It might have been the case that marble stones were not paperweights” is intuitively interpreted as a statement about *marble stones* and evaluated as *true*, on the basis of the possible existence of worlds where marble stones, contrarily to what happens in the actual world, are not used to secure paper. On the other hand, “It might have been the case that paperweights were not paperweights” can be intuitively interpreted as a statement about *whatever objects might have been used to secure paper*, namely, *objects such as dogs*, and, inasmuch as

Notice that still a different problem seems to be the one of establishing whether *terms for mental states*, such as ‘pain’ and ‘desire for French vanilla yogurt’, are natural kind terms or not. I realize that the point is significant, since, on the present approach, all of them, in as far as they are taken to be abbreviated functional-descriptive ones, turn out to be non-rigid. The following considerations may be put forward in favour of that position, though: first, a term such as ‘pain’ could be considered to be an abbreviation of the description of a certain role or function (having a disposition to behave in certain ways: taking a medicine, crying, staying in bed, going to the doctor, etc), which might be realized by different physical states; second, pains and mental states in general are epistemically accessible to normal competent speakers, they do not have an underlying, largely unknown nature as physical structures do; third, not all functional properties are non-natural ones, as shown by the previously given example of the functional property of *filling the lakes and rivers*.<sup>20</sup>

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those objects could not help being objects happened to be used to secure paper, the statement will be considered *false*.

<sup>20</sup> An interesting problem is the one posed by some complex expressions like ‘nuclear bomb’, since, on the one hand, they seem to be artificial kind terms but, on the other, competent speakers usually do not know anything about the internal structure of the functional property they can be taken to connote. As a tentative answer, I would say that the simple general term ‘bomb’ is certainly an artificial kind one, and as such it is governed by a descriptive content: being competent with it requires knowing that it applies to something made to explode, whatever internal structural it may have. Accordingly, *having been made to explode* may be the functional property the term connotes in all the worlds, while it may denote different physical internal structures in each one, which makes it clearly non-rigid. With regard to ‘nuclear’, I suspect it is a natural kind

### III.ii. The under-generalization problem

Finally, as should be clear, there is another way in which an explanation of general term rigidity can fail to meet the requirement of extensional adequacy, namely, by implying that *not all* the natural kind terms turn out to be rigid. This generates the so-called ‘under-generalization problem’. According to this, the approach I have been trying to defend could be blamed for the exclusion of some natural kind terms from the set of the rigid ones. To offer some examples, some natural kind terms such as ‘woman’ (adult human female), ‘vixen’ (female fox) and ‘tadpole’ (young frog), insofar as they have a descriptive content, could be classified as non-rigid.

Without intending to count on a definite solution to this problem, I will just make a general comment. It is not clear to me that those terms are semantically descriptive. The fact that they can be partly descriptively characterized does not make them descriptive; again, what has to be taken into account is the way we may think they are transmitted from one language user to another, namely, their corresponding mechanism of reference borrowing. The fact that most people associate with ‘water’ a correct descriptive characterization along the lines of ‘transparent liquid that fills the lakes and rivers’ does not make it descriptive; likewise, the fact that most people associate with ‘Aristotle’ a correct description along the lines of ‘the teacher of Alexander the Great’ does not make the name descriptive.

To take the ‘woman’ example, it must be said that the

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term, like ‘hydrogen’. Be that as it may, I tend to think that ‘nuclear bomb’ is non-rigid, by virtue of the non-rigidity of ‘bomb’.

underlying nature of a woman can be totally ignored by most competent speakers, who might only be capable of identifying women by virtue of some phenomenological properties that are neither individually necessary nor jointly sufficient for a token of the term to apply to a certain individual -so that they can misapply the term by letting themselves being deceived by some phenomenological properties, such as *wearing a dress* and *having a high-pitched voice*, which do not track the underlying nature of a woman. Therefore, I think that the mechanism of reference borrowing, namely, the necessary and sufficient conditions for the correct application of the term should be taken to be in this case causal-descriptive, namely, *not purely descriptive*: on the one hand, it is true that for a speaker to understand the word, she must associate a certain descriptive characterization with it, such as ‘adult human female’; however, on the other hand, she need not know what being a woman really amounts to, since she can be ignorant or mistaken about the underlying nature of a human female. To put it differently, I do not think that the application of the term is *completely* governed by its descriptive content. Moreover, the term must have been introduced by stipulation, as a way of naming ‘*that kind of individuals*’, and not by having the description of a specific function or role clearly in mind – accordingly, the mechanism of reference fixing must have been causal.

Something similar may be held for ‘vixen’ and ‘tadpole’: the descriptive material involved is part of what could be taken to be their respective common characterizations. They seem to be transmitted and correctly applied without the respective users having in mind any specific description of what a vixen or a tadpole is, since they can be ignorant or mistaken about the underlying natures of both foxes and frogs. Moreover, if we looked

at the way those words might have been introduced, we would only find stipulations –someone decided, either arbitrarily or for a practical or scientific reason, to count on a specific word standing for a female fox or a young frog, but not for a female dog or a young elephant.

Consequently, in as far as partly descriptive natural kind terms such as ‘woman’, ‘vixen’ and ‘tadpole’ cannot be explained in *purely* descriptive terms, they should be taken to be rigid, namely, to name the same basic property, *being a woman*, *being a vixen* and *being a tadpole*, respectively, in all possible worlds.<sup>21</sup>

To summarize the last section, on the one hand, I would say that most *artificial kind* and *social role terms* are *abbreviated functional-descriptive* ones, and insofar they are covered by a description theory. Accordingly, they turn out to be non-rigid: they connote the same functional property in all possible worlds but cannot be taken to name or refer to that property, since they may denote a different basic property in each world, the one allowing for the fulfilment of the corresponding function. If this is on the right track, the approach does not over-generalize the notion of general term rigidity. On the other hand, as far as the under-generalization problem is concerned, there seem to be *no cases of purely descriptive simple natural kind terms* –and the ones that are just partly descriptive seem to belong in the rigid group.

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<sup>21</sup> I think that something similar can be said concerning the partly descriptive general term ‘grandmother’, in the biological sense of the word: it is rigid, since it can be taken to refer to the same basic property, *being a grandmother*, in all the worlds. This basic property has a very complex underlying nature, involving the process of having conceived and given birth to a parent, which most competent speakers usually ignore in its details or are mistaken about.

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