

*IS IDENTITY A FUNCTIONAL PROPERTY?*¹

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Summary

I examine the following hypothesis : identity is a second order functional property which is multiple realisable in various domains of entities, on the model of functionalism in the philosophy of mind. If correct such a view would enable us to solve some of the long standing difficulties of the metaphysical concept of identity, in particular the fact that our judgements of identity seem to be relative to sortals and that some of the formal features which traditionally define identity do not seem to hold universally. But the functionalist theory of identity is hardly coherent, and encounters difficulties similar to those which are raised by the parallel view of about truth. I then propose to adapt a proposal by Douven and Decok who take identity judgements to be judgements of highly relevant similarity between things. This view seems to give us what a functionalist theory of identity needs. But it is an epistemological, not a metaphysical theory. It is hard to avoid the conclusion that the relation of identity has to be absolute, and cannot be reduced to any epistemological concept or to a functional property.

¹ This article was read at the Lauener Prize ceremony in honour of Ruth Marcus in 2008. I thank the Lauener Stiftung for this occasion to celebrate Ruth Marcus. David Wiggins and some participants convinced me that a previous approach (partially presented in Engel 2009) was hardly coherent. I am not sure that it is better, but thanks to Igor Douven and Lieven Decock's 2009 article I could attempt to formulate it. Thanks also to Igor for having shown the way (but I am not sure that he will like my conclusion). I would like to thank also Michael Frauchiger for his kindness and patience, of which I have abused. To Ruth I apologise for having been so long, and hope that this piece will be a small testimony of my long time friendship, admiration and gratitude.

1. Introduction

The very first work that I read by Ruth Marcus, in 1977, was her piece “Extensionality” (1960).² It awoke me from my Quinean dogmatic slumber. It explained that extensionality is not limited to the domain of extensional logic and showed how one could construct a range of notions of extensionality of various strengths, including for intensional contexts. It also seemed to me a remarkable example of how a philosopher and logician can *construct* a concept, instead of “deconstructing” it.³

In the same article Ruth Marcus examined also the notion of identity and explained that the principle of the identity of indiscernibles, that if two things which have all their properties in common they are identical

$$(Id\ ind) (\forall x) (\forall y) ((Fy \leftrightarrow F x) \rightarrow (x = y))$$

could also be weakened (to be distinct means to be *discernibly* distinct) . She also hints, at the end of her essay that when the statement “involves only proper names”, then replacement of the “Morning star” by “the evening star” in such statements as

It is necessary that the evening star is the morning star

² This article is not reproduced in *Modalities* (Marcus 1993)

³ I mentioned her views on identity in a polemical piece against the atmosphere of French philosophy in the seventies *in* Engel 1978. It needed a courage that I did not have at that time to say that the Emperor of Deconstruction had no clothes. Ruth's frontal opposition to what she aptly called "intellectual fraud" was an act of intellectual responsibility, and a model for us. I find deeply comforting that Derrida's philosophy was castigated by one of the greatest logicians of our time. To paraphrase Proust quoted by Bernard Williams, it's only fifty years later that one realises how much logicians have warded off great dangers.

yields no paradox such as Quine's famous paradox of the number of planets. It is clearly related to her theorem about the necessity of identity, which she established in her pioneering paper of 1946, and it anticipates the famous discussion of necessary identity statements with proper names in "Modalities and Modal languages" (1962)⁴.

Traditional debates about the nature of identity bear upon whether it can really be a formal property or relation of objects, since not all of the classical logical principles of identity seem to be formal at all. This has led philosophers to propose various non classical notions of identity and in particular to relativise the concept. But these attempts meet strong objections. I want here to examine another view, which, to my knowledge, has never been explicitly proposed, but which is in the same spirit as the relativisation idea, since it comes down to a contextual relativisation of identity. According to that putative view, identity is a functional property, multiply realised in various domains. This proposal is modelled along the lines of the functional conception of truth which has been defended by some writers recently. The parallel proposal of a functionalisation of truth would amount to construct identity as a kind of relative similarity. I try to show that it does not succeed and that we have to stick to the classical absolute concept.

2. Absolute identity

The difficulties of the classical definition of identity are discussed by Ruth Marcus in her essay "*Possibilia* and possible worlds" in the context of a discussion of the nature of *possibilia* (1986, 1993:189-213). Identity is

⁴ In her 1960 essay, Ruth Marcus quotes Fitch 1949, who had himself anticipated this notorious point, later, and notoriously taken up by Kripke later on.

taken to be a logical notion that one can characterise by the properties of reflexivity, symmetry, transitivity, indiscernibility, and substitutivity):

$$(R) (\forall x) (x = x)$$

$$(S) (\forall x) (\forall y) ((x = y) \rightarrow (y = x))$$

$$(T) (\forall x) (\forall y) (\forall z) (((x = y) \& (y = z)) \rightarrow (x = z))$$

$$(Ind Id) (\forall x) (\forall y) (x = y) \rightarrow (Fy \leftrightarrow Fx)$$

$$(Id ind) : (\forall x) (\forall y) ((Fy \leftrightarrow Fx)) \rightarrow (x = y)$$

It seems to be the best way to define objecthood, and a primitive notion:

« Identity is the strongest equivalence relation that a thing bears only to itself. That there are individuals is already presupposed if the identity relation is to hold. The identity relation does not *confer* thinghood; identity is an essential feature of things. Individuals must be there before they enter into any relations, even relations of self-identity. Of course if we want to *discover* which objects a language or theory takes to be individuals, we look to see which objects are such that they can meaningfully enter into the identity relation. Quantification is not so clear a guide to ontology as is identity. No identity without entity.” 1993 : 200)

The problem, however, as Marcus reminds us, is that the notion of identity is not so clear, and that its definition in terms of indiscernibility (*Id Ind* above) – things are identical when they have all their properties in common- encounters familiar problems: what does it mean to say that two things have all their properties in common? What kinds of properties are involved (qualitative or relational, including the relation of identity itself)? The identity of indiscernibles cannot be fully logical or formal, for

indiscernibility cannot define identity without further metaphysical assumptions.

There are indeed different criteria of the formal, but on many views, identity is not a logical constant⁵. Quine could not accept the necessity of identity as a formal property, except in the *de dicto* sense. But as Ruth Marcus remarks, for instance in her “A Backward look at Quine’s animadversions on modalities” (1988; 1993: 229) and in “Essentialism in modal logic” (1967; 1993: 50), the necessity of identity does not need other kinds of essential properties than self-identity, and is committed only to an innocuous kind of essentialism. So there *is* a good ground to accept the necessity of identity among the formal-logical properties of identity. The situation is less clear with the non vagueness of identity, which has been defended by Gareth Evans on the basis of a famous argument which is reminiscent of Marcus’s proof of the necessity of identity (Evans 1982)⁶. A lot of discussion has been devoted to whether identity *statements* can be vague or not, but it seems difficult to deny that the property of an object to be self- identical could be vague. So there is good ground for adding to the classical list of formal features of identity (reflexivity, transitivity, indiscernability, substitutivity) those of necessity and non vagueness. All

⁵ On Peacocke's criterion for logical constanthood (1976), identity does not come out as a logical constant.

⁶ (1) $\nabla (a=b)$ (where ‘ ∇ ’ is the operator ‘vaguely’)

(2) $\hat{y} [\nabla (y = a)]$

(3) $\sim \nabla (a = a)$

(4) $\sim \hat{y} [\nabla (y = a)] a.$

From Leibniz’s law of substitutivity one can derive from (2)and (4):

(5) $\sim (a=b)$

which contradicts the initial hypothesis that the identity statement ‘ $a=b$ ’ inderteminately true.

On Evans’ argument, see Williamson 1994: 253-56, and the references thereof. The proof given independently by Salmon 1977 is actually simpler. See also Salmon 2002. (1) Suppose a pair, $\langle x, y \rangle$, for which there is no fact of identity or distinctness. (2) By contrast, there is a fact of identity for the reflexive pair $\langle x, x \rangle$. (3) It follows $\langle x, y \rangle$ is distinct from . (4) Therefore, by standard set theory, $x \neq y$. (5) Consequently, there is a fact of the matter. See also Engel 1999, Parsons 2000.

these make identity and *absolute* relation, which holds of objects independently of what kind of objects enter in the relation. In other words absolute identity characterises identity as a formal property in the sense that it is supposed to apply to any kind of object, whether it be physical, biological, mental, natural, artefactual, etc.. Any two objects, if they are identical, are identical *simpliciter*, and not relative to a kind or sort.

In the same article (1993: 228) Ruth Marcus notices that for Aristotle, essential properties are sortal, in contrast to the property of *being an entity* and the property of *being self-identical*. It is precisely because they wanted to include sortal properties within the property of *being identical* that some philosophers have attempted to *relativise* identity itself to sortals. Geach (1972) claimed that the absolute concept of identity does not fit our usual way of asking identity questions. When we ask whether one object is identical to another, we never ask whether they are identical *simpliciter*, but we always ask questions of the form: “What kind of thing is x?” and we always reply, in the Aristotelian mode, that x is an F, or G, etc. When we ask whether x is identical to y, it is always relative to a sortal F,G, etc. This is, in a sense, how it should be, since the formal properties of identity (reflexivity, etc.) do not determine what kind of thing x and y are, or under what respect x and y are identical. In traditional terminology, what determines which kind of thing is x is what individuates x, and individuation is another matter than identity.

Actually more or less all the kinds of problems which are called “problems of identity”, those which give rise to famous paradoxes (material composition vs form, identity over time, Theseus ship, the problem of the many, etc.) are problems relating to individuation. Take for instance Geach’s case of the cat Tibbles as an illustration of what is called “the

problem of the many”.⁷ Tibbles is a cat. Let us suppose that he loses his tail, the resulting object being Tib. Tib differs from Tibbles. But Tibbles minus his tail coincides with Tib. And if Tibbles is a cat, Tib is a cat too. One can say that Tib differs from Tibbles as an individual but is identical to Tibbles as a cat. Aren't there two Tibbles? A variant has Tibbles losing his hair on the carpet: if Tibbles loses 1000 hairs, 1000 Tibbles are on the carpet.

According to Geach, most of these paradoxes show that the predicate of identity, if it is to make sense within ordinary contexts, has to be relativised. " $a = b$ " has always to be understood as

(R) a is the same F as b

where ' F ' is a sortal predicate. The problem, as David Wiggins has shown, is that relative identity (R) is incompatible with the principle of the identity of indiscernibles⁸. The dilemma is: either identity is absolute, but it can't really be a relation into which ordinary objects enter, or it is relative, but then it ceases to be a genuinely formal relation.

Geach's problem about relative identity and the issues raised by the paradoxes of identity show that there is a sharp contrast between what logic tells us about the identity relation – which is absolute, simple, and necessary – and our *identity judgments* – which are relative, context-sensitive and contingent. Geach is right that in many contexts we do not ask whether a thing is identical to another *simpliciter*. Very often we satisfy ourselves with vague or loose identity statements (“This is the same food as the one I had in another restaurant”) or ambiguous ones (for instance we are happy to accept certain type identity statements although we would

⁷ A paradox, which, as Wiggins 2001 p.173-76 notes, comes from Chrysippus. The phrase comes from Peter Unger, see his 1980

⁸ cf. Wiggins, *op.cit.*, ch.1, Engel 1989, *op.cit.*, p. 241.

reject their token counterparts : “This is the same ship as the one I took for Chios last year”), and we rarely care for what Thomas Reid called the “strict and philosophical sense” of identity (we almost never ask : “Is it *really* the same food as the one from the other restaurant ?”, or “ Is it the *very same* ship as the one you took for Chios last year?”). In such cases, identity is neither absolute nor transitive, and seems akin to a notion of similarity. Indeed there are cases where we are interested in the strict sense, as when an Egyptologist asks whether the statue that he inspects in an antiquarian shop is the same as the one stolen last month by looters from excavations near Alexandria. But can we content ourselves with the observation that there is a conflict between the loose and ordinary sense on the one hand and the strict and philosophical sense on the other?

Although the notion of identity itself is not *prima facie* epistemic, the notion of an identity *judgement* is largely epistemic, and for this reason it is person and context relative. What counts as identity for one person in one circumstance depends on her interests and on her epistemic situation. The difference between identity judgements from one context to another are obviously differences about the epistemic *criteria* by which we judge one thing to be identical to or to differ from another, or differences about our epistemic interests in asking identity questions. Identity questions, however, are not only epistemological questions: they are also, and quite often, questions about what things are and about their nature. Now, even if we understand these questions as ontological questions, the problem of the variety of identity questions still arises. When we ask whether the statue that we are looking at in a shop in the Plaka is the same as the one in the Acropolis museum, we wonder about a difference in *constitution*. When we ask whether Theseus’ ship at one time is the same as a ship of the same shape at another time, we wonder about a difference in material *composition*. These are principles about the individuation of entities in an

objective and not in a mind depend sense. But these questions about individuation differ from identity questions “strictly” speaking. But we cannot rest content with the thought that questions about identity are distinct from questions about individuation. We want to know how they are related. Does individuation depend on identity or *vice versa* ?

3. Wiggins’ *individuating essentialism*

In *Sameness and Substance* David Wiggins proposes a solution to this problem⁹. He holds that any entity has to conform to the formal principles of the absolute concept, which are norms for specific issues about individuation which occur in various contexts and relative to various purposes that we have of classifying objects into kinds. Without these principles, no judgement to the effect that x is identical to y can make sense. According to Wiggins, however, it does not follow from this that attributions of identity are independent of the implicit reference to *some* sortal or other. Although identity is absolute, “the sortal dependency of individuation” still holds. According to Wiggins’ « *individuating essentialism* » it has to be true both that:

- (1) Identity is absolute and defined by its formal properties (R, S, T, ind Id, Id ind)
2. A thing x is identical to another y if and only if there is a sortal concept F such that x and y fall under F
3. This concept provides the individuation of the entities in question and is a principle of *coincidence* and of *activity*, of *functioning an operation* (in other words it is a substance concept (Wiggins 2001 : 72-73))

⁹ Oxford, Blackwell, 1980. Revised edition *Sameness and Substance Renewed*, Oxford University Press., 2001. I quote from the revised edition.

According to individutive essentialism, individuation is relative to a common sortal concept which underlies any individuation, but this concept is left unspecified by the schema of the theory. It may be any sortal concept which is general enough to track the object. But this sortal concept does not vary from context to context, from one identity question to another. On the contrary the same sortal is presupposed by any individuation. It is the concept of what Wiggins calls a “continuant”.

Such a view seems equipped to give a solution to some of the paradoxes about identity, such as the problem of the many. Confronted with the Tib-Tibbles case, individutive essentialism will say that Tib and Tibbles are two distinct entities which coincide under the same sortal (*cat*). Wiggins rejects any view which would say that Tib and Tibbles are composed of distinct spatio-temporal parts. Their difference is based upon their constitution. Although identity is a stable property, there are variations in the conditions of persistence, which differ according to whether one deals with material objects, biological organisms, persons, artefacts or different kinds of entities. Each one of these has its own individutive kind, but continuants falling under these kinds have distinct persistence conditions. Constitution does not *define* identity, but identity supervenes on constitution. Identity is any relation which conforms to the formal principles (R), (S), (T), (id ind), (ind id), but for each kind of entity, there is a substantive account of the individuation of members of that kind, and conformity to the formal principles is a consequence of that account.

But can Wiggins’ individutive essentialism solve our problem? If persistence conditions vary with the kind of entity considered, and if identity supervenes on persistence conditions, how can we escape the conclusion that identity is nothing over and above the constitution of the kinds? Do the formal principles hold in the same way depending in all

domains? For instance if we accept that the constitutive principles for personal identity are based on a notion of psychological continuity of the Lockean or Parfitian kind, will identity be transitive¹⁰ ? Can't we accept that the principles of individuation of some entities, such as social groups like clubs or associations, can be vague (a club does not cease to exist if it loses one of its members, but a loss of ten members may be fatal, where does the limit fall?). Do the formal principles of identity hold in basic physics? A number of writers hold the view that in quantum physics the identity of indiscernibles fails as well as the principle of the non-vagueness of identity.¹¹ Similarly for biological entities¹². The individuation conditions of an organism depend upon persistence conditions which differ from those of physical objects, artefacts or persons. These conditions are those which guarantee the continued process of the life of the organism. But things are not so clear at the beginning of life: for instance the possibility of monozygotic twins suggests that a zygote is not a single and coherent life, but a system which has the potential capacity to form several lives. Hence in what sense are we confronted with a coherent whole or with a set of autonomous cells? The individuation conditions are not clear either at the end of the life of (human) organisms: medical practice has replaced cardio-pulmonary death with cerebral death. Should we then say that the irreversible loss of cerebral functions constitutes the death of the person or that of the organism? Another example of the complexity of identity questions for living beings is the nature of the "self" in immunology. According to Carosella and Pradeu (2006) the classical model in immunology which rests upon the distinction between the self and the non self presupposes that every element external to the organism provokes a

¹⁰ see Parfit 1984, Wiggins discusses these issues in chapter VII of Wiggins 2001

¹¹ See, within a large literature devoted to this topic, S. French & M. Redhead 1988 for the identity of indiscernibles, and Lowe 1994 for the principle of the absoluteness of identity and how far it stands in quantum physics.

¹² see in particular the interesting article by Boniolo and Carrara 2004

reaction designed to preserve its integrity. But immunitary reactions are not limited to exogenic factors (bacteria, parasites, fetuses are tolerated by the self). This is why, according to Carosella and Pradeu, the criterion of identity is continuity rather than identity. They show that any strong discontinuity within immune receptors and their targets gives rise to a reaction of the immune system, which does not discriminate between self and non self, but between endogenous or exogenous epitopes which are constantly present and others which break the continuity of interactions. This is why, according to them, biological identity is nothing but a kind of continuity:

"The continuity hypothesis conceives of identity as an identity-continuity, since it claims that nothing more than the spatiotemporal continuity of adhesions between immune receptors and ligands defines immune identity. This hypothesis can therefore be seen as the immunological point of view on the identity of organisms. According to the continuity hypothesis, nothing like a permanent 'core' to be preserved against all foreign threats is presupposed and thought to define immunity. Changes from the inside and changes from the outside equally can trigger an immune response, depending on the conditions of encounter." (Carosella and Pradeu 2006: 247)

Another problem raised by Wiggins' conception is that it seems to presuppose a form of Aristotelian essentialism in biology. He holds in particular that the sortals upon which continuants depend are natural kinds. A number of writers, however, starting with David Hull, have held that biological entities such as species can be considered as individuals and not as kinds. If this is correct one would need a different conception of the sortals upon which the continuants depend.

Most of the writers who criticize the use of the classical and absolute notion of identity suggest that we should dispense with these principles and replace them with principles for a weaker relation than identity, namely continuity, for which not all of the principles such as Identity of indiscernibles are valid. The view that identity principles can be in some sense reduced to the principles which hold for constitution (mostly distinct continuity principles for the various kinds of entities) raises, however, serious problems. The first one is that it resurrects the ghost of the thesis of the relativity of identity, and of a pluralistic view according to which there are as many types of identity relations as there are principles of individuation in each domain. Thus there would be physical identity, biological identity, personal identity, social identity, etc. Some writers, as Boniolo and Carrara 2004, simply accept this form of relativism. But then it is hard to see how it can escape the difficulties adduced for Geach's view. Or one has simply to bite the bullet, and reject the classical and absolute notion of identity.

The second difficulty of the pluralistic or anti-essentialist conception consists in its reduction of identity to continuity. As many discussions on the problem of personal identity have shown since Locke and Butler, identity is not the same thing as continuity.¹³

Our problem is this: how can we conciliate the Leibnizian absoluteness and of the sortal dependency of identity? On the one hand, on Wiggins's view, any relation which is a genuine relation of identity must conform to the Leibnizian schema

$$\text{Ind Id } (\forall x) (\forall y) (x = y) \rightarrow (Fy \leftrightarrow F x)$$

¹³ See the classical objection to Locke by Joseph Butler, *First Dissertation to the Analogy of Religion*, 1736, rep in J. Perry, ed. *Personal Identity*, Berkeley University Press, Berkeley and Los Angeles, 1977. For some of the reasons to stick to Butler's view, see Wiggins 2001, ch. VII

but for each kind of entity, there is a substantive account of the individuation conditions of that kind, and conformity to the schema is entailed by this account. The pressure, however, for this view, comes from the fact that the individuation conditions do not in all cases entail the Leibnizian principle. On the other hand, if we reduce identity to continuity, it is at the price of losing the formal nature of identity and its absoluteness. Someone could say at this stage: so much the worse for the formal character of identity and its absoluteness. But then how can we say that we have a theory of identity ?

I shall, at the end of the day, side with a conception of identity which comes close to Wiggins' and Marcus' absolutism. But in order to take the foregoing objections seriously and to try to keep in the spirit of Wiggins' conciliation, we may try to formulate another conception, which, like Wiggins' attempts at a conciliation of Leibnizian absoluteness with the variability of our identity judgements.

4. Functionalism about truth and identity

How can we reconcile the unity and the absoluteness of the identity relation with the plurality of the modes of constitution and of the conditions of persistence of objects of different kinds? A possible solution takes its inspiration from the familiar functionalist conception of mental states in the philosophy of mind. According to functionalism, the mental properties of an organism are defined by the causal role of the properties of this organism. In most contemporary versions of the view functional properties are second-order properties: they are role-properties of first-order (physical and biological) properties of organisms. These roles are “multiply realised”

in these first order properties of the organisms, and supervene upon them, without being identical to these properties.

This familiar functionalist picture can be extended to other kinds of properties of a more formal or abstract sort. In particular a number of writers have proposed that *truth* could be conceived as a functional property defined at the abstract level as satisfying a set of “platitudes”, and realised in various domains ¹⁴ Just as, according to functionalism about mental states, our use of “belief”, “desire” and other mental terms, can be individuated in terms of the role that they play , together with other states, in mediating between inputs and outputs, we could say that the predicate “true” is a place mark for a certain role marked by a set of platitudes which Crispin Wright (2001: 760) lists thus :

- *transparency* : to assert (believe) that *p* is to present *p* as true
- *epistemic opacity* : some truths may not be known or be unknowable
- *embedding*: truth aptness is preserved under various syntactic operations
- *correspondence*: for a proposition to be true is to correspond to reality
- *contrast*: a proposition may be true without being justified and vice versa
- *stability*: if a proposition is ever true, then it is always true
- *absoluteness*: truth is absolute, there are no degrees of truth

Just as one can, for the property of pain functionalise this property by conjoining all the properties characteristic of its functional role by forming the corresponding familiar device of "ramsification"¹⁵, we can functionalise truth :

¹⁴ Pettit 1996, Wright 2002, Lynch 2005, Lynch 2009. I have myself suggested the view in Engel 2002

¹⁵ See Lewis 1966 for the Ramsification technique.

FT There is a property T which play the truth role if and only if P is T iff P & P is T iff P is such that things are as P says they are & P is T if it is such that P can be justified but not T & P is T iff P is stable & T is the norm for belief, etc

The issue of the nature of the properties which “realise” these roles is left open. Truth is a property which can be variably realized, just as a functional property can be so. Summarizing the idea, Crispin Wright says:

" The concept of truth admits a uniform characterisation wherever it is applied – the characterisation given by the minimal platitudes, which determine what is *essential* to truth...The form of pluralism for which space is allowed by this overarching uniformity is *variable realisation*. What constitutes the existence of a number is different from what constitutes the existence of a material object." (Wright 1996)

In other words truth is a second-order property of our statements, which has to be realised in various ways in first order properties which will underlie this role.

But this view is unstable¹⁶. In Lynch’s (2009) version of alethic functionalism truth is the second-order functional property of having a property which plays the "truth role", relative to a given domain. But is truth the higher-order property or is it the disjunction of the realiser properties? But we cannot identify truth with the realiser properties, because, given that these are by definition distinct, what is common to them would be lost, just as the common explanatory power of truth would itself be lost. But if truth is in one domain correspondence, in another superassertibility, yet in another one coherence, it becomes unclear what

¹⁶ As it has been argued by N:L:J Petersen 2008 and C. Wright in particular

common property these realise (Lynch 2009:66). For this reason Lynch prefers to say that:

“Truth is, as it were, *immanent* in ontologically distinct properties. Let us say that where property F is immanent in or *manifested by* property M, it is *a priori* that F’s essential features are a subset of M’s features ...Propositions about different subjects can be made true by distinct properties each of which plays the truth-role. Thus (atomic) propositions about the antics of the ordinary objects and properties of our daily life may be true because they represent those objects and properties. For propositions of that kind, correct representation plays the truth-role and it is *a priori* that if a proposition correctly represents it will be true. For propositions of another sort, perhaps moral propositions, superwarrant may be what plays the truth-role, or manifests truth.” (2009: 74, 77)

But if we pause for a minute to think about what this entails, it is by no means obvious that the view is coherent. Will the truth features which are essential to the property of truth be the same in all domains? No, since by definition, alethic functionalism entails that the properties which realise truth will not be uniform in all domains. In ethics truth may be realised as coherence, whereas it can be realised as correspondence in, say, physics, or as superwarrant¹⁷ in mathematics, etc. For the view to make sense, the realiser properties must be such that the properties which play the truth role are uniform. But how can they be uniform if they are realised in different ways in each domain? The only way to make them uniform is to limit the truth role to the most trivial properties, such as the syntactic features of the truth predicate and the deflationary schema '*P* is true iff *P*'. But then the

¹⁷ Superwarrant is the idea, borrowed by Lynch from Crispin Wright, that a statement has been justified to the extent that it has survived all attempts to refute it.

view becomes hard to distinguish from deflationism about truth, the view that truth is but a "thin" property whose "essence" is exhausted by the deflationary schema. This is an unwelcome consequence, because functionalism about truth was supposed to give us an alternative to deflationism.

I shall not here dwell upon the difficulties of alethic functionalism¹⁸. My purpose has been to introduce it in order to see whether a similar idea can be exploited with another "formal" notion, the notion of identity. Actually the functionalist move has a long ancestry in scholastic metaphysics with other "formal" or what were called "transcendental" notions (*res, verum, aliquid, bonum, unum*). Take the predicate "exists"¹⁹. It is one thing for a sensation to exist, another thing for an image, yet another thing for a tree or a person, etc. Should we say that the notion of existence is ambiguous? This was the traditional view of the analogy of being. But we also want to say that there is something common to these different senses of "exist", a property which applies to all sorts of entities but which is realised in different ways whether it applies to numbers, material objects, persons or images. Should we take the functionalist move for identity? Let us see what it would look like.

Identity is the one and only relation captured by the "platitudinous" principles of reflexivity, symmetry, transitivity, substitutivity and the identity of indiscernibles, but there are varying conditions of identity for material objects, persons, events, etc. So identity is a multiply realisable role-property of the second-order

¹⁸ See Engel, *to appear*

¹⁹ To my knowledge, the first to note the analogy between "exists" and "is true" in this context is Mark Sainsbury in his comments of Wright 1992, see Sainsbury 1993

FI There is a property I that plays the identity role iff for all x , $x I x$, & for all x,y,z if $x I y$ and $y I z$, then $x I z$ & if two things are I then they have all their properties in common, etc.

The idea is that this functional property will be multiply realized depending on the kinds of objects to which it applies: the property of identity will be different depending upon whether we deal with material objects, artefacts, persons, or events, etc. In each domain there will be distinct individuation conditions. As far as I know, no one has proposed this kind of view in the literature. But it seems at least to make sense.

The problems, however, encountered with the functionalisation of truth reproduce with FI. If identity is the functional role made up of the conjunction of these "platitudes", should we say that identity is among the realiser properties – identity for artefacts, identity for persons, identity for material objects, etc. or at the level of the higher-order property? If the former, identity, as we saw for biological objects, can fail to realize some of the platitudes, such as transitivity, and the functional role ceases to be common to all the realisers. If the latter, the notion of identity becomes so thin and abstract that it cannot take in charge the conditions of individuation. We have made little progress. And the same instability as the one that affects truth functionalism holds for identity functionalism: either identity is uniform across the domains in which it is realized, but then it cannot be plural, or it is plural, but it loses its uniformity. According to identity functionalism, several ways in which things can be identical, and for a given identity relation I , the way in which I holds depends on its specific domain. For instance Tibbles is the same as Tib *qua* animal but not *qua* material object.

Suppose that several ways of being identical are $I_1 \dots I_n$. Given $I_1 \dots I_n$, one can introduce a new way of being identical, IU. When are two things x and y IU? They are IU if and only if they are I_1 or ... or I_n . In other words

$$IU \quad (\forall p) (IU(x, y) \leftrightarrow I_1(x,y) \vee \dots \vee I_n(x,y))$$

But the characterization of IU makes being identical in one of the ways $I_1 \dots I_n$ a necessary and sufficient condition for being IU. That is, the things which are identical in the IU kind of way are *exactly* those things which are identical in one of the ways endorsed by the functionalist. This means that IU is a universal and uniform way of being identical: any statement whatsoever is true if and only if it is IU. The pluralist is thus committed to IU . but IU is what the functionalist denies ²⁰

6 Functionalism about highly relevant similarity

Clearly what is wrong with functionalism both about truth and about identity is that the list of the second-order functional properties which characterize the truth role or the identity role are far too general and abstract to be realized in the low level properties to meet the plurality of ways of being identical. It is the very idea of there being many ways of being identical or of instantiating the identity relation which is problematic, and here the syndrome is the same as with relative identity. What we need then are weaker higher-order properties. In the case of identity which interests us here, the problem lies in the fact that identity judgments do not conform to the formal properties of identity: (i) they are, as Geach remarked, very context sensitive in ordinary life, (ii) they do not respect, as the case of biological entities and perhaps persons shows, the principle of

²⁰ I reproduce here Petersen's 2008 formulation.

transitivity, and (iii) the identity of indiscernibles and perhaps the absoluteness of identity do not seem to apply in quantum physics. One familiar strategy, if one wants to keep with the idea that the concept of identity is a formal concept, consists in accepting different logical principles depending on the domain. For instance, one could adopt mereology for issues about constitution of material objects, or one could reject the transitivity of continuity for personal identity. The problem, as with all uses of non classical logic for dealing with truth value gaps or other anomalies, is that this strategy is not uniform and has a case to case flavor. In this respect the functionalist idea preserves the unity of the higher-order property.

The alternative strategy consists in taking as primitive not the classical notion of identity, but a weaker notion, close to identity, such as *relevant similarity*. It has been often argued (e.g. by Jubien 1997) that most of our identity judgments are actually judgments about relevant similarity. This is what Douven and Liecok (2010) propose. They argue that many of our ordinary judgments about identity are not really about whether things are identical in the absolute sense, but are about whether things are highly similar in all relevant respects, depending on the context at hand. In other terms, on their proposal :

"An ordinary identity statement “a is identical to b,” made or evaluated in a conversational context C, is to be understood as a claim to the effect that a is identical C to b—or $\text{Id } C(a,b)$, for short—which in turn is taken to mean that a is highly C similar to b in all relevant C respects. In other terms, $\text{Id } C(a,b)$ iff for every relevant C respect r, any difference in r between a and b is, if it exists at all, negligible C, where it is assumed that a difference that is negligible in one context need not be so in another. (Douven and Decock 2009: 67)

It looks, *prima facie*, as though it were a version of the thesis (R) above, of the relativity of identity. But, as they point out, Douven and Decok do not relatives identity to sortals, but to contexts, the point being that to each context corresponds a certain kind of similarity. To each context C is paired with a metric similarity space SC appropriate to that context²¹. For each respect that is relevant in a context, the context contains a corresponding similarity space. For instance if color is a relevant respect in C , then SC will contain a color space; if shape is relevant, SC will include a shape space; if time is relevant, it will include a temporal space; and so on. For each similarity space $r \in SC$; let $d_r(.,.)$ be the distance function associated with that space; so $d_r(a,b)$ measures the distance between the representations of objects a and b in r . Also associated with each $r \in SC$ is a threshold value $t_{r,C} > 0$; which may be different for different r and also—though for reasons given above this may be taken as optional—different for the same r in different contexts C . Then the ordinary or folk concept of identity is defined thus:

$$Id_C(a, b) \Leftrightarrow (\forall r) \in SC: d_r(a, b) \leq t_{r,C} \quad (\text{Douven \& Decock 2010:67})$$

What counts as highly similar varies from context to context. This explains why in some cases transitivity of high similarity does not hold. They point out, however, that there is no reason to doubt that in most cases our ordinary folk identity judgements respect symmetry and reflexivity. The contextual similarity approach also allows a version of the indiscernibility principle. A property is a region in a similarity space, Douven and Decok show that although the revised version of (IdInd) does not entail the

²¹ The notion of similarity space is familiar from recent work in cognitive science, in particular Gärdenfors 2000

sharing of all properties for identity, it entails the near sharing of all relevant properties (Douven and Decock 2010: 68-69)

Although it is not the relative identity One might worry that the relation of high similarity in relevant respects $\text{Id}_C(x,y)$ may suffer from the same difficulties as those of (R). In particular it seems that we can reproduce the reasoning which led Wiggins to conclude that relative identity is incoherent, if we accept that two things can be the same F but not the same G, and transpose to contexts²². But on reflexion, this should not be a problem: something can very well be Id_C to another in context C while not being Id_{C^*} in another context C^* . And the indiscernability of identical does not hold without restrictions. It is possible for there to be indiscernible objects which are distinct and distinct objects which are indiscernible, given the appropriate contextual restrictions.

It seems that the relation Id_C is the appropriate candidate for a functionalist theory of identity. The relation of highly relevant similarity is the one which plays the identity role:

F Id_C There is a property Id_C that plays the high similarity role iff for all x, $x \text{Id}_C x$, & for all x,y,z if $x \text{Id}_C y$ and $y \text{Id}_C z$, then $x \text{Id}_C z$ & if

²² Given Leibniz law in the Id_C version: $x \text{Id}_C y \rightarrow (\phi x \leftrightarrow \psi y)$,
and given by Id_C where C is a context : $x \text{Id}_C y \leftrightarrow (\exists C) (x \text{Id}_C y)$
we obtain $(\exists C) (x \text{Id}_C y) \rightarrow (\phi x \leftrightarrow \psi y)$

and we choose a context D such that $(\forall D) (x \text{Id}_D y \rightarrow (\phi x \leftrightarrow \psi y))$
by definition on the Id_C relation, and for an arbitrary context E
we have $(x \text{Id}_D y \rightarrow (\exists E) (x \text{Id}_E y))$

Now if x depends on context E, we have $(x \text{Id}_D y \rightarrow (\exists E) (x \text{Id}_E y))$

But then $x =_E x$. By leibniz's law if there is predicate $x \text{Id}_E \dots$, y has this predicate.

So we have $x \text{Id}_D y \rightarrow (\exists E) (x \text{Id}_E y)$,

But this entails the denial of Id_C :

$(\forall E) (\forall D) (x \text{Id}_D y \rightarrow (\exists E) (x \text{Id}_E y))$

I have only transposed to contexts the proof given by Wiggins 2001 : 53-54. since the high similarity proposal does not accept $\text{Id}_C x \text{Id}_C y \rightarrow (\phi x \leftrightarrow \psi y)$ unrestrictedly, the proof is blocked.

two things are Id (C) then they have *nearly* all their properties in common

This role is the set of features which are uniform across the various kinds of context in which the Id (C) relations hold. But the relation is to be distinct in different contexts. It can be realised in one way for certain entities, in another way for other entities. Each realiser corresponds to a distinctive similarity space and a value within that space. But is not, unlike for truth and identity, implied that the property Id(C) is uniform across domains. So we do not have the problem of instability encountered in the previous functionalisation of truth and identity.

Unfortunately, FId (C) cannot give us what we need, and for a very simple reason. It is not an account of the functional property of *identity*, but an account of the functional *concept* of similarity. As Douven and Decock make it clear the relation of highly relevant similarity is an *epistemic* notion, which applies to epistemic judgements of identity and their contextual relativity. A functionalist theory, however, is not a theory about our concepts, but a metaphysical theory about the nature of *properties*. It is properties which have realisers, not concepts. To concepts correspond different kinds of judgments, not entities of a given sort. I fully agree with Douven and Decock that Id (C) captures well our epistemic judgments of identity. But we cannot, on pain of begging the question, assimilate that relation to identity. Douven and Decock tell us that Id (C) captures the folk notion, or the "loose" sense of identity, but not what Reid called identity in the "strict" metaphysical sense. Indeed one might answer that I am myself beginning the question in supposing that the metaphysical sense of identity is distinct from the epistemological one. But unless one has shown that the latter can be reduced to the former, the absolutist sense of identity is to stay with us, for we want to be able to ask whether two *things* are identical or

not, *simpliciter*. In order to deal with the ontological issue and to find an equivalent of the functionalist view of identity for properties, one would have to defend a notion of weak identity and of weak discernibility. There are attempts in this direction, including defences of vague identity against the absolute notion (Parsons 2000). But it is not clear that they succeed (Salmon 2002, Hawley 2009). I shall not examine this point here. The point, however, that I want to press is that if a functionalist theory of identity can work, it would have to have a *uniform* functional property, which would be along the lines of FI. And if it is along these lines, it is bound to be unstable, as I have argued above.

7. Conclusion

I have tried to make sense of one alternative to the classical absolute notion of identity, which I have formulated on the model of the functionalist conception of truth. Both are unstable, and cannot locate the functional property at the correct level. The notion of highly relevant similarity seems to give us what we need, but it is a purely epistemological theory. So if we want to have a theory of the metaphysical relation of identity, we have to stick to the absolutist view, the one that Ruth Marcus showed to be dependent on the very notion of an object²³.

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²³ Ruth Marcus "Possibilia and possible world", *Modalities*, p.213

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