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Tropes and Relations

1. Introduction

From a commonsense point of view the world is full of relations. There is love and hate connecting individual people to each other. There are diplomatic advances and political conferences in order to establish harmonious relations between states. And, apart from the social and political sphere, everything studied in the natural sciences and in technology also seems to be connected in some way or other to something. If everything we encounter in our world seems to be related or combined, this state of affairs surely supplies a good reason for philosophers to find a place for relations in their ontologies.

A straightforward ontological account would be one which acknowledges relations as real beings, and that means**,** according to the scholastic tradition, as universals. This realist move which has been re-established within contemporary analytical ontology at least since Russell's early philosophy, is, however, not the only way to take relations seriously.

I shall argue that there is much room for the ontological reconstruction of relations, even if one does not accept universals. The background for this argument is a particularist *and* realist theory, based on *tropes* ("trope" being the short name for "property instance" or "individual quality"). One way of reconstructing relations is to construe them as particulars. They are supposed to be *relational* or *polyadic tropes* (J. Bacon, D. Mertz). The other way is to hold that relations are *internal* or *formal* and therefore do not require a category *sui generis* (K. Mulligan, P. Simons). I shall discuss these alternatives and opt for the second, i.e., the reconstruction of relations as internal to their relata. Moreover, I offer an argument for why basic relations such as existential dependence should be granted a transcategorial status within trope ontology. In the final sections I consider possible objections and discuss a recently proposed solution to the problem of trope composition.

2. Reconsidering Russell's Arguments

Russell had two different arguments in defence of relations. The first argument, presented as early as 1903 in his *Principles of Mathematics*, rests on the irreducibility of asymmetrical relations which are involved in theories of number, quantity, order, space, time, and motion. For example, "*a* is greater than *b*" and "*b* is greater than *a*" are propositions "containing precisely the same constituents, and giving rise therefore to precisely the same whole; their difference lies solely in the fact that *greater* is, in the first case, a relation of *a* to *b*, in the second, a relation of *b* to *a*." Since this difference "of sense" cannot be explained away by reducing it to the properties of the terms related, at least some "purely external" relations have to be acknowledged. Moreover, Russell claimed that "the so-called properties of a term are, in fact, only other terms to which it stands in some relation".[1]

The second argument, presented in different works around 1911, concerns the question whether a theory "which admits only particulars and dispenses altogether with universals" is tenable. If, using Russell's example, we concede that two instances of white are in a special way similar, namely with respect to colours, the colour-likeness itself will be *prima facie* a universal. And so we will have failed to avoid universals. The only way out would be to "apply the same analysis to colour-likeness", namely, to take a "standard particular case of colour-likeness, and say that anything else is to be called a colour-likeness if it is exactly like our standard case". But according to Russell**,** this procedure leads to an endless regress: "We explain the likeness of two terms as consisting in the likeness which their likeness bears to the likeness of two other terms, and such a regress is plainly vicious. Likeness at least, therefore, must be admitted as a universal, and, having admitted one universal, we have no longer any reason to reject others. Thus the whole complicated theory, which had no motive except to avoid universals, falls to the ground."[2]

So, in the first argument Russell defends relations as irreducible entities in virtue of their possible *asymmetry*, while in the second argument he tries to show that even if one admits only particulars, one must acknowledge at least one universal, namely, the similarity relation in order to avoid a *vicious regress*. Both arguments are a severe challenge, if

[1] B. Russell (1903), *Principles of Mathematics*, London: Allen & Unwin, Chapter XXVI, p. 225f.

[2] B. Russell (1911), "On the Relations of Universals and Particulars", reprinted in his *Logic and Knowledge*, London: Allen & Unwin, 1956, 111f. See also B. Russell (1912), *The Problems of Philosophy*, London: William & Norgate, 54f.

one's ontology is solely based on tropes, i.e. on individual qualities.[3] How then can a trope theorist counter these arguments?

3. The Asymmetry Problem

Let us start with the asymmetry problem. One strategy would simply be to construe the category of tropes in such a way that it comprises relation instances along with property instances. Some tropes are relational, some are not. As soon as relational tropes are admitted, an account of asymmetry will generate no special problems different from those germane to theories which admit universals or a genuine category of relations. If *a* is greater than *b*, then *a* is related to *b* (where *a* and *b* are particulars) by a particular *greater-than*-relation. This line of reasoning has been adopted by John Bacon and Donald Mertz.[4] While Bacon distinguishes irreducible polyadic tropes from monadic tropes and works out a system based on set theory, Mertz has one basic entity which he calls "relation instance", including monadic relations or properties. His claim is that only relation instances are predicative, whereas universal relations are not.

One might object that this procedure will lead to an unseemly inflation of particular relations. But this is not to the point; after all, the universe may be like that. More to the point, or so it seems to me, is another objection. What exactly is the ontological work relational tropes or relation instances are doing? Surely, they are supposed to relate or connect at least two entities, and against the background of trope theory, these entities can only be tropes or something constructed out of tropes. But are these purportedly relating tropes really needed? Consider the case of *a* having a mass of 3 kg and *b* having a mass of 1 kg, where *a* and *b* are trope complexes which differ at least in their respective tropes of mass or heaviness. If these tropes belong to the constituents of *a* and *b*, the statement "*a* is heavier than *b*" is true. Notice that no particular *heavier-than*-relation is needed in order to ground that fact. The whole work is done by the respective relata, i.e. the different tropes of heaviness. Nevertheless, there is an interesting lesson to be learned from this example or similar ones, a lesson which Ramsey already tried to teach Russell, namely, that the structure of a language should not be the overall guide in

[3] For a critical account see C. Daly (1994-95), "Tropes", *Proceedings of the Aristotelian Society* 94, 253-261.

[4] J. Bacon (1995), *Universals and Property Instances. The Alphabet of Being*, Oxford: Blackwell; D. W. Mertz (1996), *Moderate Realism and Its Logic*, New Haven: Yale University Press.

detecting the logical and ontological structure of reality.[5] It is the grammatical structure of our statements which seems to demand an appropriate entity as the reference or truth-maker of a comparative expression like "*x* is heavier than *y*". But the grammar of a language does not always tell us in a reliable way how to construe ontological categories.

This leaves us with the thesis that relations, be they symmetrical or asymmetrical, are internal or formal, and therefore do not require a category *sui generis*. Recently Kevin Mulligan has argued that all external or "thick" relations can be reduced to internal or "thin" relations and monadic properties.[6] The interesting point in Mulligan's treatment of relations is that he makes explicit what it means to be an internal relation. In his explication it is of the essence to distinguish between *inherence* and *dependence*. Consider, for instance, the statement "Mary hits Sam". On the inherence model, one might ask whether this particular hit is in Mary, in Sam or in both. It is obvious that none of the possible answers would be satisfactory. On the dependence model, in contrast, the particular hit is existentially or ontologically dependent on Mary and Sam. "Thus, a particular greater than relation, or a particular relation of numerical difference, if a trope, depends on its terms, just as they necessitate it" (Mulligan 1998, 345).

The importance of ontological dependence which dates back to Edmund Husserl's *Logical Investigations* and which has been further elaborated by several scholars since then, e.g., by Peter Simons[7], will become even more evident when trope theorists try to counter Russell's regress argument.

4. The Regress Problem

Russell, and before him, Bradley, had argued that any ontology which reconstructs universals in virtue of the similarity or resemblance of individual qualities will end up with a vicious regress. This argument, however, is only valid, if one assumes, as Russell obviously did, that the similarity of at least two tropes demands a special trope of similarity which somehow relates the respective tropes and so accounts for their being similar. But there is no reason for this assumption. Consider two instances of white occurring in two sheets of paper. The ontical ground for this case

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[5] F. P. Ramsey (1925, "Universals", *Mind* 34.

[6] K. Mulligan (1998), "Relations – Through Thick and Thin", *Erkenntnis* 48, 325-353.

[7] P. Simons (1987), *Parts. A Study in Ontology*, Oxford: Clarendon, Chapter 8; P. Simons (1994), "Particulars in Particular Clothing: Three Trope Theories of Substance", *Philosophy and Phenomenological Research* 54, 553-575.

of colour-likeness is nothing other than the existence of the respective individual qualities, i.e. the tropes of whiteness. In other words, similarity is an internal relation, ontologically dependent solely on the respective relata. Thus, contra Russell, there are no likeness or similarity tropes involved, and therefore no regress is lurking. If tropes assemble in similarity classes, they do so in virtue of the respective individual qualities which they are and nothing has to be added.

5. Ontological Dependence

So far, I have tried to show why trope ontology is not defeated by Russell's arguments. Both the problem of asymmetrical relations and the regress problem can be solved by employing two counter-arguments: *first*, that relations against the background of trope theory are internal or (at least) reducible to internal relations, and *secondly*, that internal relations of various sorts are cases of existential or ontological dependence. But what about ontological dependence itself? It might be objected that in the end trope theorists have to accept at least one universal relation, namely dependence, and so nothing would have been gained.

Although it is perfectly correct to hold that any internal relation involves existential dependence, as Mulligan and Simons do, it is my contention that something more has to be said about ontological dependence itself. If it is as important as (at least some) trope theorists, myself included, believe it to be, it should somehow show up in the ontological system.

I define ontological dependence as follows:

> (D) *a* is ontologically dependent on *b*, if and only if it is impossible that *a* exists and *b* does not exist.

Thus, ontological dependence is being defined in terms of modality and existence. As these terms might be considered transcategorial, ontological dependence has itself a transcategorial status.[8]

6. Possible Objections

Even if my – admittedly brief – account of treating relations within trope theory is accepted as far as Russell's arguments are concerned, there still might be general objections or, at least, sceptical questions. First, realists about universals may find that "the notion of an internal relation is itself

[8] For more details see K. Trettin (2001), "Ontologische Abhängigkeit in der Tropentheorie", *Metaphysica* 2, No.1, 23-54; see also I. Johansson (1989), *Ontological Investigations*, London: Routledge.

problematic", as Herbert Hochberg does.[9] Starting with G.E. Moore's distinction, he tries to disentangle different meanings of "internal" concerning relations. I think there is one clear meaning which is not at all problematic and which can be stated in Hochberg's own words: "[…] a relation is internal to a pair of terms if the existence of the terms entails that they stand in that relation."[10] For clarity, I should emphasize that here no relating entity is needed. If, for example, trope *a* is similar to trope *b*, there is no similarity trope at work. Secondly, and more important, even friends of tropes could argue that not all relations are internal in the sense of being reducible to their terms, simply because then all contingent (external) connections would reduce to essential or necessary (internal) relations – a very unfortunate result. Thirdly, trope philosophy has recently been attacked by a severe competitor within the field of particularism. Tropes, or so Donald Mertz argues, are totally unable to account for any complexity in the world. What he proposes instead is – as mentioned before – "relation instances", which he now calls "unit attributes" or "ontic predicates".[11] Finally, there is still the case of basic trope composition into something like a thing or a substance. How can one explain that different tropes co-exist in such a way that they build up structures of integral wholes? Surely, an explanation from internal relations alone would be highly problematic, because all trope structures would then turn out as essences or necessary trope complexes. However, there may be a solution to this problem, recently proposed by Anna-Sofia Maurin, fully in accord with trope philosophy and *prima facie* also with my account of ontological dependency. She suggests that the classical compresence relation promoted by trope pioneer Donald Williams[12] should be construed as a trope one-sidedly dependent on the tropes it relates: a pure relation-trope.[13] Whether this is a good solution has to be seen.

In what follows, I shall discuss these problems and their suggested solutions in order to further defend trope philosophy against attacks from the relation-front. As Donald Mertz has recently opened fire against trope ontology with weighty charges from within the camp of particularism, his attack is the first to be met and, accordingly, this cannot be done without an ingredient of polemic.

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[9] H. Hochberg (2001), "A Refutation of Moderate Nominalism", in his *Russell, Moore, and Wittgenstein: The Revival of Realism*, Frankfurt/M.: Hänsel-Hohenhausen, 176.
[10] H. Hochberg, op. cit., 177.
[11] D.M. Mertz (1996), (2002), (2003).
[12] D.C. Williams (1953), "On the Elements of Being", *Review of Metaphysics*, vol. 7, nos. 1-2.
[13] A.-S. Maurin (2002), *If Tropes*, Dordrecht: Kluwer, 163ff.

7. Unit-Relations Attack Tropes

The primary concern of D. Mertz seems to be the metaphysical explanation of all sorts of connectivity, unification, combination, togetherness. He is the champion of "the polyadic", who fights against "the tyranny of the monadic" (TMS, 167).[14] His business is trading in networks, systems, and structures.[15] On this perspective it is not surprising that relations are supposed to be the very building-blocks of what there is, the prime combinators. Against the universalists, however, Mertz claims that relations can only do their combinatorial work, if they are conceived as instances or "unit attributes". According to Mertz**,** universals are not capable of "ontic predication".

So far, this seems to be good news for trope ontology. Why not welcome an ally in instance ontology and combine forces against universal-realism and bare nominalism? Why should not proponents of property instances and proponents of relation instances co-operate in a most fruitful way? Unfortunately, such is not the case. One reason is that Mertz doesn't like tropes. "Under trope theory individuated properties 'free float' in the sense that they are by definition not predicable – each is a self-sufficing 'little substance'" (TMS, 169). Trope theory is a failure because it needs to reduce relations to properties, a reduction which is not possible, as Russell has shown. On the other hand, Mertz doesn't find it problematic to reduce relations to properties: monadic properties are just "the limiting case" of polyadic relations. So, one gets the impression that the actual dispute is not one between universalism and particularism but rather a dispute within particularism, with proponents of tropes on the one side and proponents of relation instances on the other. This will be even more evident, when we take a closer look at what an ontic predicate is:

> […] an ontic predicate is a simple entity with a dual nature – one aspect a combinatorial state to or among one or more subjects, the other aspect a content or intension ('sense') that delimits as to kind and, when the predicate is polyadic, the number and order of the

[14] D. W. Mertz (2002), "Combinatorial Predication and the Ontology of Unit Attributes", *The Modern Schoolman*, LXXIX, nos. 2 & 3, 163-216. References to this essay will be abbreviated as TMS followed by number of page.

[15] In his „An Instance Ontology for Structures" (2003), *Metaphysica*, 4, no. 1, 129, he writes: "[…] a structure or complex is a network or mesh of variously inter-related entities, and so a definition of complexity must make use of relations understood as constituent linkings or 'mediating combinators', the 'rods', between shared object 'nodes' that together make up an inter-connected whole."

> unified subjects. The intension is also the source of a polyadic predicate's formal/logical properties (e.g., asymmetry, transitivity, reflexivity), attributes absent in the limiting case of monadic properties (TMS, 168).

So far, we are confronted with two puzzles: First, how can a *simple* entity be double-natured? If it is composite, talk of simplicity is – to say the least – misleading. But perhaps this puzzle is easily resolved, if one stops talking of different "natures". Under this condition, an ontic predicate is a simple individual relation – period. But as we shall see shortly, this charitable interpretation is not intended. Secondly, one might ask: What are the subjects? Are they – analogously – "ontic subjects"? And if so, are they reconstructed from relation instances or just any old substances? The following statement shows that Mertz not only insists on the composite structure of ontic predicates, but also that the components belong to quite different categories, namely, particulars and universals.

> The combinatorial or predicable agency of relation instances, together with intension universals, are the potent features of this unit attribute ontology and what distinguish it from its chief rival, nominalistic trope theory (TMS, 169).

So what we should swallow is that the purportedly simple ontic predicate is a composition of an individual or individuated combinator or nexus, on the one hand, and a quality universal, on the other, both mixed into one. If this is what "moderate realism" comes to, I prefer to stick with pure trope philosophy. Moreover, Mertz's conception indicates that he obviously wants to embrace theories which promote *facts* or *states of affairs* as the basic (complex) categories. Obviously, it is his contention that these theories need either the help of unit-attribute ontology in order to be fully explicable or that unit-attribute theory is itself intended as an ontology of states of affairs:

> When the details are supplied for instance ontology, we would have, I contend, an explanatorily adequate version of the thesis advanced by Wittgenstein and recently argued by Armstrong that the world is a world of facts, not things (TMS, 171).

From these statements it will be perfectly clear that a theory which admits such a variety of categorially different entities, including universals as well as complex things like ontic predicates and possibly states of affairs, is *not* a chief rival of trope ontology. It might possibly have been one, if it were a theory based solely on individual relations which arguably could explain the general structures of all complex beings. Such a theory would also have to say something more about "monadic properties", i.e., individual qualities. Just to state that these are "limiting cases" of polyadic relations,

wouldn't have been enough. So, the intended attack somehow fizzles out before it reaches the opponent.

If tropes really were "free-floating, self-sufficing little substances", it surely would be justified to propose relation instances in order to explain connections between tropes. But this picture is utterly wrong. Rather, tropes are inter-dependent entities. Presumably no individual quality can exist all on its own. I dare to put forward the even more radical hypothesis that no entity whatsoever is absolutely independent. Admittedly, we are all still in the grip of the Aristotelian idea that at least one ontological category – substance – should be perfectly independent. But it is easy to see that on the substance view metaphysical dependency also plays an important role, because qualities and all non-substantial categories are supposed to be dependent on (first or individual) substances. And one may well ask whether the purportedly independent substances are not equally dependent on their properties. On the trope view it is the other way round: Rich trope complexes (which might be regarded as equivalent to substances) are dependent on the inter-dependent tropes which constitute them. Therefore, I quite agree when Donald Mertz claims that existential dependence is not a defect of being but rather "a positive status" (TMS, 170) – although I wouldn't restrict this view to his relation-theory.

Apart from further agreements, for instance, in criticising the traditional inherence or containment model (*praedicatum inest subjecto*), there is another point at which Mertz's conception might meet with my version of trope theory. If his ontic predicates are the prime combinatorial entities and, given that they include not only (polyadic) relation instances but also (monadic) property instances, i.e., tropes, then tropes are *eo ipso* ontic predicates with their alleged combinatorial functions. – Let us now consider a notorious problem of trope theory which, at least, *prima facie* cannot be solved by merely recurring to internal relations, and let's evaluate a new solution to it.

8. An Argument for Pure Relation-Tropes

How can one explain that tropes assemble in tight bundles or build a thing-like composition? On the classical view proposed by Donald Williams, tropes simply co-exist if they are members of a "concurrence-sum", i.e., if they are "present at the same place".[16] As Williams observed, *concurrence* or *compresence* is nothing other than (spatio-temporal) location. Location, however, is external "in the sense that two tropes per se do not entail or

[16] D.C. Williams, "On the Elements of Being" (cited after Reprint 1966), 79.

necessitate or determine their location to one another".[17] If this is correct, trope theory has to admit at least one external relation which by trope-theoretical assumptions has to be a trope itself. But Bradley and Russell would surely have warned that by invoking location-tropes we would be on our way to a vicious regress. Let's assume that three tropes, *a*, *b*, and *c* are located at the same place. Then there would be *prima facie* three location- or compresence-tropes at work: C_1 (connecting *a* and *b*), C_2 (connecting *b* and *c*), C_3 (connecting *a* and *c*). But do these C-tropes really connect? Are they not just bare location instances with no internal power of connecting anything? So further compresence-tropes seem to be needed to account for the compresence of C_1, C_2, C_3, and so on, *ad infinitum*.

Williams himself was cautious enough to avoid such a procedure. For him concurrence was somehow primitive, and he saw obviously no problems in using the formal tools of mereology without giving deeper thought to the fact that thereby at least the part-whole relation comes into play. Equally he must have felt no urge to justify the use of set theory in order to account for his "similarity-sets". Since the nineteen fifties and sixties, and surely after Keith Campbell's promotion and elaboration of Williams's ideas in 1990, the situation has changed. Analytical philosophers interested in ontology – and especially in trope theory – have become more and more sophisticated and consequently have tried to circumvent any traps. One way to circumvent the alleged regress trap has been to contest that Bradleyan regresses are vicious.[18] Another option has been to avoid lurking regresses right from the start by exploring the possibility that external relations are reducible to internal ones. This was the route taken by Kevin Mulligan and Peter Simons, a route which I have also adopted – inspired additionally by Ingvar Johansson's interesting definitions of existential dependence.[19] The dependency-option dates back to Husserl's *Logical Investigations* where the unity of 'moments' – as Husserl called tropes – is, at least to my mind, convincingly explicated without invoking a 'moment of unity' (*Einheitsmoment*). A third option would surely be to borrow a relation instance from Donald Mertz, but as we have seen, this is not as easy as it looks. To cast one's whole lot with 'unit-attribute ontology' is to buy things one didn't intend to buy. In addition to these Herculean efforts which may appear obtuse to outsiders, one can easily imagine, for instance, Herbert Hochberg playing the old

[17] Ibid.
[18] G. Küng (1967), *Ontology and the Logistic Analysis of Language*, Dordrecht: Reidel, 168; K. Campbell (1990), *Abstract Particulars*, Oxford: Basil Blackwell, 35-36. On vicious and virtuous regresses see also A.-S. Maurin (2002), 98-104, 161-163.
[19] I. Johansson (1989), *Ontological Investigations*, London: Routledge.

tune again: All you need are relations. The relations you need are, of course, supposed to be proper universals.

In view of these debates, it is especially noteworthy when someone returns to the roots of (modern) trope philosophy and proposes a relational solution by invoking a *compresence-trope*, even though one might be highly sceptical about whether this solution will work. For Anna-Sofia Maurin two things are basic at this point of the investigation: First, the solution should be compatible with assuming a pure trope ontology. Secondly, whatever the relation may be, it should be external to its terms. The decisive passage runs as follows:

> For it to be true that *a* is compresent with *b* there must exist, apart from *a* and *b*, a *compresence-trope*. A compresence-trope is, contrary to an 'ordinary' trope, a *relation*-trope. The difference between an ordinary trope and a relation-trope is this: a relation-trope is such that, although its existence is contingent (that is, it might or might not exist) it must, *given that it exists*, relate exactly the entities it in fact relates. In other words, any relation-trope is *specifically* dependent on the tropes it relates. This is true while, on the other hand, the related tropes are *not* likewise dependent on the existence of the relation-trope in question. [...] We might also put the position as follows: the relation of compresence is *external* to the tropes it relates, but, simultaneously, the related tropes are *internal* to the relation of compresence.[20]

So what we have here is apparently a real relation-trope (and not merely a location-trope which simply adds to the lot of tropes to be connected). This is a refreshing idea. The relation-trope is, if I understand this proposition correctly, a trope being of a sole quality, namely, relating.

Let us get clear about the dependencies involved by way of a simple example. Assume a red-trope and a round-trope, which somehow exist separately. Eventually, a compresence-trope comes along, let's say C_1, and as its *raison-d'être* is nothing but relating, it detects red-trope and round-trope, and – click – the two are connected. Before that 'click' we had three single entities wandering separately through the world, after the 'click' things have changed. C_1 is now one-sidedly dependent on red-trope and round-trope, although it still seems to have preserved its status of being external to what it relates. However, the situation of red-trope and round-trope appears to have changed more dramatically, for from now on they are in the clutches of C_1 and must cope with life as internal relata of this necessitating relation-trope.

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[20] A.-S. Maurin (2002), *If Tropes*, 164.

If my little fairy tale were *cum grano salis* a correct picture of Maurin's explication, it would be totally mysterious how, on the one hand, C_1 is external to its terms and therefore leads, so-to-speak, an independent life on its own, while, on the other, it is supposed to exist only as a dependent entity on the tropes it actually relates. Equally mysterious is that the 'ordinary tropes' which are obviously conceived as independent tropes suddenly turn into mere internal relata of this compresence-trope. The crucial question here is how compresence-tropes come into existence. Maurin says, that their existence is *specifically* dependent on the tropes it relates. Reading "specifically" in a strict sense, a compresence-trope starts life as soon as there are the appropriate species, i.e., *similarity classes of tropes* on which it is supposed to be dependent. On this interpretation C_1 would turn out as an expert on two similarity classes, {Redness} and {Roundness}.

Thus, on a slightly modified version, our compresence-trope is not a *pure* but a *qualified* relation-trope which obviously comes into existence as soon as there are species or classes of tropes for which this relation-trope is "specifically" qualified as a connector. Let's try out a tale based on this modification. C_1, our meanwhile qualified relation-trope, would *not* ramble carelessly through the world, but do its slave job of connecting anything red and round which comes into sight in order to preserve its sheer existence. Meanwhile red-trope and round-trope are still sitting on a bench in the middle of nowhere waiting for Godot. C_1, being a very alert compresence-specialist, is delighted to detect these two isolated tropes which doubtlessly fall under the C_1-obligations and -expertise, and – click – the two forlorn souls, red-trope and round-trope, exist ever after in a nice red ball – a wonderful symbiotic connection already admired by Plato.

I am not sure whether – and if at all, how far – my interpretations correspond to Maurin's intention in this relational account of trope-composition. What is clear is that a relation-trope *must* relate as soon as it exists. This very trope "could not have existed unless it related".[21] However, it is not so clear how one should interpret its being one-sidedly dependent on the tropes it actually relates. Somehow the respective 'ordinary tropes' seem to be responsible for the existence of these relation-tropes. But then one is very close to the view that these individual relations are internal, i.e., depend on the relata.

Thus, I conclude that although proposing a pure relation-trope seems to be a promising hypothesis against the background of pure trope ontology, it may fail in the end. It is promising, because it satisfies the

[21] A.-S. Maurin, op. cit., 166.

categorial conditions of tropes: a trope is an individual quality, and if this individual quality is 'relating', then a pure relation-trope, i.e., a trope which exists as soon as it relates, is a proper member of the universe of tropes. The hypothesis is promising in a further respect: If pure relation-tropes can be considered as a different or quasi-different category from the category of 'ordinary tropes' as the potential terms of these individual relatings, the condition of externality is fulfilled and any vicious regresses are stopped. The approach may fail, however, for two reasons.

First, the dilemma remains unresolved. The dilemma is this: If a pure relation-trope is supposed to be *external* to specific ordinary tropes, *it cannot be dependent* on exactly these tropes; if, however, the relation-trope can only *exist in dependence* of the tropes it relates, it appears to be *internal to them*.

Secondly, 'compresence' is a problematic notion. It is problematic in that it presupposes a fixed framework of space and time, something like a big container of all concrete things. As the relation-trope in question is conceived as a *compresence*-trope in a pronounced way, it is supposed to unify tropes at a position 'in space and time'. But what is time and space on trope theory? Although this is only meant as a minor critique of Maurin's approach, for nearly all philosophers dealing with ontology nowadays still seem to adhere to the Newtonian model of time and space, one should give these presuppositions a thought. If – in the light of modern physics – this containment model cannot be defended as a natural condition *sine qua non*, the idea of construing *mere* compresence-tropes rests on instable ground. The deeper ontological question behind this is how trope theory (or any other metaphysical theory) can coherently account for space-time.[22]

9. Ontological Dependence – Once Again

Let me summarise the outcome of these objections and proposals. Although I consider the 'combinatorial idea' in Mertz's proposal very interesting, his conception follows a dialectic, which is totally different from that of trope theory. Obviously, within 'unit-attribute ontology' one can make use of categories which are complex rather than simple and which do not exclude universals. Therefore**,** it is definitely not a rival of a pure version of trope ontology. Rather, the whole conception seems to be tailored to support fact-ontology or universal-realism.

[22] Cf. K. Trettin (2002), "Tropes and Time".

This is different with Maurin's relational account, which is designed to fit perfectly in the framework of pure trope theory. If, however, the purportedly external relation-trope turns out to be merely internal to the tropes it actually relates, nothing will have been gained by taking the trouble to invoke this special relation-trope in the first place. For those who wish to defend the view that relations are reducible to theirs terms, myself included, this outcome surely wouldn't be tragic but, rather, desirable. Nonetheless, I concede that *prima facie* the idea of an individual connector or *nexus* looks very attractive, because then trope theorists could lean back and simply point to this fabulous nexus-trope whenever there is an attack from the relation-front. Unfortunately, this nice and useful looking ontological device is as problematic as other bare particulars, e.g. substrates. If our relation- or nexus-tropes are by definition purely combinatorial and totally external to the tropes they may or may not combine, the nexus-tropes would be indistinguishable from one another and eventually collapse into One Big Combinator. Apart from the fact that trope theorists would then have to accept at least one universal (or would have to say something intelligent in order to reject Russell's early objection), it is far from clear whether such a universal nexus can combine anything – a lesson we have learned from Donald Mertz. For, in order to do its combinatorial work, the Big Nexus must be 'exemplified' or 'instantiated' and obviously thereby gain back some individuality – but then we are right back to the only existing individuals which could do all this: the self same entities which are supposed to be connected – tropes or individual qualities in our case. Therefore, a pure nexus-option is not a very promising solution. If, however, one argues for an individual nexus- or pure relation-trope in terms of *existential dependence*, as Maurin does, one should give more thought to what dependency is. Although in any *definiens* or *explanans* one has to use concepts which seem to be more basic or at least better understood than the ones to be defined or explained, those defining concepts should be examined thoroughly, if they appear to play a decisive explanatory role not only in one definition but in the whole theory. This is the case with ontological dependency. Therefore, I should like to conclude by briefly stating in a pointed way what dependency means on the version of trope theory which I have tried to defend.

On the ground-level of ontological reconstruction there are what Leibniz would have called the very atoms of nature and the elements of being.[23] In contradistinction to Leibniz's conception, these atoms are not

[23] In his Monadology, § 3, Leibniz speaks of « les véritables Atomes de la Nature et en un mot les Elemens des choses ».

independent monads, but tropes. Tropes are individual qualities and as such far more basic than his monads or 'simple substances'. Nevertheless, I think one can preserve a great insight from Leibnizian monadology, namely, that the metaphysical atoms should not be conceived as dumb & dull items, but, rather, as entities bestowed with a little *appetitus*. Tropes, at least as I conceive of them, are such that they are internally 'inclined' to possibly connect to other such beings. Translated into our terminology, this means that tropes are in principle capable of building structures without the help of external combinators. Let's assume that *a* is a trope which has an internal 'conatus' to trope *b*. Assume further that *b* is not around: what happens? Not much, because then – deplorable as it is – trope *a* will have had a very short life and pass out of existence.

The idea of a totally independent, sole trope which is traditionally supposed be needed as a starting point is denied. Tropes are not substances. So the starting point – if there is one at all – is pluralistic: there are at least two individual qualities compatible to each other in order to build up higher structures. If they are not compatible, they will not succeed – and evolution has to wait for a better opportunity. Surely, this picture is not meant to revitalise something like the Adam & Eve Myth. One shouldn't forget that tropes are very basic entities and not just 'little substances'. Has anyone ever explored whether the sub-atomic particles detected or inferred in physics can exist all on their own? However these explorations may turn out, there is good reason to be critical towards the classical obsession of watching over the strict independency of basic entities.

If dependency is such an important and explanatorily decisive notion, it should be taken seriously in ontology and granted the status it deserves. On my view, it is a principle by which the connection of all tropes is explicable. As I have briefly indicated in §5, ontological dependence itself can be defined in terms of modality and existence. And if one takes 'modality' and 'existence' as the most basic transcategorial concepts of any ontology, dependency itself turns out to be a transcategorial concept.

I am quite aware of the fact that my view is tentative and needs to be worked out in detail. Nonetheless, I am convinced that this is a worthwhile task.[24]

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[24] An earlier version of this paper was presented at the 2003 World Congress of Philosophy in Istanbul. I have profited much from the lively discussion with a very interested audience. Special thanks to Louise Röska-Harding for checking my English.

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