Copies and Dependence

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Abstract

It seems natural to define the relation of "being a copy of" by means of the notion of similarity. While similarity is essential in the characterisation of the copying relation, a simple similarity account of such a relation does not seem to work. Counterexamples are easy to find. In this paper, we defend the idea that the copying relation should also be characterised by means of a dependence relation. It is not easy, however, to understand what kind of dependence relation is the right one. We will show that ontological and counterfactual forms of dependence are modally too strong and we, provisionally, try to use the modally weaker notion of historical dependence. Ontological, counterfactual and historical dependence share the common feature of being rigid notions of dependence. In the final section of the paper, we briefly discuss the idea that there might be non-rigid kinds of copying that therefore need to be characterised by means of non-rigid kinds of dependence.

Keywords

copies, similarity, ontological dependence, counterfactual dependence, historical dependence, artifacts

1. Introduction

According to N. Goodman [1, p. 111], the relation of "being a copy of", i.e. the relation between two distinct objects such as the second is a "reproduction" of the first, is "unexpectedly complex".

On a first try, one could in effect be tempted to simply define the copying relation by means of the relation of similarity, treating "being a copy of" as a case of *perfect similarity*:

(C0) x is a copy of y iff x is perfectly similar to y.[1]

A simple similarity approach to the copying relation, however, is problematic. The problems are at least two.

[1]It is admittedly difficult to properly understand how perfect similarity should be characterised. For the aim of this paper, we rest content with an intuitive sense of the notion, according to which two objects are perfectly similar in case they share most, if not all, their quantitative/primary (size, matter, etc.) or qualitative/secondary (colour, smell, etc.)) properties. From this rough characterisation, it follows, for example, that two objects of different size cannot be copies of one another, even if they share all other properties. A referee suggests that one could model the relation of copy in a relativised way: an object is not a copy of another in an absolute way (by being perfectly similar to it), but only with respect to some class of "features". We prefer the absolute notion of copy; a relativised notion would make the copying relation a sort of (imperfect) similarity relation, with the result of making too many objects "copies" of one another.

The first one is that of *accidental copies*: it could happen that two completely ontologically and historically independent objects end up being perfectly similar, without this implying that the first is a copy of the second. For example: imagine two perfectly similar diamonds discovered in two completely different and historically unrelated places. The two diamonds satisfy the perfect similarity condition, but it would be strange, in such a situation, to claim that one is the copy of the other. Similar cases could be imagined for artifactual objects too: there might be two perfectly similar nails produced by different and unrelated firms, on the basis of different and unrelated lines of production. The two would be perfectly similar, but none of the them would be a copy of the other. In both cases, one might ask: which one of the twos is the copy of the other? Which one is the original?

The second problem is that of the *common original*: assume that, from an original object, two copies are made. The two copies are, by definition, perfectly similar to the original and thus perfectly similar between themselves. But it would be strange to say that the two copies are copies of one another. Again one might ask: which one is the copy? Which one is the original? This problem reveals that the relation of perfect similarity and that of copying have different formal properties. (Perfect) similarity is *euclidean*: if x and y are in the relation R of perfect similarity to z, then x and y are in the R relation between themselves; the relation of copying is instead not euclidean as it is revealed by the problem of the common original; two copies of the same original are not between themselves in the relation of copying.

Notice that the problem of the common original is structurally similar and, in effect, named after a similar problem arising for simple regularity accounts of causation; according to these accounts (famously defended by D. Hume), c causes e if and only if e regularly follows c. There might be a case, however, where one cause c might regularly produce two temporally distanced effects: e_1 at t_1 and e_2 at t_2; in such a situation, e_2 follows regularly e_1 (assuming, of course, that c happens), but from this it does not follow that e_1 would be the cause of e_2. As we will see, there will be some connections between the relation of copy and that of causation and some lessons from the causation debate could be applied to the case of the copying relation.

A simple way to fix the similarity approach might be that of adding *intentionality* to the recipe. One can enrich (C0) in this way:

(C1) x is a copy of y iff (i) x is perfectly similar to y and (ii) x is a product of intentional actions.

(C1) has the effect of limiting the domain of the copying relation to the products of (human) intentionality. There are no natural copies, according to (C1). But limiting the relation of copying might be problematic: after all, there are well-understood cases of copying in the natural realm (e.g., DNA replication) and one might want one's own theory of copying be able to model also these natural cases.

Not only an appeal to intentionality is unduly restricting, but a simple appeal to intentionality does not solve our problems: as we have seen for the case of nails, it is not difficult to imagine a scenario where two perfectly similar objects are the product of two separate and independent intentional actions and nonetheless are not in the relation of copy with one another.

Furthermore, (C1) (and thus an appeal to intentionality) is not able to solve the problem of the common original: two copies of a common original are in fact the product of a single set of intentional actions, they are perfectly similar to the original and thus between themselves, but,

again, one is not the copy of the other. Limiting the domain to the realm of intentional objects does nothing to avoid the euclidicity of the similarity relation, so the countexamples remain untouched by the new definition.

A way to solve the problem of the common original is by making explicit that the copying relation gives rise to a form of *dependence* between a copy and its original:

(C2) x is a copy of y iff (i) y is perfectly similar to x, (ii) y depends on x.

According to (C2), an object which is a copy is a copy of something else on which, somehow, depends. By means of (C2), we could solve the problem of the common original. Two copies of a common original does not typically depend on each other, so, though perfectly similar, they cannot be copies of one another. The appeal to dependence solves in a natural way also the problem of accidental copies: two accidentally similar objects are not in a relation of copying, because they typically do not depend on each other.

While dependence seems thus apparently essential to characterise the relation of copying, its nature in (C2) should be better characterized, on pain of vagueness.

In current philosophical debate, the notion of dependence is hotly debated and discussed and there are various kinds of dependence relations available on the market: from various forms of ontological, conceptual, historic, counterfactual or causal dependence [2] to other kinds of dependence relations such as grounding or supervenience[2]. What is the right notion of dependence for the copying relation?

Aim of our short paper is, firstly, to show that it is not easy to select the right flavour of dependence needed to define the copying relation. Secondly, we hope to made explicit some constraints on an adequate characterization of the copying relation in terms of dependence.

2. Forms of Dependence and Copies

Let us consider, first, *ontological* or *existential* dependence. In general, an object x is said to be ontologically dependent on another object y in case, necessarily, x exists only if y exists and it is not the case that, necessarily, y exists only if x exists (Lowe [3], Correia [4]). A typical example of ontological dependence is that between a set and its members: necessarily, a set exists only if its members exist and it is the set that is ontological dependent on its members, not vice versa.

Applying this definition to the relation of copying we will obtain the following:

(C3) x is a copy of y iff (i) y is perfectly similar to x, (ii) necessarily, x cannot exist unless some original object y does and it is not the case that, necessarily, the original y exists only if x does.

The problem with (C3) is that two objects might be in a relation of copying without any of them being in a relation of existential dependence with the other. In particular, the copied object, once it is created, is an *ontological independent* object from the original. The original could go out of existence, but the copied object would still continue to exist. The existence of a copying relation between x and y does not force the necessary co-existence between x and y. One could copy a painting and then destroying the original: the copy would still be the copy of

the original painting and it can exist independently from it; thus, it would not be ontological dependent on it. Ontological dependence seems to be too strong. Another form of dependence is needed.

One might try with a weaker form of dependence. Let us consider, for example, *counterfactual dependence*. An object x counterfactually depends on y just in case the following counterfactual conditional is true: if y had not existed, x would not have existed. Counterfactual dependence is often used to define *causal* forms of dependence. For Lewis, for example, c is a cause of e if and only if there is a causal chain between c and e where a causal chain is a series of counterfactual dependence relations connecting c and e (see Lewis [5]).

Applying the counterfactual dependence to the definition of copying we will obtain the following:

(C4) x is a copy of y iff (i) y is perfectly similar to x, (ii) had y not existed, x would not have existed.

According to this definition a certain sword is a copy of, say, Alexander the Great original sword in case, not only it is perfectly similar to the original, but also it is counterfactually dependent on the original sword: had the original sword not existed, neither the copied sword would have existed. This seems plausible, at least *prima facie*: a copied object would not have existed, if the original object from which it is copied had not existed.

The advantage of counterfactual dependence over existential/ontological dependence lies in that it does not require necessary co-existence to obtain. Of course, copy and original must exist in the actual world, but then the only thing required is that, in all *relevant* worlds/possibilities, the non-existence of the original brings with it the non-existence of the copy. All other cases are admitted: there might worlds where the original ceases to exist, but the copy continues to exist or even worlds where the original exists, but not the copy. The counterfactual approach to copy basically captures the idea that a copy must be similar to the original and exists *because* the original exists.

There is something to say about the restriction on "relevant" worlds whose mention is needed to understand the relation of counterfactual dependence: in the standard, Lewis's semantics ([6]) for counterfactuals (and thus in the analysis of counterfactual dependence used in (C4)) the restriction on relevant worlds has to be intended as a restriction over most *similar* worlds to the actual world.

In (C4) there is thus a double commitment to similarity: there is the "perfect similarity" mentioned in clause (i), which is a relation of similarity between objects, but there is another kind of similarity, *overall similarity among possible worlds*, needed to make sense of the relation of counterfactual dependence.

There are at least two possible problems for a counterfactual understanding of the copying relation. The first is that the relation of counterfactual dependence tends to overgeneralise. There might be two perfectly similar objects in a counterfactual dependence relation between each other, but not because they are in a copying relation between each other. Consider, for example, a mathematician, call him "Jack", who proves a certain theorem *only because* he comes to know that another mathematician, call him "Jones", has proved it. Assume that Jones's proof is not yet published and nobody has ever seen the actual proof. The existence of Jack's proof is

thus counterfactually dependent on the existence of Jones's proof. The former would not have existed, had the latter not existed. But as it happens and unbeknownst to both mathematicians, Jack's proof is perfectly similar (in an intuitive sense in which two proofs could be perfectly similar) to Jones's proof. In such a case, the similarity would be a matter of mere coincidence. The two proofs are thus in a relation of perfect similarity and in a relation of counterfactual dependence, yet we would not say that Jack has copied Jones's proof and/or that Jack's proof is a copy of Jones's proof.[2]

The other problem is the idea on which such an understanding of the copying relation is based, namely that the copied object exists *because* the original exists. This might suggests the idea that it is the identity of the copied object that depends on that of the original object, that the copied object could not exist unless they are the copy of the original object. *Being a copy of* does not seem to be an essential relation. From the fact that x is a copy of y, it does not follow that, in every world where x exists, x is a copy of y. It seems plausible to assume that the sword that *in this world* is the copy of Alexander the Great original sword is not necessarily a copy of that sword in every other world where it exists: there might be (relevant) worlds where the sword is a copy of other swords (perfectly similar, but not identical to Alexander the Great sword) or worlds where such a sword is not a copy of any sword.[3]

The existence of a relation of copying in this world between two objects does not seem to imply any modal consequence for the objects involved, or at least not the modal consequences required by counterfactual dependence.

Something even weaker than counterfactual dependence is thus needed. The kind of dependence needed should make two entities dependent on each other (modulo perfect similarity), but without imposing too much "modal force" on this kind of dependence. *Historical dependence* might be of some help. According to A. Thomasson [7, p. 31]):

> Historical dependence is at hand in cases in which one entity requires another in order to come into existence initially, although it may be able to exist independently of that entity once it has been created. This variety is weaker than constant [ontological] dependence, because it does not require that the supporting entity be present at all times that the dependent entity is.

From this rough characterisation, it emerges that historical dependence is a *mundane* kind of dependence: two entities are in a relation of historical dependence in case there is an existential

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[2]We would like to warmly thank a referee for suggesting a counterexample to the counterfactual conception of copying along the same lines. In our example, we have applied the notion of perfect similarity to abstract entities such as proofs. Admittedly, it might be problematic to specify exactly what it means for two abstract entities to be perfectly similar, but we think that, as far as our example is concerned and in the special case of proofs, the notion is quite comprehensible.

[3]A referee suggests that a sword, existing in w_i which is not designed to be a copy of Alexander the Great's sword, could not be the same sword existing in the actual word w^* which is instead designed to be a copy of Alexander the Great's sword. We do not share this intuition which is based, we think, on the wrong assumption that the property of *being designed to be the copy of Alexander the Great's sword* is an essential property of a certain sword. In general, we think that, while some intentional properties might be fundamental for the identity of (artifactual) objects, intentional properties *like these* should not be taken to determine their identity. If the sword in w_i and the sword in w^* are made of the same material, have the same constituent parts and are designed to be swords, why should not they be taken to be the same object?

dependence between them *in the actual world*. This kind of historical, existential dependence does not necessarily have any modal consequences: in particular, it does not require that the two entities necessarily co-exist, nor that they co-exist in the class of most relevant worlds. Notice, however, that historical dependence is not incompatible with such kinds of modal-existential forms of dependence. If x is ontologically or counterfactually dependent on y, then x also historically depends on y, but the converse does not necessarily obtain: there might be totally contingent relations of historical dependence that do not give rise to any kind of ontological or counterfactual forms of dependence. The fact that an object has been contingently produced (in case of artifacts) or has been generated (in case of natural objects) as a result of a copying procedure *in this world*, does not force the conclusion that such an object could not have come into existence or produced if not as a result of such a procedure.

The copying relation could thus be understood in terms of historical dependence by means of the following definition:

(C5) x is a copy of y iff (i) y is perfectly similar to x, (ii) x historically depends on y.

3. The Problem of Copies without Originals

In all cases discussed so far, we have assumed that the copying relation should be treated as a kind of object-to-object relation. A copied object is a copy of a *specific* original object. In current terminology, this is expressed by saying that we have treated the copying relation as a *rigid* relation. In general, a relation of dependence is rigid in case its relata are specific objects (e.g., the relation between a non-empty sets and its members, the relation between a material objects and its constituents parts).

However, the situation might be more complicated than this and, if it is, this could put some pressure on the definitions we have given. The copying relation might be a non-rigid relation or at least, not necessarily rigid (a dependence relation is not necessarily rigid in case there are possible cases where the relata of such a relation are not objects).

In particular, there seems to be plausible cases of copied objects that are not copies of some specific objects. Consider those particular instances of copies which are *counterfeits*. A counterfeit is typically a copy of an original, specific, object, falsely presented as an original object, but there seems to be counterfeits that are copies, but not copies of an object. Consider the notorious case of the forged Vermeers made by Van Meegeren. As laid out in most art history textbooks, Han van Meegeren was a Dutch painter who decided to prove his talent by forging paintings of some of the most famous artists, including Johannes Vermeer. He replicated so well the style and colours of the artist that the best critics and experts of the time regarded his paintings as genuine Vermeers. The forged Vermeers made by Van Meegeren, however, were not copies of some specific original painting made by Veermer, even though they quite clearly count as copies of Veermer.[4]

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[4]We surely understand – and in part share – the qualms of one of the referees about the forged Vermeer's case: one could, in effect, claims that the Vermeer case is not a case of a copied object, because the forged Vermeer is not a copy *of anything*. Our intuition in this case is that, while the forged Vermeer is surely not a copy of some object, it could still be considered, in some sense – to be further specified – a "copied object": a counterfeit is usually considered a copied object. Our proposal is that the sense in which an object could be copied without being the

If such cases are accepted, all rigid definitions of the copying relation become problematic, or, at least, not able to cover all cases in which we wish to apply such a relation. A solution might be to use a *non-rigid* notion of dependence; in general, non-rigid dependence might be defined as a relation between an object and a *sortal*: in general, x non-rigidly depends on F if and only if x depends on the existence of some object that is F.

By means of non-rigid dependence we may define a corresponding notion of historical, non-rigid dependence by means of which we could solve the Van Meegeren cases. A painting by Van Meegeren is a copied object not because there exists some specific object of which it is a copy and with which is in a relation of historical dependence, but because there exist some paintings that instatiate a sortal like "paintings in the style of Veermer" that the copied object somehow "imitate". The notion of "imitation of an object instatiating a sortal F" should substitute, in such non-rigid characterisation of the copying relation, the notion of perfect similarity.

4. Conclusions

In this paper, we have defended the view that the copying relation should be defined also by means of a dependence relation and not simply by means of similarity. The problem, however, is to understand what kind of dependence is the right one. We have emphasised the difficulties of using ontological or counterfactual dependence. The problem with them is that they seem to have too much modal force. We have then defended, at least provisionally, the idea that a notion of historical dependence might do the work needed. Ontological, counterfactual and historical dependence, at least in the way in which we have characterised them, share a common element: they all are rigid kinds of dependence. If the copying relation is defined in terms of them, it becomes thus a rigid relation as well. In the final section of the paper, we have discussed the idea that there might be non-rigid kinds of copying relation, where an object is not a copy of some specific object, but of objects instantiating some sortal property.

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copy of some specific object could be captured, at least partially, by means of a non-rigid notion of dependence and a corresponding non-rigid notion of copying. This would reinforce the main point of this short paper, according to which there are interesting relations between copying and dependence.