Trope Bundle Theory

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Abstract The aim of this paper is that of analysing trope bundle theory, its promises and some of its problems. First of all, it will begin by showing what trope bundle theory is, its development and its undoubted appeal. Then, it will focus on two problems that affect this theory, both concerned with the relation of compresence invoked in order to explain what a material object is by the bundle theory. Finally, it will take one possible view to avoid one of the aforementioned problems into consideration and it will claim that this view does not seem to be convincing enough to adopt trope bundle theory.

Trope theorists hold that properties and relations are particulars rather than universals. In the history of Western philosophy the thought of properties and relations as particulars was minor. Traces of it can be found in Aristotle, in medieval nominalism, in the authors of English empiricism and in Leibniz. During the past century this thought became popular once again through the works of the pioneer Donald Williams and Keith Campbell. The word trope was used by Williams for the first time to denote the ‘occurrence of an essence’. According to Williams, tropes are primitive and fundamental entities, they are the ‘alphabet of being’. Campbell defines tropes as ‘abstract particulars’ in his homonym book: this definition appears to be revolutionary in that it breaks the traditional nexus between an abstract-universal and a concrete-particular.

In order to understand what a trope is better, let us have a look at terminology. To say that an entity is universal means that it can be instantiated in different particulars at the same time and that it is wholly present in each of its instances. To say that an entity is particular means that it can be exemplified only by an instance since it has a specific space-time location. Thus,

1[8], [3].
2Williams takes this word from Santayana reversing its meaning. In fact, Santayana considers a trope as the ‘essence of an occurrence’.
to say that tropes are particulars is to say that there are as many tropes as exemplifications. For example, consider a property such as the redness of a particular car: it cannot be identified with the redness of any other red car, every red car possesses its own property of redness since each trope is a particular with an independent existence. On the contrary, universalists claim that the red of this particular car joins the universal property of redness. To make another example, consider a relation, such as that of being in love that links Dante with Beatrice: while a universalist would say that Dante’s love joins the universal relation of being in love, a theorist of tropes would say that it is a particular love that pertains only to Dante and Beatrice.

There are two distinct ways of defining the difference between abstract and concrete entities. The former consists of a spatiotemporal definition and it can be stated as follows: an entity is abstract if it does not exist in space and time while an entity is concrete if it exists in space and time or at least in time. Of course it is not the meaning adopted by the majority of trope theorists since they believe that tropes are entities that exist in space and time. The other way to define the difference between abstract and concrete entities holds that an entity is abstract if it is ontologically dependent, that is to say, it cannot exist separately from the object to which it belongs. On the contrary, concrete entities have an independent existence.

There are many theories on tropes. This paper will focus on the classic theory, namely, the bundle theory, which is the most adopted and the most attractive in that it promises a one category-ontology. In fact, the bundle theory completely refuses universals, it considers tropes as the basic element of being, which constitute all other entities. From what has been said, there are two questions that naturally arise and to which trope bundle theorists are called to answer: 1) what general terms and predicates denote? 2) What substances and material objects denote?

Trope bundle theory holds that predicates and general terms are classes of resembling tropes. Unlike resemblance among material objects, which is thought to be resemblance to some respects, tropes resemble each other simpliciter, even if there are different degrees of similarity. For example, take three red tropes: $a$, $b$, $c$. They can be compared only in one respect, that of colour, but the redness of $a$ can resemble the redness of $b$ to a higher degree than the redness of $c$. The highest possible degree of resemblance is that of ‘exact resemblance’. As it is easy to see, the relation of exact resemblance is a transitive relation: in fact, if trope $a$ and trope $b$ resemble each other to the

\footnote{Campbell uses this definition in [3]. See also [6], and [4], chapter 20, p. 366-367.}

\footnote{In [2] Armstrong considers that of exact resemblance as a very promising notion since it represents a broad and popular meaning of the expression of ‘being the same’.}
highest degree, and trope \( b \) and trope \( c \) resemble each other to the highest degree too, it naturally follows that trope \( a \) and trope \( c \) resemble each other to the highest degree.

That of resemblance is considered by trope theorists as a primitive relation. Campbell says that it is not an ordinary relation but an internal relation: in fact, resemblance among entities completely depends on facts about the properties of those entities. For example, to say whether or not two substances resemble each other in respect to their colour depends only on the colour of the substances in question. If one considers resemblance as an internal primitive relation, it is easy to avoid the critique that resemblance leads to a vicious or an infinite regress.

In responding to the second question (what a substance or a material object is intended to denote), trope theorists claim that material objects are bundles of compresent tropes. This answer creates some important problems for the bundle theory, which concern the relation of compresence. In particular, this paper will consider two main issues. The former concerns the fact that the compresence relation can lead to a vicious or an infinite regress. This point is clearly explained by Peter Simons who in his *Particulars in Particular Clothing: Three Theories of Substance* writes:

> Since normal substances have many tropes, there must be many compresences all of which are compresent in order to build up a single substance. So we account for the bundling of the initial tropes by bundling of the compresence relation, which raises exactly the same problem we had to start with, but in a more rarefied level.

One way of avoiding this problem could be that of considering compresence as an internal relation, as we did for resemblance. However, in this case this solution does not seem to work: in fact, unlike resemblance, compresence could be regarded as an internal relation only in some circumstances, which are those where tropes have to co-occur, but not in others, which are those where tropes belong to the bundle contingently. To describe this latter situation Simons says: ‘not that they (tropes) could be elsewhere, but that that substances might be otherwise, and indeed can change’. Every time a substance changes one of its properties, a trope is replaced by another trope: this means that the relation of compresence, that links tropes to make a substance, is not essential. For instance, consider an object, such as a leaf:

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\(^5\)Here I take the relation of compresence as a two-places relation.

\(^6\)[6], p. 558.

\(^7\)[6], p. 558.
it has a particular colour trope $C$ and a particular shape trope $S$. Now it is possible to imagine that the leaf changes its colour (for example in autumn), but not its shape, and the other way round (for example if it is cut). In both cases the leaf continues to exist as the result of a bundle of compresent tropes: in the first case with the same shape trope $S$ and with a different colour trope $C_1$, while, in the other case, with the same colour trope $C$ and with a different shape trope $S_1$. This example shows that the fact that $C$ and $S$ are compresent does not depend completely on $C$ and $S$, and thus that compresence is not an internal relation.

The second objection, which belongs to Armstrong, threatens the bundle theory seriously since it puts the assumption that objects are concrete entities in doubt\(^8\). It is possible to present the argument as follows: if different tropes can occupy the same place -and of course they can, given that objects are nothing more than bundles of compresent tropes- nothing prevents tropes of the same kind from being compresent in the same place and thus tropes of the same kind that resemble each other exactly. But, from this it follows that it could be possible to have more than a bundle of tropes (all indistinguishable among each other) in correspondence to a material object.

To get a grasp of this point, consider a material object, for example an apple: for bundle theory it is the result of different compresent tropes (its colour trope, its shape trope, its taste trope...). Now, from what has been said before, it is possible to imagine that this same bundle could be compresent with another (or more) perfectly indistinguishable from it: there would be a colour trope that exactly resembles the colour of the first trope, a shape trope that exactly resembles the shape of the first trope, and so on. The result would be that instead of one single apple it is possible to have indistinguishable $n$-apples. To face this problem, trope theorists need to clarify which are the conditions of the individuation of tropes.

There are two ways to individuate tropes, in my opinion both unsuitable to overcome problems related to the bundle theory. The standard and most common way is founded on tropes thisness: this redness, this squareness, and so on. This is the quantitative individuation principle (QI) and it can be stated as follows:

$$x \text{ and } y \text{ are distinct tropes iff they are primitively quantitatively distinct}^{9}.$$  

However, as it is easily visible, (QI) is absolutely unsuitable to stop the objection stated above. In fact, Armstrong founded his critique having this

\(^{8}\)\cite{1}.

\(^{9}\)\cite{5} p. 248.
principle in mind.

The other way to individuate tropes was proposed by Schaffer\textsuperscript{10}. He finds it misleading to present a trope as a quality of a particular object. In fact, he says, trope theorists hold that objects are entities deriving from tropes and thus, the individuation of tropes has to be independent from objects. What he proposes is a spatiotemporal individuation principle (SI):

\[ \text{x and y are distinct tropes iff they are either not exactly resemblance, or at distant location (Distance x-y > 0)} \]

Thus, according to (SI), trope identity is given by the conjunction between exact resemblance and colocalization. It is easy to see how, by appealing to this definition of trope individuation, it seems possible to avoid Armstrong’s objection. In fact, what follows from (SI) is the possibility for different kinds of tropes (such as those of colour and shape) to be compresent in a bundle in order to build a particular substance, and the impossibility for non-identical tropes of the same kind to be compresent in a bundle.

So, what goes wrong with (SI)? The problem related to the aforementioned principle is the following: it does not seem that there is any strong motivation for using it apart from the fact that it allows to avoid some important critiques of the bundle theory, such as that of Armstrong\textsuperscript{12}. So, (SI) does not seem to be convincing in that it seems to be built \textit{ad hoc}. In conclusion, what this paper claims is that theorists of trope bundle theory need to answer to the problems related to the theory that they support in a much convincing way. Only after doing this, there will be the possibility of considering a one-category ontology.

References


\textsuperscript{10}[5].
\textsuperscript{11}[5], p. 249.
\textsuperscript{12}see [7], p. 29.

