

# **M E T A P H Y S I C A**

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# Identity Puzzles and Supervenient Identities

## Abstract

This paper argues that each of the so-called puzzles of the ship of Theseus, of Tibbles-and-Tib, and of the Statue-and-its-matter has a straightforward solution within ontologies that allow Aristotelian form-matter dualities and what is dubbed “supervenient numerical identity”. All three puzzles are concerned with part-to-enduring-whole problems, in turn, exchange of parts, loss of a part, and having as a constitutive part the same matter as another entity. In the light of the solutions put forward, these identity puzzles appear to be strong arguments against nominalism and reductive materialism. They point towards the view that the world contains real non-reducible enduring supervenient entities.

## 1. *The puzzle of the ship of Theseus*

The relation of supervenience has primarily been discussed in relation to properties (qualities) or sets of properties. The paradigmatic claims have been that the property of moral goodness supervenes on natural (non-evaluative) properties, and that mental properties supervene on physical properties.<sup>1</sup> Sometimes, supervenience has been discussed also in relation to sortals and claims such as “cells supervene on molecules and molecules on atoms”.<sup>2</sup> As will be shown in this paper, however, the supervenience relation is also of relevance for problems of enduring *numerical* identity. As the point of departure for this undertaking, I will use the old puzzle of the ship of Theseus:

Over a period of years, in the course of maintenance a ship [the original ship, O] has its plank replaced one by one – call this [renovated] ship A. However, the old planks are retained and themselves reconstituted into a ship – call this ship B. At

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<sup>1</sup> For an overview of analyses of supervenience, see Ingvar Johansson, “Hartmann’s Nonreductive Materialism, Superimposition, and Supervenience” (2001), sections 2–6, and “Critical Notice of Armstrong’s and Lewis’ Concepts of Supervenience” (2002).

<sup>2</sup> Johansson, “Hartmann’s Nonreductive Materialism, Superimposition, and Supervenience” (2001), section 1.

the end of the process there are two ships. Which one is the original ship of Theseus?<sup>3</sup>

It might seem natural to identify a ship with the collection of its material parts plus the mutual spatial relations that these parts enter into when they are put together in such a way that a ship is created. Where is the ship, if not where its material parts are? However, if Theseus' ship is so identified, then the reconstituted ship (B) is necessarily identical with the original ship (O), but this view has at least two quite counter-intuitive consequences. First, it means that the ship of Theseus has an intermittent existence; originally, it is ship O, then it disappears for a while, and then it reappears as ship B. Second, despite the functional continuity between the ships O and A, ship A is not Theseus' ship.

For my purposes, it is of no importance that the puzzle is stated in relation to an artifact and not in relation to an organism. In today's heart transplants, the transplanted heart is for some time kept "alive" in a solution outside both the bodies involved, and it is in principle possible to do so with all the parts of at least simpler organisms. On this basis, one can construe the Theseus-puzzle in relation to an organism, too.<sup>4</sup> One might even say that nature itself poses us parts of such a puzzle. The major part of human organisms is made up of cells,<sup>5</sup> and the major part of all the cells are such that old cells die and new cells are born all the time.<sup>6</sup> However, the old cells do never reconstitute another organism.

I would now like to present the traditional puzzle as follows. Let us assume that ship O consists of thousands bits of planks and sail fabric,  $p_1$  to  $p_{1000}$ , and let us call the new corresponding bits, which make up ship A,  $q_1$  to  $q_{1000}$ . If we let the expression "Ship O<sup>+1</sup>" be short for "ship O with one part exchanged for a new one", and if we symbolize the spatial connections between the parts with "+", we can argue as follows:

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<sup>3</sup> Michael Clark, *Paradoxes from A to Z* (2002), p. 184.

<sup>4</sup> For this reason, I find Peter van Inwagen's comments on the Theseus-puzzle to be beside the point. He regards organisms as real material beings but all artifacts (e.g., Theseus) and ordinary inanimate visible objects as merely virtual; see his *Material Beings* (1990).

<sup>5</sup> Exceptions are: fluids such as the cerebrospinal and the synovial, and dead matter such as the nails and the shafts of the hair.

<sup>6</sup> Exceptions are some millions of brain neurones, which are with us from birth to death; in females, all the egg-cells are there from the start.

- (i) Assume that a ship is identical with its material parts and their mutual spatial relations:  
Ship  $O = (p_1 + p_2 + \dots + p_{1000})$ .
- (ii) When  $p_1$  is exchanged for  $q_1$  a ship  $O^{+1}$  emerges:  
Ship  $O^{+1} = (q_1 + p_2 + \dots + p_{1000})$ .
- (iii) Assume that ship  $O$  preserves its identity when  $p_1$  is replaced by  $q_1$ :  $(p_1 + p_2 + \dots + p_{1000}) = \text{Ship } O = \text{Ship } O^{+1} = (q_1 + p_2 + \dots + p_{1000})$ .
- (iv) Since  $p_1 \neq q_1$ , but statement (iii) entails that  $p_1 = q_1$ , we have a *reductio ad absurdum* of the conjunctions of the assumptions spelled out in (i) and (iii).

Either assumption (i) is false or (iii) is false; either a ship cannot be identified with the collection of its material parts and their mutual spatial relations or it cannot be repaired; at least not by replacing old pieces of material with new ones. The logically possible third view, that both (i) and (iii) are false, I will not consider. It seems too odd. This puzzle of the ship of Theseus can profitably be compared with a story that might be called the *non-puzzle* of the organization of Theseus:

Over a period of years, an organization for promoting interest in philosophy, created by Theseus and called  $O$ , has its members replaced one by one – call this [“renovated”] organization  $A$ . However, the old members are still living and one day they create a new but similar organization for promoting interest in philosophy – call this organization  $B$ . At the end of the process there are two organizations. Which one is the original organization created by Theseus?

Here, the answer is simple: organization  $A$  is identical with the organization  $O$ , since an organization is not identical with the collection of its members and their mutual organizational relations. An organization can lose and gain particular members while retaining its numerical identity. Therefore, let us apply to the organization  $O$  the argumentation schema (i)-(iv) used above in relation to the ship  $O$ , and see what the conclusions are this time. Now, the variables  $p$  and  $q$  become variables for members, “+” symbolizes mutual organizational connections, and “Organization  $O^{+1}$ ” is short for “organization  $O$  with one member exchanged for a new one”:

- (i) Assume that an organization is identical with its members and their mutual organizational relations:  
Organization  $O = (p_1 + p_2 + \dots + p_{1000})$ .
- (ii) When member  $p_1$  is exchanged for  $q_1$ , an organization  $O^{+1}$  emerges: Organization  $O^{+1} = (q_1 + p_2 + \dots + p_{1000})$ .
- (iii) Assume that organization  $O$  preserves its identity when  $p_1$  is replaced by  $q_1$ :  $(p_1 + p_2 + \dots + p_{1000}) = \text{Org. } O = \text{Org. } O^{+1} = (q_1 + p_2 + \dots + p_{1000})$ .
- (iv) Since  $p_1 \neq q_1$ , but statement (iii) entails that  $p_1 = q_1$ , we have a *reductio ad absurdum* of the conjunctions of the assumptions spelled out in (i) and (iii).

In contradistinction to the ship case, this *reductio* gives rise to no puzzle at all. Assumption (i) is false and assumption (iii), i.e.,  $\text{Org. } O = \text{Org. } O^{+1}$ , is in all probability true. Our views on the identity of organizations seem to be more simple and straightforward than our views on the identity of ships. In the latter case there is, as noted by Peter Simons, a certain tension. In a comment on the puzzle of Theseus he writes:

We must recognize that the sortal concepts associated with terms like ‘ship’ in everyday life constitute a working compromise between two opposing tendencies. One tendency is to link the identity of a material continuant with the identity of its matter:  $x$  is identical with  $y$  only if the matter of  $x$  is identical with the matter of  $y$ . The other tendency is to link the identity of a material continuant with the identity of its form:  $x$  is identical with  $y$  only if the form of  $x$  is identical with the form of  $y$ . [...] Instead of attempting to dispel the tension, let us simply use it. [...] So in addition to the sortal ‘ship’ we suppose there are two other sortal terms, ‘matter-constant ship’ and ‘form-constant ship’.<sup>7</sup>

I will develop this proposal and at the same time bring in relations of supervenience. Simons is introducing Aristotelian form-matter thinking. According to such metaphysics, an entity like a ship can be *constituted* by some matter (meaning: some material parts and their mutual spatial relations) without being identical with this matter; not even if the ship and the matter completely *coincide* in space and time.<sup>8</sup> In what follows, I will take

<sup>7</sup> Peter Simons, *Parts* (1987), pp. 199-200.

<sup>8</sup> It should be noted that such ontologies are, both in principle and in Aristotle, not confined to two levels. On top of one form-matter unity there might be another form, and the matter itself might be constituted by both form and a lower-level-kind of matter.



the existence of such a constitution relation – which is asymmetrical and posits coinciding objects – for granted.<sup>9</sup> This constitution relation must not be conflated with any of the supervenience relations that will be introduced in section two. On the assumptions now stated, there are in the puzzle of the ship of Theseus three kinds of enduring identities to be discussed:

- (a) form-constant ships
- (b) matter-constant ships
- (c) form-and-matter-constant ships (or, simply, ships).

Trivially, ship B is matter-identical with ship O, since B is constituted by the matter of ship O in the same kind of spatial relationships; ship A is neither matter-identical nor (therefore) form-and-matter-identical with ship O. But is it ship A or ship B that is form-identical with ship O? Or, is perhaps none of them identical with O? If ship A is form-identical with ship O, then it is *only* form-identical with O, whereas if ship B is, then B is also form-and-matter-identical with O. The questions posed are questions about enduring *numerical* form-identity, i.e., about instances or tokens of forms. By assumption, all the three ships are – both with respect to form and matter – *qualitatively* identical. It is, in what follows, important to keep in mind either a distinction between universals and particulars or a corresponding distinction between types and tokens.<sup>10</sup> The concepts of “form”,

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Instead of “Aristotelian form-matter metaphysics”, one may speak of “level ontologies”; see e.g. Johansson, *Ontological Investigations* (2004), chapters 2 and 9.3.

<sup>9</sup> For elaborate defenses of such a relation of constitution, see Simons, *Parts* (1987), chapters 4.6-7, 6.1, and 6.5; Lynne Rudder Baker, *Persons and Bodies. A Constitution View* (2000), chapter 2; E. J. Lowe, *A Survey of Metaphysics* (2002), chapter 4. See also Johansson, *Ontological Investigations* (1989, 2004), pp. 134-136, and Barry Smith, “On Substances, Accidents and Universals. In Defence of a Constituent Ontology” (1997). Baker, remarkably, regards her view as anti-Aristotelian; see also note 16.

<sup>10</sup> I regard all the three kinds of numerical identities distinguished as being absolute identities in the sense defined by David Wiggins, *Sameness and Substance* (1980), chapter 1.1. Each identity spoken of relates to one particular only. None of the particulars spoken of can have different (relative) identities in relation to different sortals, since the sortal instances referred to (form as well as matter) are constitutive parts of the particulars in question. The form-and-matter identity is an instance of a complex unity that has the form-instance and the matter-instance in question as parts; this identity is complex *and* absolute, not relative. Compare the matrix that follows after the next sentence. I regard the view I will put forward as being consistent with Wiggins’ remarks on the ship of Theseus; op. cit. pp. 72-73 and 90-96.

“matter”, and “form-matter unity” are, out of context, ambiguous in the way shown in the following matrix:

|                     | “form”                | “matter”              | “form-matter unity”    |
|---------------------|-----------------------|-----------------------|------------------------|
| Universal<br>(Type) | form of<br>kind F     | matter of<br>kind M   | unity of<br>kind U     |
| Particular (Token)  | instance of<br>kind F | instance of<br>kind M | instance of<br>unity U |

Form-matter metaphysics lends itself easily to representations by means of (non-mathematical) operator symbolism, the operators representing forms and the variables operated on representing matter. If one lets the expressions “ ${}^T O$ ”, “ ${}^T A$ ”, and “ ${}^T B$ ” refer to instances (tokens) of the sortal (type) ship-of-Theseus-form (T) and the matter pieces  $p_n$  and  $q_n$  be instances of matter of the same kind,  $M_n$ , then the claims and questions of the last paragraph can be represented thus:<sup>11</sup>

- (1) ship O =  ${}^T O$  ( $p_1 + p_2 + \dots + p_{1000}$ )
- (2) ship A =  ${}^T A$  ( $q_1 + q_2 + \dots + q_{1000}$ )
- (3) ship B =  ${}^T B$  ( $p_1 + p_2 + \dots + p_{1000}$ )
- (4) Is  ${}^T A = {}^T O$  ?
- (5) Is  ${}^T B = {}^T O$  ?

Ship O is *constituted* by its matter ( $p_1 + p_2 + \dots + p_{1000}$ ) and its instance of the form T ( ${}^T O$ ); the three spatiotemporal entities referred to by means of “ship O”, “ ${}^T O$ ”, and “( $p_1 + p_2 + \dots + p_{1000}$ )”, respectively, are more or less *coinciding entities*.<sup>12</sup> Partly, the puzzle of Theseus is due to a tendency of ours sometimes to reduce the complex form-and-matter unity  ${}^T O(p_1 + p_2 + \dots + p_{1000})$  to a mere matter unity, i.e., to think that “Ship O =  ${}^T O(p_1 + p_2 +$

<sup>11</sup> If genus-species talk is allowed in relation to artifacts, then, in this presentation, “ship” is a genus and “T” is a species of this genus. The statements (1) to (5) are about instances (tokens) of T.

<sup>12</sup> Ship O and  ${}^T O$ , on the one hand, and ( $p_1 + p_2 + \dots + p_{1000}$ ), on the other, are only “more or less coinciding” since a ship has cavities as essential parts. A ship cannot be wholly identified with its material parts and their mutual spatial relations; see Roberto Casati and A. C. Varzi comments on the ship of Theseus in *Holes and Other Superficialities* (1995), pp. 130-131. The solution that I will propose is compatible with the view that ships have “holes” as parts, whereas the view that Theseus is only a collection of planks and sail fabric in a certain spatial configuration is not.

$\dots + p_{1000}) = (p_1 + p_2 + \dots + p_{1000})$ ”, but I will argue that this tendency must be resisted. When so it is, the ship of Theseus becomes, from an ontological point of view, analogous to the organization discussed, which means that  ${}^T A = {}^T O$ . This is the conclusion to be reached, now the arguments.

## 2. Supervenience

The questions whether  ${}^T A = {}^T O$  or  ${}^T B = {}^T O$  are questions about the *numerical* identity of the particulars referred to. Nonetheless, I will start by making a detour to the traditional relation of supervenience, which relates *kinds* of properties or sortals (including kinds of *forms* in the sense distinguished); set-theoretic formulations of supervenience will not be taken into account. In the philosophy of supervenience, there are nowadays many different concepts and correspondingly denoted supervenience relations around, but it is R.M. Hare’s original non-reductionist conception that I will use. According to this, a supervenient property/sortal cannot be reduced to the properties/sortals on which it rests. As I have argued elsewhere,<sup>13</sup> Hare used, when he claimed that moral goodness supervenes on natural properties, two requirements explicitly (1 and 2 below) and two other requirements implicitly (3 and 4 below). If we apply this concept of supervenience to the sortal “(ship of) Theseus-form”, we get:

- *Definition of Supervenience for Theseus-form:*

The sortal Theseus-form supervenes on kinds of matter *if and only if* the following four requirements are met:

1. *The indiscernibility requirement:* Necessarily, if  $(p_1 + p_2 + \dots + p_{1000})$  constitutes a ship with an instance of a Theseus-form, and  $q_n$  is qualitatively identical with  $p_n$ , then  $(q_1 + q_2 + \dots + q_{1000})$  constitutes a ship with a Theseus-form, too.

2. *The non-entailment requirement:* Descriptions of  $p_1$  to  $p_{1000}$  and all the spatial relations these entities have to each other do not entail the description that  $(p_1 + p_2 + \dots + p_{1000})$  is a Theseus-form; or, speaking loosely by means of symbols, “ $p_1 + p_2 + \dots + p_{1000}$ ” does not entail “ ${}^T O$ ”.

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<sup>13</sup> Johansson, “Hartmann’s Nonreductive Materialism, Superimposition, and Supervenience” (2001), and “Critical Notice of Armstrong’s and Lewis’ Concepts of Supervenience” (2002).

3. *The multiple realizability requirement:* A Theseus-form may in principle be realized in at least two qualitatively different kinds of bases, i.e., even if a Theseus-form is realized in both  $(p_1 + p_2 + \dots + p_{1000})$  and  $(q_1 + q_2 + \dots + q_{1000})$ , the latter are not necessarily qualitatively identical.

4. *The existential dependence requirement:*<sup>14</sup> A Theseus-form cannot possibly have a spatiotemporal existence without resting on some matter; in other words: necessarily, if an instance of a Theseus-form  ${}^T\text{O}$  exists, then an instance of  ${}^T\text{O}(p_1 + p_2 + \dots + p_{1000})$  or  ${}^T\text{O}(q_1 + q_2 + \dots + q_{1000})$  or  ${}^T\text{O}(r_1 + r_2 + \dots + r_{1000})$  or ... exists.

As the ship of Theseus is traditionally described, the sortal Theseus-form meets these requirements: (1) if one of two qualitatively identical collections of material pieces (where also spatial relations are taken into account) is a ship, then the other collection is a ship, too; (2) from a mere description of the planks and fabric of the ship of Theseus, and their spatial relations to each other, one cannot deduce that they constitute a ship; (3) several parts of the ship might be exchanged for similar parts made of other materials without any reduction of its functional abilities, i.e., the functional form of the ship of Theseus can be multiply realized; and (4) there are no ghost ships. That is, the sortal Theseus-form is a supervenient sortal.

In relation to the last claim, I want to repeat: I am talking only of supervenience in Hare's sense. David Lewis identifies supervenience with only the indiscernibility requirement; David Armstrong turns the non-entailment requirement upside down into an entailment requirement from which, then, trivially, the indiscernibility requirement can be derived; Jaegwon Kim comes close to Hare, but he leaves the existential dependence requirement out.<sup>15</sup>

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<sup>14</sup> Note that this kind of ontological dependence is neither a direct ontological dependence between two particulars *as particulars* (often called *individual dependence*) nor a dependence where a particular *as particular* depends for its existence on objects of a certain type (often called *generic dependence*); for classic discussions of such ontological dependencies, see Simons, *Parts* (1987), chapter 8, and Lowe, *The Possibility of Metaphysics* (1998), chapter 6. The *existential dependence* relation used relates particulars that are *instances of universals*; it is presented in more detail in Johansson, *Ontological Investigations* (2004), chapter 9.

<sup>15</sup> See note 13, *op. cit.*

To be a supervenient sortal or property (quality) is to have certain kinds of existence conditions. Therefore, a general definition also of supervenience for instances (tokens, individuals) comes naturally: An instance of S supervenes on some base instances *if and only if* S is a supervenient property/sortal. In the case of Theseus' ship, we get:

- *Definition of Supervenience for an Individual Theseus-form:*  
An individual Theseus-form supervenes on its matter *if and only if* the sortal Theseus-form is a supervenient sortal.

From what has already been said, it follows that  ${}^T O$ ,  ${}^T A$ , and  ${}^T B$  are supervenient individual forms of the same kind; all three are instances of T.

As long as the supervenience relation is restricted to properties and sortals, it is clearly distinct from the relation of constitution, since the latter is usually regarded as a relation between particulars (tokens). But what is the difference between *individual* supervenience and constitution? One difference is the following: if an S supervenes on p, then p is not part of S, but if an S is constituted by p, then p is part of S. The pure Theseus-form instance,  ${}^T O$ , *supervenes* on  $(p_1 + p_2 + \dots + p_{1000})$ , but the whole ship O is *constituted* by  $(p_1 + p_2 + \dots + p_{1000})$  *plus* this supervening form instance. Since the pure form T can be realized in different kinds of matter, its instances, which are qualitatively identical, cannot possibly have the matter in question as parts. Since constitution is distinct from identity, there must be an entity that is, so to speak, the constituted whole *minus* its matter, namely a form instance.<sup>16</sup>

### 3. Supervenient numerical identity

We are now in a position to face the problem whether any of the supervenient individual forms  ${}^T O$ ,  ${}^T A$ , and  ${}^T B$  are, in fact, numerically identical. Let us first take a look at only the change whereby  $p_1$  is replaced by  $q_1$ . This change consists of two processes (taking away  $p_1$  and inserting  $q_1$ , respec-

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<sup>16</sup> This fact is seldom made clear in the literature on the constitution relation. Here, one often moves too fast from claiming, explicitly and rightly, that something (A) is constituted by something else (B) to claiming, implicitly and falsely, that A is constituted *only* by B. For instance, L. R. Baker writes quite correctly that "constitution must be distinguished sharply from supervenience" (*Persons and Bodies. A Constitution View*, p. 34), but she does not notice that a constituted whole nonetheless has to *contain* at least one supervenient entity. This neglect might be the explanation of why she regards her "constitution view" as being anti-Aristotelian; compare note 9.

tively) and three stages. The first question is what we are to say about the ship that exists when neither  $p_1$  nor  $q_1$  is there; let's call it "ship  $O^{-1}$ ". Is it a ship with a Theseus-form (T) or not? In symbols, we have two unproblematic assertions (about stages 1 and 3, respectively) and one question (in relation to stage 2):

$$\begin{array}{lll} \text{stage 1:} & \text{ship } O & = {}^T O (p_1 + p_2 + \dots + p_{1000}). \\ \text{stage 2:} & \text{ship } O^{-1} & = {}^T O^{-1} (p_2 + \dots + p_{1000}) ? \\ \text{stage 3:} & \text{ship } O^{+1} & = {}^T O^{+1} (q_1 + p_2 + \dots + p_{1000}). \end{array}$$

The four requirements for supervenience do not imply that the sum  $(p_2 + \dots + p_{1000})$  has to have a Theseus-form as a supervenient sortal; nor do the requirements imply that  $(p_2 + \dots + p_{1000})$  cannot be a base for such a form. In particular the requirement of realizability implies that there is no general answer to the question whether  $(p_2 + \dots + p_{1000})$  can be a base for a supervenient instance of a Theseus-form. This implication conforms well to common sense. What kind of ship ship  $O^{-1}$  is depends on what  $p_1$ , the piece that is taken away, is. If  $p_1$  is merely a little stick, there is still a Theseus-kind-ship, but if  $p_1$  is the main sail there is no longer such a ship. Let me now simply postulate that  $p_1$  is of such character that even ship  $O^{-1}$  is a ship with a Theseus-form, and then think through the consequences.

The assumptions now made imply the existence of a phenomenon that is well known and investigated in technology, medicine and linguistics, the existence of *redundancy*. Both in many machines and in many organisms there are functional redundancies; in language there is often information redundancy. In relation to a supervenient entity, one may talk of "base redundancy". If both  $(p_1 + p_2 + \dots + p_{1000})$  and  $(p_2 + \dots + p_{1000})$  can be a base for the same kind of supervenient ship form, then there is in the case of  $(p_1 + p_2 + \dots + p_{1000})$  redundancy of matter in relation to the supervenient ship form.<sup>17</sup> That is, the piece  $p_1$  is, *ceteris paribus*, redundant for the supervenience of the Theseus-form (thereby, it is redundant for the constitution of Theseus-kind-ships as well). The following principle can be stated:

- *The Possibility of Base Redundancy for Supervenient Qualitative Identity*: If an instance of kind S supervenes on  $(p_1 + p_2 + \dots + p_{1000})$ , it might be the case that  $p_n$  can be taken away but that nonetheless

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<sup>17</sup> The same point about redundancy can be made with "ship form" exchanged for the classical examples of supervenience, "moral goodness" and "mental event", too.

another or the same instance of kind S supervenes on the new base, too.

From what has already been said, it follows that ship O, ship O<sup>-1</sup>, and ship O<sup>+1</sup> have exactly the same *kind* of form; all three ships are instances of the same sortal. But are they also numerically form-identical? Where in time do instances of sortals begin and end? Since the whole puzzle of Theseus is presented in terms of enduring pieces of wood and sail fabric, one possible first-hand reaction is that ontologists should make a wholesale rejection of enduring entities. However, I will make the opposite. I will take it for granted that there can be, and are, in the world enduring entities.<sup>18</sup> Also, I will rely on the following somewhat commonsensical but often in ontology neglected principle:

- *The Requirement of Having a Boundary*: Every finite spatiotemporal entity has to have both spatial and temporal bona fide boundaries; be the entity a substance or merely an instance of a sortal or a property.<sup>19</sup>

It has been argued that there are no bona fide boundaries, but I will leave this curious view out of account.<sup>20</sup> Where there is a spatial or temporal boundary, there is a discontinuity located in a continuum, in continuous

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<sup>18</sup> For arguments against the view (four-dimensionalism) that there can be no enduring entities, see e.g. Lowe, *A Survey of Metaphysics* (2002), chapter 3.

<sup>19</sup> The fact that boundaries are of utmost importance in ontology has in contemporary philosophy been stressed mainly by Barry Smith. Going further back, there are R. M. Chisholm and Franz Brentano. Smith writes: “In order to arrive at a definition of substance, then, it is the notion of boundary which we shall need to take as our guiding clue (something that has not been done in standard treatments of substance in the literature of analytic metaphysics –”; from “Objects and Their Environments: From Aristotle to Ecological Ontology” (2001), pp. 79-97. Smith’s definition of substance draws on a distinction between substances in the narrow sense (such as one’s body), and substantial entities (such as one’s arm or one’s head). This in turn rests on a distinction between bona fide boundaries (such as the surface of one’s skin) and fiat boundaries (such as the boundary between one’s arm and one’s torso, or between Utah and Montana). See Smith, “Fiat Objects” (2001). His definition of substance starts as follows: “x is a substance =df. (1) x is substantial, (2) x has a boundary, ...”. The Requirement of Having a Boundary stated expands on this in two ways: (a) it applies the requirement also to instances of sortals and properties, and (b) it brings in temporal boundaries, too. If there are finite purely temporal entities such as Descartes’ thinking substances, they need and can of course only have temporal boundaries.

<sup>20</sup> For discussions see, e.g., A. C. Varzi, “Boundary” (2004), and B. Smith, “Boundaries: An Essay in Mereotopology” (1997).

space and in continuous time, respectively. In the point of time where the form of the original ship ( ${}^T\text{O}$ ) ceases to exist, there has to be some kind of relevant discontinuity, but on the assumptions made, there simply is during the two processes and between the three stages under discussion no such point. During this time interval, there is complete qualitative identity with respect to kind of form; even though there is discontinuity with respect to matter, there is no discontinuity between the individual forms  ${}^T\text{O}$ ,  ${}^T\text{O}^{-1}$ , and  ${}^T\text{O}^{+1}$ . That is, there is no boundary between these instances and, therefore, they have to be one and numerically the same instance. We can state yet another principle:

- *The Possibility of Base Redundancy for Supervenient Numerical Identity:* If an instance of kind S supervenes on ( $p_1 + p_2 + \dots + p_{1000}$ ), it might be the case that  $p_n$  can be taken away but that nonetheless the same instance of S supervenes on the new base, too.

Supervenient individual forms might endure even though some base entities are lost, changed, or exchanged. As already stated: in the sequence from  ${}^T\text{O}$  ( $p_1 + p_2 + \dots + p_{1000}$ ) via  ${}^T\text{O}^{-1}$  ( $p_2 + \dots + p_{1000}$ ) to  ${}^T\text{O}^{+1}$  ( $q_1 + p_2 + \dots + p_{1000}$ ) there is numerical form-constancy, i.e.,  ${}^T\text{O} = {}^T\text{O}^{-1} = {}^T\text{O}^{+1}$ . In short, we have here a case of supervenient numerical identity.

#### 4. *Conclusions in relation to the ship of Theseus*

In the formulation of the Theseus puzzle, all the substitutions that transform ship O into ship A are assumed to be such as to preserve the *qualitative* identity of the form of ship O. Let us now add the assumption (to be discussed in section 5) that each whole step consisting of (i) removal of a piece, (ii) the ship lacking such a piece for a while, and (iii) the inserting of a new piece is such that there is base redundancy for supervenient numerical identity. If so, then, according to the analysis made at the end of section 3, even the *numerical* identity of the form of ship O is preserved through the whole process. On the assumptions stated, three conclusions emerge:



- (a) Ship A is numerically form-identical (but not matter-identical) with ship O.
- (b) Ship B is numerically matter-identical (but not form-identical) with ship O.
- (c) Only ship O is numerically form-and-matter identical with ship O.

This solution deepens Jonathan Lowe's proposed solution of the puzzle. Explicitly, he uses no form-matter distinction, but implicitly he does. He thinks that ship A is identical with the original ship, and central to his argument is a concept of "appropriation". According to Lowe, when ship B is being built, the old pieces from ship O become *appropriated* by ship B and can, therefore, no longer be parts of either ship O or ship A. He says he uses:

the intuitively plausible principle that I [Lowe] advanced earlier, namely, that if sufficiently many of a thing's parts are incorporated into *another* thing, then those parts are appropriated by that other thing and cease to be parts of the first thing.<sup>21</sup>

Where there is such a kind of appropriation, a ship cannot be identical with the collection of its material parts and their spatial relations. A collection appropriates nothing. Therefore, Lowe's solution implies the existence of some entity that is distinct from the matter of the ships, and which is responsible for the appropriation in question. What kind of entity is it? Well, the exact answer is for Lowe to give, but it seems to me as if it has to conform to some kind of form-matter metaphysics. Only in such metaphysics makes it good sense to say that something (the forms) "appropriates" or "forms" matter.<sup>22</sup>

In what follows, I will take my way of solving the puzzle discussed above (case 1) for granted. With its help, solutions to similar puzzles are easily found. Here come three other cases.

Case 2: What kind of numerical identities and/or non-identities are there between ship O and the ship (ship A/2) that is there half-way during the process that transforms ship O into ship A? Since the matter identity at hand consists in the identity of a *collection* of pieces of matter (and spatial relations), it can take degrees: The more pieces that stay the same, the

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<sup>21</sup> Lowe, *A Survey of Metaphysics* (2002), p. 33.

<sup>22</sup> In Platonist dualism, one ought to say, as is usually done, that matter *participates* in the idea; not that the idea or form *appropriates* the matter in question.

higher the degree of matter-identity. Therefore, the answers to this case are:

- Ship A/2 is numerically form-identical and 50% matter-identical with ship O
- Ship A/2 is *not* numerically form-and-matter identical with ship O.

Case 3: What identities are there if ship O is in some way cut in the middle into two big parts, and then each part is, with new material, re-built into the ships C and D? Since the cut is made in such a way that the functional ability is lost, both the form-instance <sup>T</sup>O and, consequently, the ship O pass out of existence. We get:

- Ship C is 50% matter-identical (but not form-identical) with ship O
- Ship D is 50% matter-identical (but not form-identical) with ship O.

Case 4: To begin with, there are two qualitatively identical Theseus-kind-ships, ship O<sub>1</sub> and ship O<sub>2</sub>; then the corresponding matter pieces of the ships are exchanged, one by one, for each other. If the resulting ships are called “ship A\*” and “ship B\*”, the following holds true:

- Ship A\* is numerically form-identical with ship O<sub>1</sub> and matter-identical with ship O<sub>2</sub>
- Ship B\* is numerically form-identical with ship O<sub>2</sub> and matter-identical with ship O<sub>1</sub>
- Only ship O<sub>1</sub> is numerically form-and-matter identical with ship O<sub>1</sub> (and O<sub>2</sub> with O<sub>2</sub>).

Related to the common sense tension between form-constancy and matter-constancy spotted by Simons, there is often also a natural longing for form-and-matter-constancy. Neither in the Theseus puzzle, nor in the other cases discussed, can such a longing be wholly satisfied. Let me show what I mean.

Assume the existence of a couple who once made a romantic trip on the original ship O, and who now wants to make a new trip on the ship hoping that, at least partly, some nice feelings will come back. But then the travel agency tells them the story about the exchanges of parts and asks them whether they want to make their voyage on ship A or on ship B. If ship O had simply been burnt to ashes, they would have felt sorrow for not being

able to make another trip with the ship, but they wouldn't have had the decision problem they now face. Since they hope to re-live a certain atmosphere, their emotions are essential parts of the problem, and they pretty soon get an intense longing for a ship that is form-and-matter-identical with ship O. I wouldn't be astonished if, partly because of this longing, they pose their decision problem in form of the question: "Which of the ships A and B is *really* ship O?" According to the analysis made, however, this question rests on the wrong presupposition that there is only one kind of identity to consider. Instead, they should ask: "Shall we make our trip on ship A which is form-identical with our beloved ship O, or shall we make the trip on ship B which is matter-identical with it?" Since their emotions were originally attached to the form-and-matter unity ship O, it is not an easy task to find out whether today these emotions are associated more with the form or more with the matter of the old ship O. Perhaps it is an impossible task.

If, instead, the travel agency tells our couple that ship O in a sense still exists, but that it has been renovated into what I have called "ship A/2", their decision problem takes on another character. Since there is in this case only one ship, their problem becomes whether to make the trip on this ship or not to make it at all. What tells against making the trip is that ship A/2 is not *really* the old ship O. It is not form-and-matter-identical with ship O. Even though ship A/2 is numerically form-identical with their love-ship, there is only 50% matter-identity. Therefore, they get a curious feeling that something is missing in relation to their original wish. This kind of situation is, by the way, quite common in today's European tourism. Several churches and old houses that were partly destroyed during the World Wars have been re-built in such a fashion that they look and function the way the old buildings did. They are form-identical but only partly matter-identical with the original buildings. I know for sure that there are tourists who have asked themselves: "Is this *really* the old church or not?"

With respect to case 4 (i.e., the two ships  $O_1$  and  $O_2$ , which exchanged all their parts with each other), an even more complicated scenario can be construed for our romantic couple. Let us assume that the nice voyage they want to re-live was made on ship  $O_1$ , but also that they once made an awful quarrelsome trip on ship  $O_2$ . Ought they now to make their new trip on ship  $A^*$ , whose form gives rise to nice associations (since it is form-identical with  $O_1$ ), but whose matter gives rise to unpleasant associations (since it is matter-identical with  $O_2$ ); or, ought they to make the trip on ship  $B^*$  whose matter gives rise to nice associations but whose form gives rise to unpleas-

ant associations? Whatever they choose, I guess they will be longing for a ship that is simply form-and-matter-identical with ship  $O_1$ .

### 5. *Absolute identities and linguistic-pragmatic identities*

Some philosophers, who do find the puzzle of the ship of Theseus a real philosophical problem, do not find a situation in which this ship is first disassembled into pieces and then reassembled again (case 5) at all problematic.<sup>23</sup> The reassembled ship is the same old ship O. However, I can't say the same. Being true to my solutions of cases 1 - 4, I have to claim that when ship O is disassembled, the form  $^T O$  passes out of existence, and that when the matter pieces are reassembled again, we get a ship (ship P) with a numerically new form instance. That is, I have to claim that ship P is not *numerically* form-and-matter-identical with ship O, even though, of course, the ships are *qualitatively* identical with respect to both form and matter. But isn't this a very counter-intuitive claim to make? Yes, it is. However, there is a good explanation of this fact. I have so far been talking about *absolute* numerical identities. But in ordinary language, normally, we don't care too much about such absoluteness. When this difference is clearly seen, even my solution to case 5 becomes acceptable. Let me explain by commenting on a paper, which, by not taking the dynamics of language into account, over-emphasizes the point I need and want to make.

Trying to combine the truthmaker idea with the so-called supervenient approach to singular reference, Barry Smith and Berit Brogaard writes that:

The truthmaker theory rests on the thesis that the link between a true judgement and that in the world to which it corresponds is not a one-to-one but rather a one-to-many relation. An analogous thesis in relation to the link between a singular term and that in the world to which it refers is already widely accepted. This the thesis to the effect that singular reference is marked by vagueness of a sort that is best understood in supervenient terms.<sup>24</sup>

Let me relate this quotation to perceptual judgments (but neglect the theory of supervenience). If I truly say to someone "I am seeing a red house over there", then my report would be true independently of whether I was seeing a dark red, a medium red, or a light red house. In fact, it is consistent

<sup>23</sup> See e.g. Lowe, *A Survey of Metaphysics* (2002), pp. 30-34.

<sup>24</sup> Smith and Brogaard, "A Unified Theory of Truth and Reference" (2000), pp. 49-93; the quotation is from the abstract.

with me seeing one of several possible different hues of red. Since the word “red” is poorer in content (intension) than the perceived hues of redness that it is used to describe, we have an example of the one-to-many relation mentioned in the quotation. Something similar is true of many names, too. If I truly say to a friend “Now we can see the whole Mont Blanc”, this judgment is true for both of us even if I and my friend are drawing the geographical boundary for Mont Blanc somewhat differently. In everyday conversations, normally, we care as little about exact such boundaries as we care about what exact color hues we perceive.

This kind of one-to-many relation between words and the perceptual world becomes even more obvious if one also takes into account, as Smith and Brogaard do and stress, the fact that the extensions of many terms, both universal and singular, are context dependent. As they say, the sentence “This glass is empty” is made true by different partitions of reality when uttered by beer drinkers and by hygiene inspectors; and this difference relates to both the singular term “this glass” and to the universal term “empty”. Based on observations like these, they claim, although only in passing, to have a solution also to the puzzle of the ship of Theseus. I quote them at length:

In some contexts, our terms will refer in such a way that it will be true that the ship is, even after all the repairs, still the same as the original ship. These might be contexts in which we are interested only in the ability of the ship to do its job in sailing from port to port. Our partitions in those contexts trace over the separate planks within the ship. In other contexts, however, for example inside museums of naval archaeology, our terms may refer in such a way that it is precisely these planks which are important, so that the ship may for example enjoy continued existence even when it is in a disassembled state.

Simons (1987) has proposed that these two ways of looking at identity through time involve appeals to different notions of identity: functional identity, in the eyes of the shipowner, and material identity in the eyes of the curator. Simons comes close to provide a correct account of the problem in hand. But once again our contextualist theory is more thoroughgoing, since it grants to a much wider range of actual and possible contexts in which successor relations are tracked across time the power to determine corresponding true judgements of identity. Thus in particular both the shipowner and the museum curator can make true judgements of identity relating to the original ship, though there is of course no context in which these two sets of judgements can come out true together.<sup>25</sup>

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<sup>25</sup> Smith and Brogaard, “A Unified Theory of Truth and Reference” (2000), section 9.

First comment: This cannot possibly be the whole solution of the Theseus puzzle, since it does not take account of the situation where ship B (the curator's ship) is as much sailing the seas as ship A. Second comment: Simons' proposal ("So in addition to the sortal 'ship' we suppose there are two other sortal terms, 'matter-constant ship' and 'form-constant ship'") can be given two interpretations. Smith and Brogaard seem to take it as saying that *already* when the puzzle arises, the terms 'matter-constant ship' and 'form-constant ship' are there, whereas I have taken it as saying that such terms can and have to be constructed in order to solve the puzzle. On the first interpretation, Simons says something that is probably wrong, but on the second interpretation he is right. Let us next take a brief look at the flexibility of language.

Often, when needed, one-to-many relations between words and world can be turned into "one-to-not-so-many" relations. For instance, we can easily turn from speaking about only redness to speak about dark red, medium red, and light red. It is even possible to create terms which give us one-to-one relations between color hue terms and perceived hues. In fact, the so-called Munsell Hue Designations come close to it. They divide red into ten reds (1R, 2R, ..., 10R), yellow-red into ten yellow-reds (1YR, 2YR, ..., 10YR), and red-purple into ten red-purples (1RP, 2RP, ..., 10RP). Similarly, we can very well create many names, "Mont Blanc 1", "Mont Blanc 2", "Mont Blanc 3", and so on, each of which denotes a mountain with a very precise boundary.

As in everyday contexts we do not care too much about very specific color hues and the precise spatial boundaries of things, neither do we normally care about the differences between form-identity, matter-identity, and form-and-matter-identity of ships. We simply speak about the identity and non-identity of ships. If a ship is first disassembled and then reassembled, we can trace over the difference between form-identity and matter-identity, and, consequently, also trace over the disassembled state, without getting any linguistic-pragmatic problems. The point of the puzzle of Theseus is that it describes a situation where this is no longer possible. When both ship A and ship B are sailing, they belong to the same context; and if in this context one can refer only to one kind of absolute all-or-nothing numerical identity, "ship identity", then either (i) both the ships A and B are wholly identical with ship O, or (ii) none of these ships are at all identical with ship O, or (iii) one of the ships is wholly identical with ship O and the other is not at all identical. Since all these three options are absurd, we have to develop language in order to make it catch hitherto neglected parti-

tions of reality. When this is done, we can truly claim that ship A is form-identical with ship O, and that ship B is matter-identical with it.

Ordinary language has not been created in order to fit the needs ontologists have. It has been, and is, developed mainly in order to make ordinary living easier. Nonetheless, it can be developed to fit the philosophers' needs, too. My claim, that the reassembled Theseus in case 5 is not the same ship as the original ship, is counter-intuitive only if it is falsely understood as contradicting common sense statements to the effect that the ships are identical. However, I am not trying to change the truth-value of such common sense statements of non-absolute identity. I think that in everyday life we should continue to say that the reassembled ship is the same ship as the old one, ship O, but as philosophers we should remember that the ships are not absolutely identical with respect to their form instances. The original puzzle (case 1) is different. Here, the distinction between form and matter cannot even in everyday language be disregarded.

In my opinion, when making ontological thought experiments, one is often allowed to write as if words that normally have a one-to-many relation to the world have suddenly got a one-to-one such relation. In my argumentation in the earlier sections, I have implicitly used this semantic move. I have written as if my terminology is of the one-to-one character. Now, I want to make my assumptions in this respect explicit. First some words about matter-identity and then some about form-identity.

In the real world, it would be impossible for the ships A and B to be absolutely *qualitatively* identical with regard to all their matter. This would mean that all the corresponding planks of these ships had absolutely the same shape and absolutely the same kind of chemical composition. Nor would it be possible for ship B to be absolutely *numerically* matter-identical with ship O. Of physical necessity, there has to be some wear during the reconstruction. Both these kinds of complications have so far been neglected, and, starting with the next section, they will again be so treated.

Can then, in the real world, ships A and B be absolutely *qualitatively* identical with regard to their forms, i.e., with regard to their functional identity? Let me give just some brief remarks. As an extended thing continues to be extended (in the absolute sense) even when it is shortened, and as a person is absolutely the same person both when healthy and sick, I think a function can stay absolutely the same even when its actual functioning changes a bit; and even if it changes in such a way that it is no longer functioning well. Functioning takes degrees, just as length takes quantities; in other words, a ship has its ship-function even when it func-

tions badly.<sup>26</sup> Therefore, I think that absolute form identity is a real possibility; both qualitatively between two ships and numerically over time for one single ship. This view is quite consistent with my earlier claim that if Theseus loses its main sail, it is no longer a Theseus-kind-ship, even though there is a ship. This ship is then only “the corpse” of Theseus.

The difference between absolute and linguistic-pragmatic identities now explicated does not only help me to explain why, at first, my solution to case 5 looks counter-intuitive. It also allows me to distinguish between absolute and pragmatic base redundancy. At the beginning of section 4, I assumed that in the Theseus puzzle each exchange step – removal of a piece, the ship lacking the piece, and the inserting of a new piece – has such a character that in the sequence  $O$ ,  $O^{-1}$ , and  $O^{+1}$  even  $O^{-1}$  is *exactly* the same kind of form as  $O$  and  $O^{+1}$ . However, such an absolute requirement is not necessary. To common sense, and the puzzle of the ship of Theseus is a problem even for common sense, it doesn't matter if  $O^{-1}$  is a form that differs a bit from  $O$  and  $O^{+1}$ . If there is no base redundancy for the supervening form  $O$ , and one piece is taken away from ship  $O$ , then the form  $O$  disappears; and when a new piece is inserted a new individual form (of the same kind as the first one) starts to supervene. That is, from an absolute ontological point of view. But from a more pragmatic point of view there is no reason to bother. Let's *say* it is the same form.

*6. The problem of Tibbles, Tib, and the tail  
(or: Theseus, Thes, and the sail)*

Back to philosophical absolute identity. I will now show that the form-matter distinction that I have used in cases 1-4 can be used in order to solve also the related so-called problem of Tibbles and Tib. All the first four cases have to do with how *exchanges* of parts seem to create problems for ordinary intuitions about the numerical identity of a whole, and case 5 has to do with how *dis- and reassembly* of parts are related to such intuitions, but the Tibbles-Tib problem (case 6) is a problem about how *loss* of a part is related to the identity of some wholes.

In the usual presentations of this problem, Tibbles is a cat that loses its tail and becomes Tib, but it makes no difference to the problem if it is stated as a problem about a ship called Theseus that loses a sail and becomes Thes. In order to keep not only the readers' ordinary associations to

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<sup>26</sup> More about this in Johansson, “Functions, Function Concepts, and Scales” (2004), section 7.



Tibbles and Tib intact, but also to keep the link to the puzzle of the ship of Theseus visible, I will use Tibbles as a name of a big sailing ship; one that loses a small and not too important sail. Lowe's presentation of the problem can then be paraphrased as follows:<sup>27</sup>

The sailing ship Tibbles has many sails; among them one rather small sail called 'Tail'. Tail is clearly a component part of Tibbles. But now consider the rest of Tibbles – the whole of Tibbles apart from Tail – and let us call this 'Tib'. Tib seems to be a component part of Tibbles just like Tail. Clearly, Tibbles and Tib are not identical with one another, for Tibbles has Tail as a part whereas Tib does not. However, big sailing ships can survive loss of one sail; and in an accident this happens to Tibbles. Since Tail was no part of Tib, this accident can have no bearing on the existence of Tib. Therefore, after the accident, Tibbles and Tib exactly coincide with one another. And the question is: how is it possible for them exactly to coincide and yet to remain numerically distinct from one another?

Achille Varzi states the same problem as follows, I quote:

1. Tibbles at  $t \neq$  Tib at  $t$  (one is a proper part of the other)
  2. Tibbles at  $t =$  Tibbles at  $t'$  (Tibbles survives the loss of Tail)
  3. Tib at  $t =$  Tib at  $t'$  (Tib is not affected by whatever happens to Tail)
  4. Tibbles at  $t' =$  Tib at  $t'$  (both have the same parts)
- Yet 2-4 jointly imply the negation of 1 by transitivity of identity, so we are in plain contradiction.<sup>28</sup>

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<sup>27</sup> Lowe, *A Survey of Metaphysics* (2002), p. 74.

<sup>28</sup> A. C. Varzi, "Basic Problems of Mereotopology" (1998), p. 33. Varzi proposes no definite solution. The quotation continues as follows: "If, on the other hand, we deny that Tibbles and Tib have become one and the same thing, i.e., if we deny 4 (and extensionality with it), then we must abandon the traditional identity criterion according to which two distinct material bodies cannot occupy the same spatial region at the same time. And this is just as high a cost to pay. Of course we could also keep 1 and 4 and give up either 2 or 3. Rejecting 2 takes us back to the case of Theseus' ship, suggesting a form of mereological essentialism: the removal of a part (even a tiny and seemingly inessential one) affects the identity of the whole. But rejecting 3 seems to

Let me again distinguish between matter-identity and form-identity. If we identify Tib with its matter ( $m_1$ ), which is the same during the whole process, and Tibbles with its matter, which originally is  $m_1 + m_2$ , the four statements in Varzi's presentation look as follows:

- M1.  $(m_1 + m_2) \text{ at } t \neq (m_1) \text{ at } t$
- M2.  $(m_1 + m_2) \text{ at } t = (m_1) \text{ at } t'$
- M3.  $(m_1) \text{ at } t = (m_1) \text{ at } t'$
- M4.  $(m_1) \text{ at } t' = (m_1) \text{ at } t'$

Again, of course, we get a contradiction. Statements M2 to M4 jointly imply the negation of M1. But now there is a difference. If the ships are identified with their matter, the second premise is obviously false (and all the other are obviously true), and there is no problem. Tibbles without Tail cannot then possibly be Tibbles anymore. If statement M2 is rejected, the contradiction disappears. So much for matter-identity; let us next bring in the forms of Tibbles and Tib. That is, let us identify Tibbles and Tib with the unity of their respective forms (O) and their respective matter (m). In the kind of operator symbolism earlier used, we get:

- the original Tibbles =  $\text{Tibbles}^{\text{O}}(m_1 + m_2)$
- the damaged Tibbles =  $\text{Tibbles}^{\text{O}^{-1}}(m_1)$
- Tib =  $\text{Tib}^{\text{O}}(m_1)$ .

If the statements 1-4 of Varzi's presentation are turned into statements about identities and non-identities only of forms, we get:

- F1.  $\text{Tibbles}^{\text{O}} \text{ at } t \neq \text{Tib}^{\text{O}} \text{ at } t$
- F2.  $\text{Tibbles}^{\text{O}} \text{ at } t = \text{Tibbles}^{\text{O}^{-1}} \text{ at } t'$
- F3.  $\text{Tib}^{\text{O}} \text{ at } t = \text{Tib}^{\text{O}} \text{ at } t'$
- F4.  $\text{Tibbles}^{\text{O}^{-1}} \text{ at } t' = \text{Tib}^{\text{O}} \text{ at } t'$

As it should be, again statements 2 to 4 jointly imply the negation of 1. What is then wrong here? Consider premise F2. Whereas M2 is false, F2 is true. Since Tail is an unimportant sail, there is base redundancy, and the form  $\text{Tibbles}^{\text{O}}$  is both qualitatively and numerically identical with the form  $\text{Tibbles}^{\text{O}^{-1}}$ , which means that F2 is true. Next, consider F4; it is true, too.

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imply an equally doubtful form of essentialism to the effect that the removal of a part affects the identity of another, adjacent but mereologically disjoint part.”

Since both the forms in question ( $\text{Tibbles}^{\text{O}^{-1}}$  and  $\text{Tib}^{\text{O}}$ ) are supervenient individual forms, the indiscernibility requirement can be applied. Perhaps it is not immediately obvious, but this requirement entails that if two supervenient entities have the same base (as  $\text{Tibbles}^{\text{O}^{-1}}$  at  $t'$  and  $\text{Tib}^{\text{O}}$  at  $t'$  have) then they are identical. And this means that F4 is true. What then about F3? It might give the impression of being true by definition, but it is not; to the contrary, it is false. Of course, *if* there is a form  $\text{Tib}^{\text{O}}$  at  $t$ , then this form is surely identical with  $\text{Tib}^{\text{O}}$  at  $t'$ , but is there one? The statement F3 must be interpreted as saying “There is a form  $\text{Tib}^{\text{O}}$  at  $t$ , and this form is identical with  $\text{Tib}^{\text{O}}$  at  $t'$ ”. Now, with Lowe, I am of the opinion that there is no such form  $\text{Tib}^{\text{O}}$  at  $t$ .<sup>29</sup> Why? Because there is no *actual* functional identity that is Tib; the Tib thought of is merely a potential functional identity. And, since a potential form ( $\text{Tib}^{\text{O}}$  at  $t$ ) cannot be identical with an actual form ( $\text{Tib}^{\text{O}}$  at  $t'$ ), F3 is false. Left to consider is F1, which, on the basis of what has been said must be true. It maintains that an actual form,  $\text{Tibbles}^{\text{O}}$  at  $t$ , is distinct from a potential form,  $\text{Tib}^{\text{O}}$  at  $t$ .

In short, if form-identity and matter-identity are kept apart, the problem of Tibbles and Tib is rather easily solved. In the pure “matter formulation” premise M2 is false, and in the pure “form formulation” premise F3 is false. The conclusions can be stated thus:

- Ship (cat) Tibbles is form-identical, but not matter-identical, with ship (cat) Tib
- Only ship (cat) Tibbles is form-and-matter identical with ship (cat) Tibbles.

### 7. Theseus and the lump of bronze

In all the situations discussed so far (cases 1 to 6), the central matter of the form-matter dualities in question have been distinct pieces. In the so-called problem of the statue and the lump of bronze (or clay or whatever), this is not the case. Here (case 7), the matter consists of some stuff that is regarded as a homogeneous matter unit. I will discuss a bronze statue called Theseus; so called because it is a statue of the ship of Theseus. The problem of the statue Theseus can, just like the puzzle of the ship of Theseus, be stated as a dilemma between two intuitions. On the one hand, we seem to identify a statue with its matter; especially when we are looking at it. On

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<sup>29</sup> Lowe, *A Survey of Metaphysics* (2002), pp. 74-76.

the other hand, we seem to make a distinction between statues and what they are made of; especially when we are thinking of a statue (T) that is melted down and then re-shaped into another statue (U).<sup>30</sup> According to the analyses of cases 1 to 6, it ought to be the last intuition that we should let win. And so it is. Here come the details.

Even though the matter of the statue is assumed to be a homogeneous unit, this identity problem can be shown to have the same kind of structure as the other ones in which the matter consists of distinct pieces. Even the problem of the statue and its matter can be represented by means of the operator symbolism introduced. When statue T exists (stage 1), the bronze matter in question (m) has one specific three-dimensional geometrical shape ( $s_1$ ); when the statue has been melted down (stage 2) there are other such shapes (let's bring them together under the expression  $s_2$ ); and when this pure lump of bronze (m) has been turned into the new bronze statue U (stage 3), there is a third specific geometrical shape ( $s_3$ ). Statue T has the statue form  ${}^T\text{O}$ , statue U has the statue form  ${}^U\text{O}$ , and when the matter is melted down there is no statue form at all. In analogy with the earlier analyses, we can write:

- stage 1: Statue T =  ${}^T\text{O}(m + s_1)$
- stage 2: The lump of bronze melted down =  $(m + s_2)$
- stage 3: Statue U =  ${}^U\text{O}(m + s_3)$ .

The conclusions to be drawn can immediately be read off from the symbolism.

- The statue Theseus is form-different from, but matter-identical with, the statue U
- Both the statues are matter-identical with the pure lump of bronze.

The two different *supervening* statue forms,  ${}^T\text{O}$  and  ${}^U\text{O}$ , have, as the indiscernibility requirement requires, different bases;  ${}^T\text{O}$  supervenes on  $(m + s_1)$ , and  ${}^U\text{O}$  supervenes on  $(m + s_3)$ , respectively. Theseus is *constituted* by  ${}^T\text{O}$  and  $(m + s_1)$  and the statue U by  ${}^U\text{O}$  and  $(m + s_3)$ . Both the statues *coincide* in space with the lump of bronze, m.

Lowe has written: "A statue, for instance, is a kind of object which, unlike a lump of bronze, cannot survive much change to its shape. Con-

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<sup>30</sup> Compare Lowe, *A Survey of Metaphysics* (2002), pp. 63-64.

versely, a lump of bronze is a kind of object, which, unlike a statue, cannot survive any change to its material composition.”<sup>31</sup> I agree. It doesn’t matter to the statue if some very small amount of bronze disappears, even though, of course, it makes a difference to the matter-identity. But this can mean one of two different things. If we are talking about *absolute* form-identities, then we have to say that the statue form in question has *base redundancy*, but if we are talking everyday language, then we might only be taken to imply that we find such small material changes of no pragmatic importance.

#### 8. *Aristotelianism, nominalism, and reductive materialism*

As has been now shown, the paradoxes, puzzles, or problems of the ship of Theseus, of Tibbles-and-Tib, and of the Statue-and-its-matter can be solved within a metaphysics that allows some kind of Aristotelian form-matter dualities. Conversely, these problems are not only puzzling but unsolvable, if one tries to squeeze out one single and unique kind of identity in spite of the fact that there are three kinds of identity around. But who should embark on such an impossible undertaking? In my opinion, at least nominalists and reductive materialists have to make the attempt. Nominalists, with their view that there are only particulars and no repeatable sortals or properties, can allow neither a form-matter duality nor the ensuing relations of supervenience and constitution. According to them, there is only one kind of non-linguistic identity, the identity of simple particulars. Reductive materialists, with their view that only the basic entities recognized by physics can rightly be claimed to exist, make, of course, themselves dependent on the present state of physics. Yesterday they said that there are only protons, electrons, and neutrons; today they say that there are only quarks or strings. In neither case are there any form-matter dualities

Individually, but even more collectively, the problems discussed (cases 1-7) are strong arguments against nominalism and reductive materialism. They point towards the view that the world contains real non-reducible enduring supervenient entities.

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<sup>31</sup> Lowe, *A Survey of Metaphysics* (2002), p. 70.

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# No Impediment to Solidity as Impediment

## *I. The Impediment Thesis*

Quassim Cassam (1997) argues that a subject, S, must be intuitively aware of himself as a physical object in order to conceive of his perceptions as being of physical objects. One premise in Cassam's argument for this claim is that, in order for S to conceive of objects as having a shape, being spatially located, and being solid, S's perceptual experience must present such objects to him in just that way (i.e. as shaped, spatially located, and solid). And about the experience of solidity, Cassam adopts the standard view; "solidity is typically felt as an impediment to one's movements" (1997: 52). This is the Impediment Thesis:

(IT) If S feels  $x$  as solid, then S typically feels  $x$  as an impediment to S's movement.

In a recent article, Martin Fricke and Paul Snowdon (2003) set out to refute (IT). They hypothesize that one who endorses (IT) may be persuaded by something like the following argument (2003: 177):

- (1) If S feels  $x$  as solid, then that is typically because  $x$  is solid and in contact with the surface of S and exerting some pressure on the body of S.
- (2) If  $x$  is exerting some pressure on S, then  $x$  is exerting some influence on a movement state of S.
- (3) If  $x$  is exerting some influence on a movement state of S and thereby felt, then S must feel  $x$  as an impediment to S's movement.
- (4) Therefore, (IT).

But according to Fricke and Snowdon, (3) is false. On their view, even if it were true that for  $x$  to be felt as solid it must be felt as exerting pressure,  $x$  need not be felt as exerting a pressure that impedes S's movement.

In this brief note, I show that Fricke and Snowdon's discussion

conflates two senses of ‘impediment’ which must be kept separate in order to accurately characterize the content of our perceptions of solidity. But first, a preliminary objection.

## *II. Coincidence, Parthood, and Solidity*

Early in the paper, Fricke and Snowdon (2003: 175) suggest that we accept the following claim:

(E) Necessarily, a solid object excludes other solid objects.

But friends of coincident objects will deny that, necessarily, anything that is solid is an excluder of other solid objects. If ‘is solid’ can be truly predicated both of the statue and of the lump of clay, and if the statue and the lump wholly and simultaneously occupy the same place, then it is false that solid objects necessarily exclude other solid objects from simultaneously occupying the same space.

Now it might be thought that the following modification to (E) answers my objection:

(E') Necessarily, a solid object  $x$  excludes any solid object  $y$  from which  $x$  is distinct.

While coincident objects like the statue and the lump are not identical, nor are they distinct, and it is for this reason that the two fail to exclude one another.

But *contra* (E'), although you and your spleen are distinct solid objects, you do not exclude your spleen. So consider an even stronger formulation:

(E'') Necessarily, a solid object  $x$  excludes any solid object  $y$  from which  $x$  is distinct and which is not a part of  $x$ .

The trouble with (E''), however, is that it will prove tricky to disentangle  $y$ 's not being a part of  $x$  from  $x$ 's exclusion of  $y$ . In particular, rather than  $y$ 's not being a part of  $x$  acting as a condition on  $x$ 's excluding  $y$ ,  $y$ 's being or not being a part of  $x$  may essentially involve  $x$ 's not excluding or excluding  $y$  (respectively). Thus, consider a clay statue of a human form. At  $t_1$ , the statue lacks a head; at  $t_2$ , the sculptor affixes the head atop the

previously headless statue. At both times, the head is distinct from the statue; but whereas at  $t_1$ , the head is not a part of the statue, at  $t_2$  it is. Far from being excluded by the statue, by  $t_2$ , the head has become a part of the statue. And yet, had the sculptor simply thrown the head at the headless statue, the headless statue would have excluded it. Only by affixing it does the sculptor make the head into a proper part. The point is that, even if  $y$  is not a part of  $x$ , whether  $x$  excludes  $y$  will (in some cases) depend upon the manner of their interaction. Indeed,  $x$ 's non-exclusion of  $y$  may essentially involve  $y$ 's becoming a part of  $x$  (as when the head is affixed to the headless sculpture); and vice versa,  $x$ 's exclusion of  $y$  may essentially involve  $y$ 's failure to become a part of  $x$  (as when the head is hurled at the sculpture).

To be sure, this objection does not threaten the overall aim of Fricke and Snowdon's paper. Nevertheless, the contentiousness of (E) should not be overlooked.

### *III. The Ladder Case*

In support of their attack on (IT), Fricke and Snowdon present a battery of examples in which  $x$  is felt as exerting a pressure that 'supports or aids or facilitates  $S$ 's movements'. Here, for instance, is their *ladder case*:

S wishes to get a book from a high shelf and climbs a ladder to reach it. He feels the rungs of the ladder as solid, but hardly as obstructive. They aid his movement in his desired direction. They will surely be felt as aids or promoters of his movements. (2003: 176)

Fricke and Snowdon's examples are structurally isomorphic. Each case comprises three components:

- (i)  $x$ . In the ladder example,  $x$  is a ladder rung. Other examples feature a slide, an escalator, a chair, the ground, a dog, a person, etc..
- (ii)  $S$  perceives  $x$  as not impeding. In the ladder example, the rungs are felt "as aids or promoters". In other examples,  $x$  is felt to 'enable', to 'facilitate', to 'not obstruct', etc..
- (iii) *What is unimpeded is the movement involved in  $S$ 's intended*

*course of action*. In the ladder example, S's "desired" course of action is to move up the ladder. In other examples,  $x$  "facilitates his planned movement", "enables S to stay precisely where he wishes", "enables him to move in the desired direction", etc..

Since each of Fricke and Snowdon's examples appeals to intuitions about perceptual content, in principal, one could challenge one without challenging the others. But because I will be concerned with a feature common to all nine examples, I will use the ladder example as a case study; analogous points about the remaining examples may be extrapolated *mutatis mutandis*. In particular, I will concentrate on (iii) and the sense of 'impediment' involved in its claim that S's movement is unimpeded.

#### *IV. Impediment-S and Impediment-A*

Consider two ways in which S may feel  $x$  as an impediment. According to the first, S feels  $x$  as an impediment to his movement when S feels  $x$  as exerting an influence on a movement state of S. Because S feels *himself* to be impeded by  $x$ , let us label this sense 'impediment-S'. This is to be contrasted with a second sense, according to which S feels  $x$  as an impediment to movement when S feels  $x$  as an obstacle to the achievement of a movement-involving goal. What is felt to be impeded here is not S but his *action*, so let us label this 'impediment-A'.

Before I illustrate this distinction with examples, some caveats are in order. I do not discount the possibility of overlap between impediment-S perceptions and impediment-A perceptions. Nor do I claim that, in cases of overlap, perceiving  $x$  as both an impediment-S perception and as an impediment-A involves distinct contents. (We should say that the content of such a perception has two aspects.) Nevertheless, I do claim that there is a genuine distinction to be drawn here. In some cases,  $x$  may be felt as an impediment-S but not as an impediment-A; whereas in other cases,  $x$  may be felt as an impediment-A but not as an impediment-S.

Consider a case in which  $x$  is felt as an impediment-A but not as an impediment-S. Whereas the air that we breathe on Earth is composed of roughly 80% nitrogen and 20% oxygen, the atmosphere on Mars is composed of 95% carbon dioxide. If S were transported to Mars, he would perceive the high concentration of carbon dioxide as an impediment-A to

breathing.<sup>1</sup> That is to say, S would feel the Martian atmosphere as precluding the successful respiration of his lungs. But although he would feel the Martian atmosphere as an impediment-A (with respect to his goal of breathing), he would not feel it as an impediment-S. To see this, note that in ordinary settings here on Earth we do not feel gases constitutive of the atmosphere as exerting any influence on the movements of the component parts of our respiratory system. Nor does the fact that S would struggle to breathe on Mars confirm that the gases would be felt as impeding the movements of those parts; for as long as he survived, they would be felt to move just as they do here on Earth. It is not S himself that the Martian atmosphere is felt to impede, but rather the activity of S's breathing.

By contrast, a familiar stretching exercise illustrates how  $x$  may be felt as an impediment-S but not as an impediment-A. Standing approximately one metre in front of a wall, with his feet flat on the ground, S stretches his calf muscles by placing his hands against the wall, leaning forward, and slightly bending his knees. The further S leans forward (without lifting his heels), the better his calves are stretched. S feels the wall as an impediment-S – as exerting influence on a movement state of S – but not as an impediment-A. S does not feel the wall as an obstacle to the achievement of his goal of stretching his calves, precisely because he does feel the wall as preventing his moving forward.

But as noted, the difference between impediment-S and impediment-A does not preclude the possibility of overlap;  $x$  may be felt as impeding in both senses, or as not impeding in both senses. For instance, if S aimed to topple the wall rather than to stretch his calves, he would feel the wall not only as an impediment-S but also as an impediment-A. Likewise in the Martian atmosphere case, if S aimed not to breathe but to end his life, S would feel the air as neither impeding-S nor as impeding-A.

Yet this just confirms a crucial point, *viz.* that, even in cases of overlap, it is the action-related aspect of S's perception which is sensitive to the aim of the movement. In each case, S can effect a change in the content of his perception – specifically his impediment-A perception – by revising the aim of his movement. But S's impediment-S perception is not sensitive in this way. S does not begin to feel the wall as an impediment-S

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<sup>1</sup> Solely for the purposes of drawing this conceptual distinction, I set aside the myriad other differences between our atmosphere and the Martian atmosphere – some of which would certainly prevent S from surviving long enough to do much breathing in the first place!

to movement simply because he revises his aim from stretching his calves to toppling the wall; he felt it as an impediment-S all along.

Fricke and Snowdon would characterise the stretching case as they do their ladder case; like the rungs of the ladder, the wall is felt as enabling or facilitating, rather than as ‘impeding’, S’s movements. But it will be clear now that (a) this way of putting things equivocates between the two senses in which the wall may be felt as impeding; and that (b) this equivocation obscures, rather than elucidates, S’s perceptual content. To say that the wall is not felt as impeding-A is not to say that it is not felt as impeding-S. Indeed, S *couldn’t* feel the wall as not impeding-A unless he also felt it as impeding-S. And this holds not only for S’s perception of the wall as not impeding-A his goal of stretching his calves, but also for his perception of the wall as impeding-A his goal of toppling the wall. S could hardly feel the wall as impeding-A his attempt to topple it if he did not feel it as exerting an influence on his pushing (i.e. as impeding-S).

Likewise in the ladder case. By ascribing to S the perception of the ladder rungs as enabling rather than ‘impeding’ his progress toward the high shelf, Fricke and Snowdon take for granted that S represents his aim as acquiring the book (or perhaps reaching the shelf). If S’s aim were different, so too might the content of one aspect of his perception be different. With respect to the aim of avoiding falling, in particular, S would feel the ladder rungs as impeding-A his fall to the floor below. But as above, both perceptions – feeling the ladder rung as impeding-A (*à propos* the goal of falling) and feeling as not impeding-A (*à propos* the goal of climbing) – depend on feeling the ladder rung as impeding-S: as exerting an influence on a movement state of S.<sup>2</sup>

## V. Conclusion

What this discussion substantiates is the primacy of the impediment-S perception. The sense in which one feels something as impeding-A is (a) goal-relative and (b) dependent upon one’s feeling that thing as impeding-S. While Fricke and Snowdon have succeeded in calling our attention to a different and additional sense in which one may feel things as impediments to movement, their examples do nothing to undermine – and

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<sup>2</sup> And on those occasions in which we have no particular aim concerning the physical objects with which our movements put us into contact, it seems right to say there will be no action-related aspect to our perception; we simply feel them as impeding-S *simpliciter*.

in fact depend upon – the truth that (IT) should be understood to express: If S feels  $x$  as solid, then S typically feels  $x$  as an impediment-S to S's movement.<sup>3</sup>

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SVEN WALTER

# Multiple Realizability and Reduction: A Defense of the Disjunctive Move

## Abstract

If one accepts something like the Nagelian account of reduction, the *multiple realizability* of mental properties seems to render psychophysical *reductionism* impossible because there appear to be no one-one-correlations between mental and physical predicates (or properties) that could provide us with suitable bridge-laws. One response on behalf of psychophysical reductionism is the *Disjunctive Move* which appeals to bridge-laws connecting mental predicates with disjunctions of their physical realizers. The famous problem with the *Disjunctive Move* is that given the apparently diverse ways of physically realizing mental properties, the disjunctive predicates in question do not seem to designate *scientific kinds*, and since laws must connect kinds, the biconditionals in question cannot be *laws*, and therefore *a fortiori* not *bridge-laws*. This paper defends the *Disjunctive Move* against the two most important objections along this line: First, the suspicion that the biconditionals in question cannot be bridge-laws because they are not *explanatory*; second, the suspicion that they cannot be bridge-laws because the individual disjuncts are causally heterogeneous, so that the corresponding biconditionals are *unprojectible*.

In the philosophy of mind, *multiple realizability* is the claim that a mental property can be realized by various, mutually distinct physical properties: an event in my brain might be a thought that Iowa is west of Indiana in virtue of belonging to the physical event-type *activation in neural area a*, while, say, an event in a conscious robot's CPU might be a thought that Iowa is west of Indiana in virtue of belonging to the physical event-type *activation in silicon chip c*. The claim is not only that events that belong to the same mental event-type may belong to different physical event-types; the claim is that events may belong to the same mental event-type although there is no physical event-type they *and only they* belong to.

If mental properties are multiply realizable, psychophysical *reductionism* seems to be out of question: how could there be psychophysical reductions if there is nothing physical in common to all and only the physical

realizers of a given mental property? In the context of the account of reduction dominant in the philosophy of mind during the Seventies, for instance, according to which reductions require bridge-laws of the form ‘ $(\forall x) (Fx \equiv Gx)$ ’ or ‘ $(\forall x) (Gx \supset Fx)$ ’ (see Nagel 1961), the multiple realizability of mental properties—the fact that there are physical properties  $P_1, \dots, P_n$  ( $n > 1$ ) for a mental property  $M$  such that  $P_i$  realizes  $M$  in some creature at some time—showed that bridge-laws of this kind are unavailable, thereby rendering psychophysical reductions impossible. One response on behalf of reductive physicalism was the *Disjunctive Move*, i.e. the appeal to bridge-laws of the form ‘ $(\forall x) (Mx \equiv (P_1x \vee \dots \vee P_nx))$ ’, where  $P_1, \dots, P_n$  are all the possible physical realizers of  $M$ . There is a well-known problem with the *Disjunctive Move*, however. Given the apparently diverse ways of physically realizing mental properties, the disjunctive predicate in question does not seem to designate a *scientific kind*, and since laws must connect kinds, true biconditionals of the form ‘ $(\forall x) (Mx \equiv (P_1x \vee \dots \vee P_nx))$ ’ cannot be *laws*, and therefore *a fortiori* not *bridge-laws*.

There seem to be two major obstacles for the *Disjunctive Move* to work. First, the suspicion that the biconditionals in question cannot be bridge-laws because they are not *explanatory*. Second, the suspicion that they cannot be bridge-laws because the individual disjuncts are causally heterogeneous, so that the biconditionals are *unprojectible* and do not connect genuine, causally homogeneous *kinds*. This paper defends the *Disjunctive Move* against these objections. Section 1 formulates the central idea of the *Disjunctive Move* and its rationale. Section 2 suggests an alternative formulation which helps to avoid much of the intuitive resistance against it. Sections 3 and 4 address the charges that biconditionals like ‘ $(\forall x) (Mx \equiv (P_1x \vee \dots \vee P_nx))$ ’ are neither explanatory nor projectible.

### 1 Reduction, Psychophysical Bridge-Laws and Disjunctive Properties

What does it mean that the mental *reduces* to the physical? That  $x$  is *derivable* from or explainable in terms of  $y$ , rendering reduction a relationship between theories, propositions or predicates, or that  $x$  is *identical* to  $y$ , rendering reduction a relationship between events, facts or properties? Early philosophy of mind appealed to Ernest Nagel’s account according to which a *theory*  $T_1$  reduces to a theory  $T_2$  iff the laws of  $T_1$  (or a suitably corrected version of them) are *deductively derivable* from the laws of  $T_2$  (Nagel 1961, ch. 11). Since the laws of psychology and physics are framed in terms of at least partially disjoint vocabularies, the derivation of psycho-

logical theory from physical theory thus requires suitable *bridge-laws*, i.e. *empirical hypotheses* that express *material* rather than *logical* connections (Nagel 1961, 352-356; 1998, 913).<sup>1</sup> Bridge-laws of the form ‘ $(\forall x) (Fx \equiv Gx)$ ’ connect coreferential predicates, bridge-laws of the form ‘ $(\forall x) (Fx \supset Gx)$ ’ connect predicates of the reducing theory with predicates of the reduced theory such that the extension of the latter falls into the extension of the former. Philosophy of mind concentrated on bridge-laws of the former kind: psychological predicates, it was said, must be linked with physical predicates by biconditionals like (1) (the subscript ‘*N*’ indicating nomological necessity):

$$(1) \quad \Box_N(\forall x) (Mx \equiv Px)$$

If a mental property *M* is *realized* by a physical property *P*, an object’s satisfying ‘*P*’ is (at least) nomologically sufficient for its satisfying ‘*M*’. Psychophysical realization thus establishes (2):

$$(2) \quad \Box_N(\forall x) (Px \supset Mx)$$

The reduction of *M* to *P*, however, requires a bridge-law of the form ‘ $(\forall x) (Mx \equiv Px)$ ’ or ‘ $(\forall x) (Mx \supset Px)$ ’. Yet, if *M* is *multiply realizable* by  $P_1, \dots, P_n$  ( $1 < n$ ), there is no physical property all and only the nomologically possible creatures satisfying ‘*M*’ share and (3) and (4) are false:

$$(3) \quad \Box_N(\forall x) (Mx \supset P_i x)$$

$$(4) \quad \Box_N(\forall x) (Mx \equiv P_i x)$$

Assuming that *M* can be reduced to *P* only if ‘*M*’ and ‘*P*’ are nomologically coextensive, the falsity of (4) might seem to render psychophysical reductions impossible. This, however, is a *non-sequitur*. (4) is false if *M* is multiply realizable, but psychophysical reductions are impossible only if (1) is false, and the falsity of (4) is compatible with the truth of (1). That no

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<sup>1</sup> Suppose a law ‘ $(\forall x) (F_1x \supset G_1x)$ ’ of  $T_1$  is to be reduced to a law ‘ $(\forall x) (F_2x \supset G_2x)$ ’ of  $T_2$ . If ‘ $F_1$ ’ and ‘ $G_1$ ’ do not belong to the vocabulary of  $T_2$  and ‘ $F_2$ ’ and ‘ $G_2$ ’ do not belong to the vocabulary of  $T_1$ , the  $T_1$ -law cannot be derived from the  $T_2$ -law (and other propositions couched in the vocabulary of  $T_2$ ) unless there are bridge-laws like ‘ $(\forall x) (F_1x \equiv H_1x)$ ’, ‘ $(\forall x) (G_1x \equiv H_2x)$ ’, ‘ $(\forall x) (F_1x \supset H_1x)$ ’ or ‘ $(\forall x) (G_1x \supset H_2x)$ ’, where ‘ $H_1$ ’ and ‘ $H_2$ ’ belong to the vocabulary of  $T_2$ .

predicate ‘ $P_i$ ’ is nomologically coextensive with ‘ $M$ ’ does not entail that this holds for all physical predicates, given that the set  $\Pi_M = \{P_1, \dots, P_n\}$  of  $M$ ’s physical realizers is only a small subset of all physical properties. In other words:  $M$  cannot be reduced to any of its physical realizers, but that does not show that it cannot be reduced to any physical property at all. One candidate for a physical predicate ‘ $P^*$ ’ which makes (1) true, despite the falsity of (4), is the disjunction of all the ‘ $P_i$ ’ (see Kim 1979, 1984, 1990). ‘ $P^*$ ’ is not part of quotidian discourse, but easily definable (the subscript ‘ $L$ ’ indicating logical necessity):

$$(5) \quad \Box_L(\forall x) (P^*x \equiv (P_1x \vee \dots \vee P_nx))$$

Together with (2) and the assumption that  $\Pi_M = \{P_1, \dots, P_n\}$  is *exhaustive*, (5) entails a nomologically necessary biconditional linking ‘ $M$ ’ with ‘ $P^*$ ’:

$$(6) \quad \Box_N(\forall x) (Mx \equiv P^*x)$$

The *Disjunctive Move* holds that if the existence of biconditional bridge-laws linking mental and physical predicates is, as Nagel has held, sufficient for psychophysical reductions, multiple realizability need not be incompatible with psychophysical reductions. Here is the argument:

- (P1) Psychophysical reductions are possible if there is a biconditional bridge-law linking each mental predicate with a physical predicate.
- (P2) For each disjunction ‘ $P_1x \vee \dots \vee P_nx$ ’ there is a logically coextensive physical predicate ‘ $P^*$ ’.
- (P3) For each mental predicate ‘ $M$ ’ with  $\Pi_M = \{P_1, \dots, P_n\}$  ( $1 < n$ ), ‘ $P_1x \vee \dots \vee P_nx$ ’ and ‘ $M$ ’ are nomologically coextensive.
- (C1) For each mental predicate ‘ $M$ ’ with  $\Pi_M = \{P_1, \dots, P_n\}$  ( $1 < n$ ), there is a nomologically coextensive physical predicate ‘ $P^*$ ’.
- (P4) If there is a nomological coextensive physical predicate ‘ $P^*$ ’ for each mental predicate ‘ $M$ ’, there is a biconditional bridge-law linking each mental predicate with a physical predicate (viz., ‘ $(\forall x) (Mx \equiv P^*x)$ ’).
- (C2) Psychophysical reductions are possible.

Clearly, the argument is valid.<sup>2</sup> P1 expresses the Nagelian account of reduction. Provided that ‘ $P^*$ ’ is a physical predicate if each ‘ $P_i$ ’ is a physical predicate, P2 is uncontroversial. P3 is true because  $\Pi_M$  is the exhaustive set of  $M$ ’s physical realizers. Apart from that, opponents of reductionism (who believe in physical realization) accept (7), and thus (8), so that they could deny P3 only by rejecting (9).

- (7)  $\Box_N(\forall x) (P_i x \supset Mx)$   
 (8)  $\Box_N(\forall x) ((P_1 x \vee \dots \vee P_n x) \supset Mx)$   
 (9)  $\Box_N(\forall x) (Mx \supset (P_1 x \vee \dots \vee P_n x))$

Rejecting (9), however, would require that some nomologically possible worlds contain *unrealized* or *non-physically realized* mental properties, and that is unacceptable (at least) for those opponents of reductionism who believe in the truth of so-called ‘non-reductive physicalism’ (Jaworski 2002, 291). Thus, if P4 is correct, psychophysical reductions are compatible with multiple realizability because biconditionals like (10) can serve as bridge-laws:

$$(10) \quad \Box_N(\forall x) (Mx \equiv (P_1 x \vee \dots \vee P_n x))$$

The challenge for the opponents of the *Disjunctive Move* is thus to show why biconditionals like (10) containing disjunctive designators can *not* be bridge-laws, so that P4 is false.<sup>3</sup>

## 2 *Disjunctive Properties and Disjunctive Designators*

To many, the *Disjunctive Move* seems only like a sophisticated loophole; a loophole, moreover, that involves heavy metaphysical armor. I think it is

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<sup>2</sup> C2 follows from P1, C1 and P4 on the assumption that no nomologically possible world contains unrealized or non-physically realized mental properties; on that assumption see below.

<sup>3</sup> Clapp 2001 and Jaworski 2002, and Walter 2003 provide at least partial defenses of the *Disjunctive Move* (Clapp acknowledges that the *Disjunctive Move* demonstrates the *in principle* reducibility of psychology to physics but insists on its *de facto* irreducibility). Kim is largely skeptical about the prospects of the *Disjunctive Move* (see Kim 1992, 1998); other critics include Fodor 1974, 1997; Marras 1993; Owens 1989; Putnam 1975; Seager 1991; Zangwill 1995.

actually less absurd than is usually supposed and there need not be anything metaphysically suspicious about it.

The main problem can be brought to the fore by realizing that the *Disjunctive Move* is often formulated in a disadvantageous way which prompts a lot of misguided criticism:

[T]he picture we have is that for [each mental] property  $M$ , there is a set of properties,  $P_1, P_2, \dots$  such that each  $P_i$  is necessarily sufficient for  $P$ . Assume that this list contains all the ... properties each of which is sufficient for  $M$ . Consider then their disjunction:  $P_1$  or  $P_2$  or ... (or  $\cup P_i$ , for short). ... It is easy to see that this disjunction is necessarily coextensive with  $M$ . ... So  $M$  and  $\cup P_i$  are necessarily coextensive, and whether the modality here is metaphysical, logical, or nomological, it should be strong enough to give us a serviceable ‘bridge law’ for reduction. (Kim 1990, 152; predicates relabeled)

This passage describes the *Disjunctive Move* as suggesting to disjoin the properties  $P_1, \dots, P_n$  to create, as it were, a new *disjunctive property*  $P^*$ . Ausonio Marras, when criticizing the *Disjunctive Move*, also suggests that  $M$  is to be identified with the disjunction of its physical realizers:

Kim has argued that if we take *the disjunction of all the P-properties* that [realize] a given  $M$ -property, such a disjunction will constitute necessary *and* sufficient conditions for the  $M$ -property. Thus, if we take  $P^*$  to be any such (possibly infinite) disjunction of ...  $P$ -properties, the following will be true:

(NC) If  $M$ -properties [are realized by]  $P$ -properties, then for each  $M$ -property *there is a property*  $P^*$  such that, necessarily,  $(\forall x) (P^*x \equiv Mx)$ . (Marras 1993, 216; emphasis S.W., logical symbols altered)<sup>4</sup>

Formulating the *Disjunctive Move* in terms of *disjunctive properties*, however, inevitably leads to the question whether “disjunction [is] a permissible mode of property composition” (Kim 1990, 152) and creates the false impression that it comes at high metaphysical costs.

Usually, the distinction between predicates and properties does not matter much and one can talk about properties like *having existed at the moment Kennedy was assassinated* without causing philosophical damage. Problems emerge when such talk is supposed to yield substantial ontologi-

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<sup>4</sup> For a similar way of putting things see Heil 1992, 64 and Zangwill 1995, 153.

cal payoff. Properties are surprisingly independent of predicates: not every predicate picks out a property and there might be no well-entrenched predicate for every property. While it is clear what a disjunction of *predicates* is, it is unintelligible what it could mean to disjoin properties  $P_1, \dots, P_n$  to yield a new *disjunctive property*  $P^*$ , and even if it made sense,  $P^*$  would presumably indeed be something metaphysically suspicious. Lately, Kim agreed that, taken literally, talk about disjunctive properties is nonsense,<sup>5</sup> because “[b]y quantifying over properties, we cannot create new properties any more than by quantifying over individuals we can create new individuals” (Kim 1998, 104).

A more modest interpretation of the *Disjunctive Move*, I think, ought to disjoin the physical *predicates* ‘ $P_1$ ’, ..., ‘ $P_n$ ’ to yield a *disjunctive designator* ‘ $P_1x \vee \dots \vee P_nx$ ’ which is then said to be nomologically coextensive or coreferential with ‘ $M$ ’. Understood thus, the *Disjunctive Move* need not invoke metaphysically suspicious entities or non-standard logical operators. The suggestion is *not* to form a *disjunctive predicate* ‘ $P_1 \vee \dots \vee P_n$ ’, but to form a *disjunctive designator* ‘ $P_1x \vee \dots \vee P_nx$ ’ (compare the difference between the *disjunctive designator* ‘ $x$  is red  $\vee$   $x$  is green’ and the *disjunctive predicate* ‘ $x$  is red or green’). Thus understood, the *Disjunctive Move* would simply claim that disjunctive designators like ‘ $P_1x \vee \dots \vee P_nx$ ’ and mental predicates like ‘ $Mx$ ’ pick out the same (or at least nomologically coextensive) properties, thereby enabling psychophysical reductions.

Given that properties are determined by the way the world is and not by one’s conception of it, it should not be surprising that some complex predicates pick out ordinary properties. That the disjunctive designator ‘ $x$  is a Jugatae  $\vee$   $x$  is a Frenatae’ picks out *being a moth* does not make *being*

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<sup>5</sup> At one point, he seems to eschew disjunctive *predicates* while endorsing disjunction as an operation on *properties*: “such operations as infinite conjunctions and infinite disjunctions would be highly questionable for predicates, but not necessarily for properties—any more than infinite unions and intersections are for classes” (Kim 1984, 73). However, he later points out that “properties are not inherently disjunctive or conjunctive any more than classes are inherently unions or intersections, and .... any property can be expressed by a disjunctive predicate. Properties of course can be conjunctions, or disjunctions, of other properties” (Kim 1992, 321). If I understand Kim correctly, he is saying that we might call the property expressed by a disjunctive predicate a ‘disjunctive property’, but that we should keep in mind that there is nothing *inherently disjunctive* about that property—we might be familiar with it under another predicate. If this is what he is saying, he is close to the interpretation of the *Disjunctive Move* offered in the main text.

*a moth* a disjunctive property in any metaphysically interesting sense. Nor does ‘*x* is not thirsty’ pick out a *negative property* in any metaphysically interesting sense; the individuals satisfying it share a complex property of the metabolic system involving the level of the hormone vasopressin for which there just happens to be no adequate atomic predicate. Just as one need not posit moths over and above *Jugatae* and *Frenatae*, one need not posit *being a Jugatae or a Frenatae* over and above *being a moth*. If a disjunctive designator in the vocabulary of a lower-level science turns out to pick out the same property as a predicate in the vocabulary of a higher-level science, there is a clear sense in which a *reduction* has taken place; the psychophysical reductions based on the *Disjunctive Move* need thus not be completely airy-fairy and they need not invoke any metaphysically mysterious entities.

The crucial question is then whether ‘ $P_1x \vee \dots \vee P_nx$ ’ and ‘*M*’ do pick out the same property in the psychophysical case. The problem is that it is doubtful that ‘ $P_1x \vee \dots \vee P_nx$ ’ picks out a genuine property at all. Not all disjunctive designators pick out a genuine property—‘*x* is a *Jugatae*  $\vee$  *x* is a *Frenatae*’ arguably does, but ‘*x* is a raven  $\vee$  *x* is a writing desk’ (see Armstrong 1978) arguably does not. Sections 3 and 4 discuss two arguments which claim to show that (bi)conditionals in terms of disjunctive designators cannot be laws. These arguments can also be understood as trying to establish that disjunctive designators like ‘ $P_1x \vee \dots \vee P_nx$ ’ do not pick out genuine properties. If sound, they would therefore block the *Disjunctive Move* in both its formulations.

### 3 *The Explanatory Response*

In order to deny P4, it must be shown that (bi)conditionals containing disjunctive designators cannot be *laws*. First of all, laws must support counterfactual conditionals and enable successful predictions. But even if (bi)conditionals containing disjunctive designators satisfy these criteria (Kim 1992, 319; Owens 1989, 198; Seager 1991, 94), two other characteristic features of laws cause trouble. ‘All *F*s are *G*s’ is a law only if, first, it is *confirmed* by its positive instances (i.e. observations of *F*s which are *G* increase confidence that the next observed *F*-item will also be *G*), and, second, it is *explanatory* (‘All emeralds are green’ is a candidate law only because something about *being an emerald* explains why all emeralds are green).



Opponents of the *Disjunctive Move* argue that (bi)conditionals containing disjunctive designators cannot be laws because they are neither explanatory nor confirmed by their positive instances. Section 4 addresses the second objection. This section discusses the *Explanatory Response* to the *Disjunctive Move* according to which (bi)conditionals in terms of disjunctive designators are “*totally useless for explanatory or reductive purposes*” (Marras 1993, 216-217) and “cannot appear in laws because ‘laws’ involving such disjunctions are not explanatory ... they do not meet our interests in explanation” (Pereboom & Kornblith 1991, 126).

If the following argument is sound, the *Disjunctive Move* fails because P4 is false:

- (P1\*) (Bi)conditionals can be laws only if they are explanatory.
- (P2\*) (Bi)conditionals containing disjunctive designators are not explanatory.
- (C1\*) (Bi)conditionals containing disjunctive designators cannot be not laws.

It is at least unclear that P1\* is true. In its favor, one might suggest that whether ‘All *F*s are *G*s’ is a candidate law depends upon whether it is explanatory: since something about *being an emerald* explains why all emeralds are green, ‘All emeralds are green’ is a candidate law, while ‘All males in the main library have five coins in their pockets’ is not a candidate law because there is nothing about *being a male in the main library* that could explain one’s having five coins in one’s pockets. Yet, suppose decades of examination reveal no exception. Wouldn’t ‘All males in the main library have five coins in their pockets’ eventually be considered a candidate law even if it is not explanatory in any straightforward sense? There seems to be a *critical mass* of inductive evidence beyond which the possibility of mere chance is discarded, no matter how unrelated the factors initially seem. Apart from that (this is the argument of Jaworski 2002, 302), suppose Martians give earthian scientists a complete physical theory *T* from which they can derive all phenomena their current best theories can explain (plus several more), although it remains totally mysterious to them why the fact that things are as described in *T* gives rise to how things are.

Ought they deny that the (bi)conditionals of  $T$  are laws simply because they are not explanatory (to them)?<sup>6</sup>

Be that as it may, the real problem is P2\*. According to Hempel's DN-model of explanation, explanations are deductive derivations of explanandum-propositions from explanans-propositions together with statements describing initial conditions (see Hempel 1965). If only derivability mattered, there would be no reason why (bi)conditionals containing disjunctive designators could not be explanatory. Given (10), any explanandum-proposition  $\pi$  deductively derivable from (11) is also derivable from (12):

$$(11) \quad \Box_N(\forall x) (Mx \supset \pi)$$

$$(12) \quad \Box_N(\forall x) ((P_1x \vee \dots \vee P_nx) \supset \pi)$$

If the *Explanatory Response* is to get off the ground, figuring in Hempelian derivations can thus not be *sufficient* for being explanatory. If 'All emeralds are green' is explanatory but (bi)conditionals containing disjunctive designators are not, this must be because the former, but not the latter, has whatever is required in addition to derivability. That Hempel's purely syntactic account of explanation is too weak has long been acknowledged. However, there is no unanimous consensus about how to single out explanatory derivations from non-explanatory ones. The *Explanatory Response* suggests that genuine explanations must be *relevant*, i.e. 'meet our interests in explanation'. For instance, it is in principle possible to derive from the laws of fundamental physics and micro-physical descriptions of Putnam's famous board and peg a micro-level description of the fact that the peg does not fit through the hole. Yet, that description will not be *explanatory* because it is too complicated and brings in too many 'gory details' (see Waters 1990) which are *irrelevant* because they might have been different without any change at the macro-level, but not *vice versa*. Regardless of their micro-level make-up, the peg will not fit through the hole if the former is one inch in diameter and the latter a fraction less than an

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<sup>6</sup> Here is a real-life example that might illustrate Jaworski's point: Our current best theory of quantum electrodynamics predicts infinite values for parameters like mass, although measured values are always finite. *Renormalization group theory* handles this difficulty in a seemingly *ad hoc* way; we know *that* renormalization works, but we do not know (currently) *why* (Sklar 2000, ch. 3). Yet, would we deny that the generalizations of renormalization group theory are law-like only because the readjustments on which it relies are *ad hoc* and fail to be explanatory?

inch across, and this is why the micro-physical details do not seem to be explanatory. However, counterfactual relevance of this kind is not *per se* necessary for explanatory value. If I get cancer after smoking cigarettes containing carcinogenic  $a_1$ , my inhaling  $a_1$  might *explain* why I got cancer even if the latter is counterfactually independent of the former because had I smoked cigarettes containing carcinogenic  $a_2$  instead, I would have gotten cancer, too.

If there turn out to be several carcinogenic ingredients and different cigarettes contain different ones, this does not make the molecular inquiry explanatorily irrelevant to the question of why people get cancer. The fact that  $P$  is multiply realizable does not mean that  $P$ 's realizations fail to explain the singular occurrences that  $P$  explains. A smoker may not want to hear the gory details, but that does not mean that they are not explanatory. (Sober 1999, 549)

One might respond that micro-level accounts are irrelevant because they *miss important generalizations*: micro-level stories about particular pegs and boards miss the important commonality that pegs with one inch in diameter do not fit through holes with a fraction less than an inch across. However, that explanations leave something important out does not *per se* render them irrelevant or non-explanatory. An explanation claiming that the peg does not fit through the hole because Neptune is in the sign of Aries is clearly *irrelevant* in a sense in which the micro-level explanation, though incomplete, is not. That macro-level accounts provide *unifying* explanations does not render non-unifying micro-level accounts irrelevant. Quite the contrary, it can be illuminating to discover that the same effect can be brought about differently, making the appeal to the micro-level details highly explanatory.

Perhaps the mind-body case is special with respect to the alleged lack of explanatory value of (bi)conditionals containing disjunctive designators. Consider the following objection:

When [Hannah] walks down the street to buy an ice-cream cone, we explain her behaviour by appealing to the content of her beliefs, and desires: she wanted an ice-cream cone and she believed one could be purchased down the street. Replacing this explanation by one which contains an open-ended disjunction of physical predicates—if [Hannah] is in state  $P_1$  or  $P_2$  or  $P_3$ , etc. she will move with trajectory  $T_1$ —indeed leaves our interests in explanation unsatisfied. (Pereboom & Kornblith 1991, 127)

Being told that Hannah instantiates ‘ $P_1x \vee \dots \vee P_nx$ ’ does not make one *understand* why her behavior  $b$  occurred, because in contrast to a mentalistic account of  $b$  no *explanation* is given by appeal to ‘ $P_1x \vee \dots \vee P_nx$ ’. However, that Hannah went down the road because she instantiates ‘ $P_1x \vee \dots \vee P_nx$ ’ might be found explanatory by neurophysiologists investigating how different pathways culminate in the same behavior, and it shows that other physical conditions are *not* among the pathways to be investigated (remember that  $\Pi_M = \{P_1, \dots, P_n\}$  is the *exhaustive* set of  $M$ ’s realizers).

What Pereboom and Kornblith say in the passage above does not show that an account couched in terms of ‘ $P_1x \vee \dots \vee P_nx$ ’ is not explanatory at all, but that it does not explain *why Hannah went down the road*, i.e. it fails to explain  $b$  *qua* intentional behavior. Suppose for the sake of argument the *Disjunctive Move* indeed required that an account in terms of ‘ $P_1x \vee \dots \vee P_nx$ ’ explain  $b$  *qua* intentional behavior, although I can see no reason why this should be so, and that it indeed failed to do so. Still, in order for the *Explanatory Response* to be effective, it would have to fail *because* it contains a *disjunctive designator*. Yet, the problem might simply be that a piece of intentional behavior is explained *physicalistically*, not that the explanation contains a disjunctive designator. That Hannah instantiates ‘ $P_1x \vee \dots \vee P_nx$ ’ might not explain  $b$ , but not *because* ‘ $P_1x \vee \dots \vee P_nx$ ’ is a disjunctive designator.<sup>7</sup> Physicalistic accounts of intentional behavior might simply fail to be explanatory because they do not reveal an agent’s *reasons*. This would (perhaps) be a problem for reductive physicalism, but if this is the *only* problem, the *Explanatory Response* is no more problematic for the *Disjunctive Move* than the truth of substance dualism would be: if *no* physicalistic explanation of intentional behavior is possible, the *Disjunctive Move* might fail, but only because reductive physicalism *per se* is untenable. In order to reject the *Disjunctive Move* by appeal to the *Explanatory Response* in the context of a general commitment to physicalism, one would have to argue that non-disjunctive, in contrast to disjunctive, physicalistic explanations of intentional behavior are explanatory, and the

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<sup>7</sup> Incidentally, mentalistic accounts of behavior—Hannah walks down the street because she wants an ice cream cone, and believes she can purchase one down the street, or because she believes they are spying on her and wants them to think she enjoys ice cream, or because she wants to see the ice cream man and believes walking to get a cone an excellent pretense—seem explanatory *even if* they contain disjunctive designators (Jaworski 2002, 300).

typical opponents of the *Disjunctive Move* have never offered any reason for this.

One rejoinder would be that physicalistic explanations in terms of disjunctive designators fail to explain *physicalistic* explananda, too, but this is false for at least some cases (Owens 1989, 198). Another rejoinder would be to concede that some physicalistic explanations in terms of disjunctive designators—‘ $x$  is carcinogenic  $a_1 \vee x$  is carcinogenic  $a_2$ ’, for instance—are explanatory but to insist that ‘ $P_1 \vee \dots \vee P_n$ ’ is more like ‘ $x$  is a raven  $\vee x$  is a writing desk’ and not explanatory. Without any argument, however, this response is *ad hoc*. One argument would be that all and only the individuals satisfying ‘ $x$  is carcinogenic  $a_1 \vee x$  is carcinogenic  $a_2$ ’ but not all and only the individuals satisfying ‘ $P_1 \vee \dots \vee P_n$ ’ or ‘ $x$  is a raven  $\vee x$  is a writing desk’ have something in common from a physical point of view, and this brings us to the second objection, to the question whether the individuals satisfying ‘ $P_1 \vee \dots \vee P_n$ ’ do share a significant commonality.<sup>8</sup>

#### 4 Causal Heterogeneity

According to Fodor, (bi)conditionals containing disjunctive designators cannot be laws because “a necessary condition on a universal generalization being lawlike is that the predicates which constitute its antecedent and consequent should pick out natural kinds” (Fodor 1974, 108). But which predicates pick out natural kinds? According to Fodor, a predicate does not determine a kind if it picks out no property at all or an illegitimate property (Fodor 1997, 158). Yet, it is unclear what a real but illegitimate property would be, and quite apart from that, one cannot say that ‘ $P_1x \vee \dots \vee P_nx$ ’ fails to determine a kind because it does not pick out a property when the alleged fact that it fails to determine a kind is supposed to show eventually that it does not pick out a property (and hence *a fortiori* not the same property as the mental predicate ‘ $M$ ’). At another point, Fodor says that each science  $s$  contains sets of “theoretical and observation predicates such that

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<sup>8</sup> Still another rejoinder might be that the disjunctive designators in the psychophysical case have *infinitely* (or at least *indefinitely*) many disjuncts, i.e. that they are ‘open ended’ (see Pereboom & Kornblith 1991; Zangwill 1995; thanks to an anonymous referee for raising this question). However, I argue in the next section that there are constraints on which, and therefore how many, physical properties can realize a given mental property, so that it is highly unlikely that there is an infinite (or even indefinitely huge) number of realizers for each mental property.

events fall under the laws of the science by virtue of satisfying those predicates” (Fodor 1974, 101), suggesting that ‘ $F$ ’ determines a kind of  $s$  just in case  $s$  posits a law containing ‘ $F$ ’ (Fodor 1974, 102). In the current context, however, this is also circular: (bi)conditionals containing disjunctive designators cannot be laws because they involve the non-kind ‘ $P_1x \vee \dots \vee P_nx$ ’ and ‘ $P_1x \vee \dots \vee P_nx$ ’ is not a kind because it does not figure in laws. A third reason for thinking that ‘ $P_1x \vee \dots \vee P_nx$ ’ cannot determine a physical kind is that predicates pick out kinds only if they are *homogeneous*, i.e. only if the individuals satisfying them have something significant in common *from the point of view of the science whose vocabulary the predicates belong to*. When viewed thus, kinds are individuated on the basis of causal powers: objects with similar causal powers form a kind (Kim 1992, 326). The *Disjunctive Move* therefore seems to fail: a disjunctive designator like ‘ $P_1x \vee \dots \vee P_nx$ ’ is heterogeneous and hence does not pick out a kind.

Some monetary exchanges involve strings of wampum. Some involve dollar bills. And some involve signing one’s name to a check. What are the chances that a disjunction of physical predicates which covers all these events (i.e. a disjunctive predicate which can form the right hand side of a bridge law of the form ‘ $x$  is a monetary exchange  $\equiv \dots$ ’) expresses a physical natural kind? The point is that monetary exchanges have interesting things in common ... But what is interesting about monetary exchanges is surely not their commonalities under *physical* description. (Fodor 1974, 103-104)

Since (bi)conditionals containing disjunctive designators can be laws only if the latter pick out kinds, the foregoing considerations seem to show that P4 is false. Kim raises a similar objection (Kim 1992, 322-327; 1998, 106-110), arguing that the (bi)conditionals of the *Disjunctive Move* are not confirmed by their positive instances and thus *unprojectible*. According to Kim, (13) is not confirmed by its positive instances, and thus not a law, because “jade comprises two distinct minerals with *dissimilar molecular structures*, jadeite and nephrite” (Kim 1992, 319; emphasis S.W.).

(13) All jade is green.

The discovery that jade is effectively a conjunction of two minerals, jadeite and nephrite, Kim claims, reveals that (13) is unprojectible and not a law of its own. The dissimilarity that renders (13) unprojectible is again a dissimilarity in *causal powers*: generalizations about jade cannot be confirmed on the basis of the observation of a finite number of positive in-

stances because these will be either jadeite or nephrite and no evidence for an  $F$  being a  $G$  is also evidence for an  $H$  being a  $G$ , if the  $F$ -items and the  $H$ -items are physically heterogeneous (Owens 1989, 199; Seager 1991, 96):

[W]e can imagine this: on re-examining the records of past observations, we find, to our dismay, that all the positive instances of (L) [i.e. ‘Jade is green’; S.W.] ... turn out to have been samples of jadeite, and none of nephrite! If this should happen, we clearly would not, and should not, continue to think of (L) as well confirmed. ... [A]ll the millions of green jadeite samples *are* positive instances of (L): they satisfy both the antecedent and the consequent of (L). ... however, (L) is not confirmed by them, at least not in the standard way we expect. And the reason, I suggest, is that jade is a true disjunctive kind, a disjunction of two heterogeneous nomic kinds which, however, is not itself a nomic kind. (Kim 1992, 320)

If it turns out after the observation of a large number of green jade samples that they have all been jadeite, says Kim, these observations do not confirm ‘All *jade* is green’. However, as Fodor has pointed out, this at best shows that disjunctive designators fail to be projectible *if* the data basis is biased, and even atomic predicates are unprojectible if the data basis is biased:

Suppose we’ve been considering whether oak trees shed their leaves in winter; and suppose it turns out ... that all our positive instances are observations of oak trees on the north side of hills. Then we would no longer think of the generalization about oak trees losing their leaves in the winter as unambiguously well-confirmed; oak data confirm oak generalizations only if they are an unbiased sample of the oak population ... There is ... something wrong with [(L)]; something that makes it not a law. But [it] isn’t that biased samples fail to confirm it. *Biased* samples don’t confirm *anything*. (Fodor 1997, 151-152)<sup>9</sup>

According to Kim, ‘All African or non-African emeralds are green’, in contrast to ‘All jade is green’, qualifies as a law because ‘ $x$  is an African emerald  $\vee x$  is a non-African emerald’, in contrast to ‘ $x$  is jadeite  $\vee x$  is nephrite’, is *not* heterogeneous and therefore projectible:

There is nothing wrong with disjunctive predicates as such; the trouble arises when the kinds denoted by the disjoined predicates are heterogeneous, ‘wildly disjunctive’, so that instances falling under them do not show the kind of ‘simi-

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<sup>9</sup> Fodor’s own reason for thinking that (L) is not confirmed by its positive instances is discussed below.

larity', or unity, that we expect of instances falling under a single kind. (Kim 1992, 321)

According to Fodor and Kim, thus, it is the causal heterogeneity of ' $P_1x \vee \dots \vee P_nx$ ' which renders it non-projectible and a non-kind. Assuming that (bi)conditionals are laws only if they are projectible and connect kinds, (bi)conditionals containing disjunctive designators can be laws only if they are causally homogeneous. Undeniably, some disjunctive designators—' $x$  is a raven  $\vee x$  is a writing desk' or ' $x$  is carbohydrate synthesis  $\vee x$  is heat', for instance—are causally heterogeneous. In order to reject the *Disjunctive Move*, however, it must be shown that ' $P_1x \vee \dots \vee P_nx$ ' is relevantly similar to those disjunctive designators. And this, I think, is simply not true.

One important argument for the causal heterogeneity of ' $P_1x \vee \dots \vee P_nx$ ' is the standard story about multiple realizability. Since it seems 'chauvinistic' to claim that only creatures with a certain physiological make-up can exemplify mental properties, the functionalist idea that mental properties like *having pain* are second-order properties—the property of having some property or other that satisfies a given *functional role*—sounds attractive. This in turn suggests that ' $P_1x \vee \dots \vee P_nx$ ' is causally heterogeneous because functional roles can apparently be satisfied by a wide variety of radically diverse properties, so that "[w]e could be made of Swiss cheese and it wouldn't matter" (Putnam 1975, 134). However, functional roles are typically characterized in terms of the *causal roles* of properties (or their instantiations) within a network of other properties, and *causal* relations clearly seem to depend upon the *physical* nature of the system at issue. Why, then, do functionalists take it for granted that extremely heterogeneous properties can play the same functional/causal role? As Bieri puts it:

Functionalism ... often pretends to invoke a perfectly clear distinction when it talks of function and its multiple realizations. I have always found this surprising. In most versions of functionalism 'function' means 'causal role'. But causal roles derive from a material's causal [i.e. physical; S.W.] properties. (Bieri 1995, 53)

Sometimes there is a more intimate connection between the physical properties of an object and the functional properties it is capable of having. *Carving glass* is the second-order property of having a property responsible for having more than five degrees on the Mohs scale: *being a topaz*, *being a corundum*, and *being a diamond* are different ways for something to have *carving glass*. Nevertheless, objects having that property cannot be



made of Swiss cheese, nor can they be *extremely heterogeneous*: in order to carve glass, an object must have a very specific molecular structural property. Ned Block expresses this in his *Disney Principle*: “[i]n Walt Disney movies, teacups think and talk, but in the real world, anything that can do those things needs more structure than a teacup. ... laws of nature impose constraints on ways of making something that satisfies a certain description” (Block 1997, 120). Unfortunately, this alone does not show that ‘ $P_1x \vee \dots \vee P_nx$ ’ is causally homogeneous.

Disjunctive designators are not already causally homogeneous only because the individuals satisfying them have *something* in common: everything has something in common with everything, but ‘ $x$  is a raven  $\vee x$  is a writing desk’ is not causally homogeneous only because ravens and writing desks both have, say, a mass. Disjunctive designators are causally homogeneous if all *and only* the individuals satisfying them have something in common (and that something is not describable solely in terms of mere ‘Cambridge properties’—individuals are not causally homogeneous only because they existed at the moment Kennedy was assassinated). ‘ $x$  is an African emerald  $\vee x$  is a non-African emerald’, for instance, is causally homogeneous because all and only the individuals satisfying it have the molecular structure characteristic of emeralds.

Critics of the *Disjunctive Move* think that *qua* homogeneity ‘ $P_1x \vee \dots \vee P_nx$ ’ resembles ‘ $x$  is a raven  $\vee x$  is a writing desk’. I think they are wrong.

If a mental property  $M$  is realized by a physical property  $P$ , an object’s having  $P$  necessitates its having  $M$ , but not *vice versa*. One can explain this in terms of an account of properties according to which properties are individuated in terms of causal powers and a *Subset Model of Realization* according to which  $F$  realizes  $G$  iff the set  $\Gamma_F$  of causal powers individuating  $F$  includes the set  $\Gamma_G$  of causal powers individuating  $G$ :

$$(14) \quad \text{For any physical property } P, P \in \Pi_M \text{ iff } \Gamma_M \subset \Gamma_P.$$

If  $P$  realizes  $M$ ,  $\Gamma_M \subset \Gamma_P$ , so that any individual that has  $P$  in virtue of having  $\Gamma_P$  has  $\Gamma_M$  and thus  $M$ .  $M$  is multiply realizable if there are physical properties  $P_1$  and  $P_2$  such that  $\Gamma_M \subset \Gamma_{P_1}$ ,  $\Gamma_M \subset \Gamma_{P_2}$ , and  $\Gamma_{P_1} \neq \Gamma_{P_2}$ . Assuming that  $M$  is individuated by, say, the set of causal powers  $\{c_3, c_4\}$ , this account of realization and multiple realizability can be illustrated as follows (see Heil 1999, 2003):

$$\begin{array}{ccc}
P_1 & P_2 & P_3 \\
\{c_1 c_2 c_3 c_4 c_5 c_6\} & \{c_1 c_5 c_3 c_4 c_7 c_8\} & \{c_2 c_6 c_3 c_4 c_7 c_8\} \quad \dots \\
\cup & \cup & \cup \\
\{c_3, c_4\} & \{c_3, c_4\} & \{c_3, c_4\} \\
M & M & M
\end{array}$$

Adopting this model of properties and realization, defenders of the *Disjunctive Move* can argue as follows. There is a non-empty set of causal powers  $\Gamma^*$  for ' $P_1x \vee \dots \vee P_nx$ '—but not for ' $x$  is a raven  $\vee x$  is a writing desk', ' $x$  is carbohydrate synthesis  $\vee x$  is heat' etc.—such that (1.) every individual satisfying ' $P_1x \vee \dots \vee P_nx$ ' has every causal power in  $\Gamma^*$ ; and (2.) every individual having every causal power in  $\Gamma^*$  satisfies ' $P_1x \vee \dots \vee P_nx$ '. If this is correct, *all and only* the individuals satisfying ' $P_1x \vee \dots \vee P_nx$ ' have something in common, viz., the intersection  $\Gamma^*$  of the sets of causal powers individuating the  $P_i$  (i.e.  $\Gamma_{P_1} \cap \dots \cap \Gamma_{P_n}$ ) and are thus causally homogeneous, contrary to what the critics of the *Disjunctive Move* claim. But are (1.) and (2.) true? I think they are.

**Proof of (1.):** Suppose  $o$  satisfies ' $P_1x \vee \dots \vee P_nx$ '. Hence,  $o$  satisfies one disjunct ' $P_i$ ' and has  $P_i$  and thus every causal power in  $\Gamma_{P_i}$ . But since  $\Gamma_{P_1} \cap \dots \cap \Gamma_{P_n} \subset \Gamma_{P_i}$ ,  $\Gamma^* \subset \Gamma_{P_i}$ . Therefore,  $o$  has every causal power in  $\Gamma^*$ .

In order to prove (2.), we first need to prove the following *Lemma*:

**Lemma:** If  $o$  has every causal power in  $\Gamma^* = \Gamma_{P_1} \cap \dots \cap \Gamma_{P_n}$ , then  $o$  has all the causal powers in  $\Gamma_{P_i}$  for some  $i$ .<sup>10,11</sup>

<sup>10</sup> Clapp 2001, 127-131 also argues that all and only the individuals satisfying ' $P_1x \vee \dots \vee P_nx$ ' share  $\Gamma^* = \Gamma_{P_1} \cap \dots \cap \Gamma_{P_n}$ . However, he motivates *Lemma* only by appeal to examples, while it remains unclear why one should accept that *Lemma* holds in these examples if one is not already convinced of the *Disjunctive Move* to begin with.

<sup>11</sup> Of course, it is not generally the case that if something has everything in an intersection, it has everything in some set participating in forming that intersection. In fact, I acknowledge this below by saying that "' $P_1x \vee \dots \vee P_nx$ ' differs from ' $x$  is a raven  $\vee x$  is a writing desk' and its likes because the latter does not allow to prove *Lemma*" (see p. 61). The point of the following argument is exactly to show that there is something special about the disjunction ' $P_1x \vee \dots \vee P_nx$ ' and the corresponding intersection of causal powers which enables us to prove *Lemma* in this case.

**Proof of Lemma:** Suppose  $o$  has every causal power in  $\Gamma^* = \Gamma_{P_1} \cap \dots \cap \Gamma_{P_n}$ . Suppose, *for reductio*, that  $o$  has not every causal power in  $\Gamma_M$ . There is thus at least one causal power  $\gamma$  such that  $\gamma \in \Gamma_M$  but  $\gamma \notin \Gamma^*$ . Since  $\gamma \notin \Gamma_{P_1} \cap \dots \cap \Gamma_{P_n}$ , there is at least one  $P_j$  such that  $\gamma \notin \Gamma_{P_j}$ . Hence, some object  $o$  can have every causal power in  $\Gamma_{P_j}$ , but lack  $\gamma$  and so not have every causal power in  $\Gamma_M$ . Hence, by (14),  $P_j$  is not a realizer of  $M$ . But  $\{P_1, \dots, P_n\}$  is the *exhaustive* set of physical realizers of  $M$ , so that  $P_j$  is a realizer of  $M$ . Therefore,  $o$  has every causal power in  $\Gamma_M$ . Hence,  $o$  has  $M$ . Since there are no unrealized or non-physically realized mental properties,  $o$  has a physical property  $P$  individuated by a set  $\Gamma_P$  of causal powers, and  $\Gamma_M \subset \Gamma_P$ . Hence, by (14),  $P \in \Pi_M$ . Therefore,  $o$  has every causal power in  $\Gamma_{P_i}$  for some  $i$ .

**Proof of (2.):** Suppose  $o$  has every causal power in  $\Gamma^* = \Gamma_{P_1} \cap \dots \cap \Gamma_{P_n}$ . Then, by *Lemma*,  $o$  has all the causal powers in  $\Gamma_{P_i}$ , for some  $i$ . Hence,  $o$  has  $P_i$  and satisfies ' $P_i$ '. Therefore,  $o$  satisfies ' $P_1x \vee \dots \vee P_nx$ '.

The philosophical point behind these considerations is that ' $P_1x \vee \dots \vee P_nx$ ' differs from ' $x$  is a raven  $\vee x$  is a writing desk' and its likes because the latter does not allow to prove *Lemma*. In the latter cases the fact that something has all the causal powers in the intersection does not entail that it has one of the properties picked out by the disjuncts—that something has a mass (or whatever else ravens and writing desks have in common) does not make it a raven or a writing desk. In contrast, all and only the individuals satisfying ' $P_1x \vee \dots \vee P_nx$ ' are identical in some respect. This is the important difference between, say, ' $x$  is a raven  $\vee x$  is a writing desk' and ' $P_1x \vee \dots \vee P_nx$ '. If projectibility and kindhood are a matter of causal homogeneity, ' $P_1x \vee \dots \vee P_nx$ ' can thus be projectible and a kind, and the second objection against the *Disjunctive Move* fails.

One response is that this just proves the obvious because what all and only the realizers of  $M$  have in common is of course that they realize  $M$ , while the objection against the *Disjunctive Move* was precisely that this commonality, viz.,  $\Gamma_M$ , is *invisible* from a *physical* point of view. The point, it might be said, was that individuals satisfying ' $P_1x \vee \dots \vee P_nx$ ' fail to be *physically similar* even if they and only they have  $\Gamma_M$ . *Pace* the opponents of the *Disjunctive Move*, however, ' $P_1x \vee \dots \vee P_nx$ ' at least differs

from ‘ $x$  is a raven  $\vee x$  is a writing desk’. Does it also differ from ‘ $x$  is an African emerald  $\vee x$  is a non-African emerald’ because the commonality among the individuals satisfying it is only ‘higher-level’ and not visible from a physical point of view? If the set of causal powers common to all and only emeralds can be physically characterized and studied, why not the causal powers common to all and only the members of  $\Pi_M$ ? Emeralds can be physically characterized because one can formulate physical principles saying which clusters of molecules are emeralds. One reason why this is thought to be impossible in the case of the members of  $\Pi_M$  is that any physical description of them appears to be a “brute enumeration” (Fodor 1974, 104) and “*arbitrary*” (Antony & Levine 1997, 90). However, it is not true that there are *no* physical principles governing the physical realizers of a mental property; if all and only the members of  $\Pi_M$  share causal powers, there *must* be *some* regularity at the (physical) micro-level, for objects have causal powers in virtue of their micro-level constituents, properties and relations.

Moreover, projectibility and kindhood apparently depend upon how the world *is*, not upon how it is *described*—Goodman’s *being grue* is unprojectible no matter how it is described. Thus, if the fact that all and only the individuals satisfying ‘ $P_1x \vee \dots \vee P_nx$ ’ have  $\Gamma^*$  renders them projectible *qua* satisfying ‘ $M$ ’, then it renders them projectible *qua* satisfying ‘ $P_1x \vee \dots \vee P_nx$ ’, because one and the same set of causal powers cannot be projectible and unprojectible. Fodor, however, apparently thinks projectibility and kindhood are linguistic, not worldly, matters and denies that ‘ $M$ ’ and ‘ $P_1x \vee \dots \vee P_nx$ ’ stand and fall together *qua* projectibility. One reason why ‘ $P_1x \vee \dots \vee P_nx$ ’ is supposed to be unprojectible is that it is “not independently certified” (Fodor 1997, 156). Since this means that it does not occur in any law, this once again raises the difficulty of saying what laws are without appealing to projectibility or kindhood. Recently, Fodor distinguished between ‘open’ and ‘closed’ disjunctions (disjunctions are open iff there are metaphysically possible worlds wherein they have realizers they do not have in the actual world; Fodor 1997, 156) and argued that *both* are unprojectible, non-kinds, and unfit for laws.

It’s not hard to see why it’s so plausible that there can’t be laws about *closed* disjunctions. Presumably the nomic properties that a thing has *qua F* or *G* are either properties that it has *qua F* or properties that it has *qua G*. That’s why, if being jade ... is just being jadeite or nephrite ... there are no laws about being jade ‘as such’; all the jade laws are ipso facto either jadeite laws or nephrite laws. (Fodor 1997, 157)

However, to repeat that point, one cannot argue that a thing cannot have its nomic properties *qua*  $F$  or  $G$  to settle the question whether  $F$  or  $G$  picks out a kind, since there would be laws in terms of  $F$  or  $G$  if  $F$  or  $G$  did pick out a kind. What about *open* disjunctive designators?

*Open laws suggest missed generalizations.* To offer a law of the form  $P_1 \vee P_2 \vee \dots \supset Q$  is to invite the charge that one has failed correctly to identify the property in virtue of which the antecedent necessitates the consequent. ... Someone who offers such a law undertakes a burden to provide positive reason that there isn't a *higher level* but *nondisjunctive* property of things that are  $P_1 \vee P_2 \dots$  in virtue of which they bring it about that  $Q$ . (Fodor 1997, 158; predicates and logical symbols altered)

This objection vanishes if the *Disjunctive Move* is understood as suggested in section 2, i.e. as claiming that ' $P_1x \vee \dots \vee P_nx$ ' and ' $M$ ' are coreferential. If the projectibility of ' $P_1x \vee \dots \vee P_nx$ ' depends upon which *property* of the antecedent necessitates the consequent, the *Disjunctive Move* has correctly identified the relevant property by claiming that ' $P_1 \vee P_2 \vee \dots \supset Q$ ' is a law. Fodor claims that "[f]unctionalists are required to deny that pain is *identical to* the disjunction of its realizers. The reason they are is that the functional property realized, *but not its physical realizer*, is projectible" (Fodor 1997, 155). However, Fodor cannot argue that ' $P_1x \vee \dots \vee P_nx$ ' and ' $M$ ' cannot be coreferential because the latter but not the former is projectible when the argument for the claim that ' $P_1x \vee \dots \vee P_nx$ ' is unprojectible relies upon the claim that ' $P_1x \vee \dots \vee P_nx$ ' and ' $M$ ' cannot be coreferential.

Considerations concerning kindhood and projectibility thus provide no reason why (bi)conditionals in terms of disjunctive designators cannot serve as bridge-laws in psychophysical reductions. Together with the failure of the *Explanatory Response* this at least suggests that the *Disjunctive Move* is still a live option for those seeking to make the multiple realizability of mental properties compatible with the possibility of psychophysical reductions.

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DENNIS EARL

# Concepts and Properties

## Abstract.

Concepts and properties are usually considered to be distinct universals, but the present paper argues that of the usual candidates for distinguishing concepts from properties, all are inadequate. The paper also suggests two new candidates: The first claims that concepts are ontologically dependent on their possibly being possessed or grasped by some mind, while properties are not. The second claims that concepts enter into the type-token relation, but properties do not. These latter two criteria are rejected as well, leaving a general, conditional conclusion that if the options discussed exhaust the alternatives, then the concept of being *F* and the property of being *F* are identical.

What is the difference, if any, between a concept and a property? Both are universals: The concept [green]<sup>1</sup> has multiple exemplifications, and those instances are the very same as for the property of being green. Similarly, the concept [taller than] has multiple pairs of entities exemplifying that concept, and those pairs are the same exemplifications as those had by the relational property *taller than*. For every property, it seems that there is a corresponding concept sharing all of the same exemplifications. Yet concepts and properties normally are thought of as different sorts of universals. But what is the difference between the two? What is the necessity of multiplying entities so as to include both sorts of universal? At least six possibilities present themselves:

- (1) Concepts are semantic universals, but properties are not.
- (2) Some verbal expressions express concepts only, but others express both concepts and properties.
- (3) Concepts are individuated by Frege's sense-individuation condition, but properties are not.

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<sup>1</sup> In the paper to follow, concepts will be mentioned by enclosing the words used to express that concept in square brackets. One-place properties will be mentioned using italicized 'being'-clauses. For example, '[green]' refers to the concept of being green, while '*being green*' refers to the property of being green. Italicized 'that'-clauses will be used to mention propositions.

- (4) Concepts are individuated both extensionally and intensionally, but properties are individuated only extensionally.
- (5) Concepts are weakly mind-dependent, but properties are not.
- (6) Concepts may enter into the type-token relation, but properties do not.

The first four options are common enough in the literature, yet as I intend to show below, none are sufficient to distinguish concepts from properties. The fifth and sixth options are new offerings on my part, but despite their promise, they fail to distinguish concepts from properties as well. My general conclusion in this paper is a conditional one: If options (1)-(6) exhaust the options for distinguishing concepts from properties, then concepts and properties are a single sort of universal.

Two initial notes deserve mention. First, I aim to stay as neutral as possible with respect to the issue of what sorts of things universals are in general. That is, I aim to be neutral with respect to the familiar opposition between realists and nominalists in all of their varied forms. For instance, on most platonistic or *ante rem* accounts of universals, there can be necessarily uninstantiated universals, *contra* (4). On such accounts of universals it is also open for properties to be semantic universals (*contra* (1)), thus raising doubts about (2) as well. Yet on *in re* accounts of universals, the commitment to universals being “in” their instances commits such views to there being no necessarily uninstantiated universals. This latter commitment is shared by nominalistic views as well (except for those that admit *impossibilia*, that is). So *in re* and nominalistic views have no such conflict with (4), though they may conflict with (4) for other reasons. One of my aims in this paper is to avoid consideration of such theory-laden criticisms of (1)-(6) where at all possible. While my own inclinations lean toward platonistic accounts of universals, and while my verbiage is certainly that of a realist, I do not intend for those commitments to play an essential role in the conclusions to be drawn here.

The other note to make involves the quite common view of concepts that they are “in the head”. If this were true, my task would seem rather easy. For if concepts are mental particulars of some sort, and the property of being green is not, then concepts are mental and properties are not, and that neatly distinguishes the two. Yet given the fact that concepts are *sharable* (i.e., potentially possessible or graspable by multiple agents), concepts cannot be identical to mental particulars. The concept of being green cannot be in both your head and mine, since what is in your head and

what is in my head are two distinct things, not one. It is what is shared by both of us that is the concept of being green, at least as I aim to investigate the matter here, and it is that sort of entity that is normally thought to be distinct from properties.

## I.

So what might be the difference between concepts and properties? First (following (1) above), it might be thought that concepts are what one might call *semantic universals*, or universals that are akin to (or identical to) semantic values or linguistic meanings of various sorts. Since propositions are what is expressed by complete declarative sentences, and concepts are what is expressed by various sorts of sub-sentential linguistic constructions like predicates, adjectives, and the like, then concepts and propositions are similar in that both are expressible by various sorts of linguistic entities. Properties, on the other hand, might seem not to be the sorts of things that are expressible by anything, even though they are multiply exemplifiable, serve to explain similarities and differences among particulars, etc. So perhaps concepts are semantic universals while properties are not.

The problem with (1) is that while one might consider properties not to be the sorts of things that are expressible, or that they just *seem* to be different than linguistic meanings, that in itself gives little reason to distinguish concepts from properties in that way. For properties might also be semantic values more basic than propositions (and see Oliver 1996, 16), or at least that properties can play the same role as concepts with respect to being semantic values. Perhaps it just as correct to say that the predicate 'is green' expresses the *concept* of being green as it is to say that it expresses the *property* of being green. The principle of minimizing ontological commitments certainly leads in that direction: For concepts and properties both can share the same exemplifications, and one might appeal to both in explaining similarities and differences between particulars. If the only suggested difference is that concepts are meanings and properties are not, then it seems a better, more ontologically efficient suggestion is to posit one sort of universal to play all of those roles.

## II.

Suppose one grants for sake of argument that concepts and properties are both semantic values, or at least that properties *might* also be semantic val-

ues or meanings (where this latter thesis would be enough to cast doubt on (1)). What of option (2)? It could be that for some verbal expressions a concept gets expressed but not a property, even if properties are nevertheless expressed by some other verbal expressions. For instance, if Armstrong (1978, 19-29; 1989, 82-84) is right, then there are no properties that correspond with negative and disjunctive predicates. Take the sentences ‘ $x$  does not have an electric charge of  $4eV$ ’ and ‘ $x$  has either an electric charge of  $4eV$  or a mass of  $2kg$ ’. It looks at first sight as if the concept of being not of charge  $4eV$  gets expressed by ‘does not have an electric charge of  $4eV$ ’ in the former sentence and the concept of having either an electric charge  $4eV$  or a mass of  $2kg$  gets expressed by ‘has either an electric charge of  $4eV$  or a mass of  $2kg$ ’ in the latter sentence.

Could these predicates express properties as well? Armstrong says not, for he argues that there are neither negative nor disjunctive properties. First of all, Armstrong appeals to one of the most basic reasons for positing the existence of universals, namely that universals serve as (at least part of) the explanation for the similarities and differences between particulars. Suppose there is a property of being not of charge  $4eV$ . For all of the particulars that do not have an electric charge of  $4eV$ , in order for them all to be instances of the property of being not of charge  $4eV$ , there would have to be something shared by or “in”<sup>2</sup> all of the things that are not of charge  $4eV$ . But there is nothing in a dead battery, a  $10eV$  battery, and a Cheeto that is the same for all three in virtue of which none of them have an electric charge of  $4eV$ . So there is no such thing as the property of being not of charge  $4eV$ , Armstrong concludes.

Second, Armstrong takes properties to be crucial to a theory of causation. According to Armstrong, a particular thing has the causal powers it does in virtue of its properties. But negative properties would serve no purpose in causal explanation, Armstrong says. Suppose there is a property of not having an electric charge of  $4eV$ : Then anything without an electric charge of  $4eV$  would be an instance of that property. But the having of that property would not bestow any causal powers on things that do not have an electric charge of  $4eV$ , it seems. The idea is that the reason something has the causal powers it does is because of the properties that it has, and only positive factors can serve as an explanation for something’s

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<sup>2</sup> One should note here that Armstrong is giving this criticism of the reality of negative and disjunctive properties from within a framework of *in re* realism about properties. Thus the use of the word “in” here.

causal powers. Negative factors would not have anything to do with the causal powers a thing has, and so there are no negative properties (Armstrong 1978, 23-29; 1989, 83). Similar considerations apply for disjunctive properties, in Armstrong's view. Nothing is shared by, or "in" all things that are either of charge 4eV or 2kg, and having such disjunctive properties would confer no unique causal powers on those particulars that have them. (Armstrong 1978, 19-23; 1989, 82-83).

Now, suppose Armstrong is correct in saying that there are neither negative nor disjunctive properties. Nevertheless, there are predicates that appear to express negative and disjunctive concepts. So perhaps negative and disjunctive concepts are real, but there are neither negative nor disjunctive properties, and perhaps this marks a difference between concepts and properties.

A rejoinder to Armstrong's position is suggested by the following passage in Jackson (1998, 16):

Our notion of properties—properties-in-nature, we might call them—is to be distinguished from the notion of properties allied to concepts or predicate meanings...our properties-in-nature need not be particularly natural. Fish and fowl have something in common over and above the fact that the predicate 'is a fish or a fowl' applies to them but the something in common is not particularly natural.

It looks as if Jackson is just pointing out that there really is *something* in common among any two things or kinds of things, and thus there is a property or concept corresponding to whatever that is. Now, suppose Armstrong's arguments against negative and disjunctive properties are sound, but suppose further that one draws the following distinction: Among the properties, there are the *natural* and the *non-natural* properties. Natural properties are the ones such that there is something "in" their instances in virtue of which they fall into the extension of that property, and that being an instance of a natural property serves as part of the explanation for the causal powers had by that particular thing. But instances of non-natural properties need not have this characteristic. So one might take Armstrong's arguments against negative and disjunctive properties to have weight against the claim that there are *natural* negative and disjunctive properties, but not against the claim that there are non-natural negative and disjunctive properties.

Unfortunately, if the distinction holds up then this way of drawing a distinction between concepts and properties falls through. For there could

then be natural and non-natural concepts, just as there would be natural and non-natural properties. The consequence would be that predicates such as ‘has either an electric charge of 4eV or a mass of 2kg’ would express a property (or concept), but just not a natural property (or concept). But the original Armstrongian idea by which to draw the distinction between concepts and properties was to hold that negative and disjunctive predicates expressed concepts, but not properties. Yet by distinguishing between natural and non-natural properties (and concepts), negative and disjunctive predicates would express properties after all, just not natural ones. So (2) fails to distinguish concepts from properties, since admitting both natural and non-natural properties and concepts preserves the original worry about ontological redundancy.

### III.

Peacocke (1992) offers another way of distinguishing concepts and properties, which for my purposes here is representative of option (3) (which aims to distinguish concepts by Frege’s sense-individuation condition, but not properties). Peacocke says that

[C]oncepts are...to be clearly distinguished from properties. There can be many different concepts *of* the same property (2, my italics).

The proposal is to individuate concepts by use of Frege’s sense-individuation condition. Peacocke suggests that while the property *being red* may itself have the property of being the most perspicuous color of ripe tomatoes and the property of being the color of the former Soviet Union’s flag, the concept [red] is neither identical to [the most perspicuous color of ripe tomatoes] or [the color of the former Soviet Union’s flag]. I believe that red is the color of ripe tomatoes, but I might not believe that red is the color of the former Soviet Union’s flag. But according to Peacocke, while it is true that the color of ripe tomatoes is the color of the former Soviet Union’s flag, the concepts are distinct even though the corresponding properties are the same. So the proposal is this: If two expressions are not substitutable *salva veritate* in intensional contexts, then those expressions do not express the same concept, though they might express the same property.<sup>3</sup>

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<sup>3</sup> Chisholm (1992) takes the very same sort of consideration and infers instead that *properties* are individuated by means of the sense-individuation condition. If Chis-

But the proposal looks to identify concepts with modes of presentation. Peacocke is fairly explicit about this claim:

[T]he theory of this book is...a theory of the level of concepts or modes of presentation... The concepts that concern us are at the level of Frege's senses, since they are individuated by considerations of cognitive significance (1992, 2-3).

So on Peacocke's view, concepts are identified with senses, and senses are in turn identified with modes of presentation.<sup>4</sup> Unfortunately, there is reason to think that concepts are not individuated by the sense-individuation condition, since identifying concepts with Fregean senses or modes of presentation individuates concepts too finely. For instance, a consequence of Peacocke's proposal would be that '*Waverly's* author' and 'author of *Waverly*' actually express different concepts, since the two expressions are potentially different ways of referring to the author of *Waverly*. For instance, someone with only a rudimentary understanding of English grammar might wonder for a moment about whether 'The author of *Waverly* is *Waverly's* author' is true but not for 'The author of *Waverly* is the author of *Waverly*'. In fact, it seems as if any difference in syntax might make for a difference in mode of presentation, and thus a difference in concept. But this entails that for two concepts to be the same, they would have to be presented or expressed in precisely the same way, and this runs counter to one feature of concepts that makes them universals. As a semantic universal, the same concept can be expressed in different ways (by distinct linguistic expressions and by tokens of different types of linguistic expressions). But it seems that two expressions could not express the same concept unless they were numerically the same expression, if concepts are identified with

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holm is right, and the sense-individuation condition is the proper way to distinguish intensional entities, then once again one has lost the distinction between concepts and properties. If they are both individuated by the sense-individuation condition, then one cannot use that condition to draw a distinction between them.

<sup>4</sup> Frege himself also identifies senses with modes of presentation. Yet one might identify concepts with senses but not identify senses with modes of presentation (as do Katz (1992, 2000) and perhaps Fodor (1998)). I am willing to take this line as well, except that the argument in the text above suggests that whatever concepts (or senses) are, they should *not* be distinguished in the same way as modes of presentation. If the point stands, the sense-individuation condition should more properly be called the *mode of presentation*-individuation condition instead.

modes of presentation.<sup>5</sup> It then seems that option (3) is misguided, since one cannot claim that concepts are individuated by the sense-individuation condition and properties are not, in fact concepts are *not* individuated by the sense-individuation condition at all.

#### IV.

Option (4) also attempts to distinguish concepts from properties in virtue of their having different identity conditions, yet in a different way from Peacocke. Consider the following candidate account of the identity conditions for universals:<sup>6</sup>

Universal  $U$  is identical to universal  $V$  iff

- (a)  $U$  and  $V$  are necessarily coextensive, and
- (b)  $U$  and  $V$  have the same analysis.

The account of course might not be correct for all kinds of universals. Perhaps only (a) is necessary and sufficient for property identity, while (a) and (b) together are necessary and sufficient for concept identity. If so, then there is a way of explaining why the properties *being triangular* and *being trilateral* might seem to be the same while the concepts [triangular] and [trilateral] are distinct. Suppose only condition (a) applies to property individuation. It is indeed necessary that everything trilateral is triangular, so according to the present supposition *being trilateral* is the same as *being triangular*. But the analyses of the concepts [triangular] and [trilateral] are distinct, for consider the following propositions:

Necessarily, for all  $x$ ,  $x$  is triangular iff (i)  $x$  is three-angled and  
(ii)  $x$  is a closed plane figure.

Necessarily, for all  $x$ ,  $x$  is trilateral iff (i)  $x$  is three-sided and  
(ii)  $x$  is a closed plane figure.

Condition (ii) is the same for both [triangular] and [trilateral], but condition (i) differs. The concept of being three-angled is not identical to the concept of being three-sided (for among other things, their extensions are dis-

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<sup>5</sup> See also Fodor (1998, 15-21), especially p. 17.

<sup>6</sup> Bealer (1982) considers this sort of account of the identity conditions for universals, but he draws a different sort of conclusion than do I in what follows.



inct). So [triangular] and [trilateral] are distinct concepts, even if *being triangular* and *being trilateral* are identical properties.<sup>7</sup>

There are several difficulties to consider here. First, one needs an argument to the effect that properties are in fact individuated merely in virtue of their extensions across possible worlds. By way of illustrating the difficulty, consider Chisholm's (1992, 15-16) argument to the contrary, namely an argument that condition (a) alone is not necessary and sufficient for property identity. Chisholm claims that for *being equiangular* and *being equilateral*, "there are truths about the one property that are not truths about the other (15)." Furthermore, Chisholm employs the following intentional account of what it is to be a property:

*Being F* is a property iff *being F* is possibly such that there is someone who attributes it (1992, 14; also in 1996, 12).

where *attributing being F* is defined as *believing* that there is something that is *F* (14). The argument against using just condition (1) for property identity then runs like this:

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<sup>7</sup> One might object that [triangular] and [trilateral] have the very same necessary and sufficient conditions, and hold that the proposition *that x is triangular iff x is a three-sided closed plane figure* is also an acceptable analysis of [triangular], for instance. But while the proposition *that x is triangular iff x is a three-sided closed plane figure* is indeed a necessary truth, it is not an *analysis* of [triangular] since there are other conditions that apply to what makes a proposition an analysis, in addition to specifying the possible worlds extension of the concept being analyzed.

(P1) Believing there to be something that is equiangular is distinct from believing there to be something that is equilateral.

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(C1) So, attributing the property of being equiangular is distinct from attributing the property of being equilateral (from (P1), the definition given above, and the relation between attributing and believing).

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(C2) So, *being equiangular* is distinct from *being equilateral*.

(P2) *Being equiangular* and *being equilateral* have the same extension across possible worlds.

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(C3) So, there are properties that are necessarily coextensive but not identical.

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(C4) So, necessary coextension is insufficient for property identity (15).

If the argument goes through, then since condition (a) is insufficient for property identity, then one cannot distinguish properties from concepts by holding that only (a) applies to property identity while both (a) and (b) apply to concept identity.

Chisholm says further by way of clarifying what he takes to be the difficulty with the modal criterion (my condition (a) from above) that “The modal criterion would have the consequence that properties that can be easily grasped are identical with properties that are difficult to grasp (16).”<sup>8</sup> If this claim is intended to stand on its own then it is clearly false. For the inference behind the move from (C1) to (C2) is much like that of the following argument:

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<sup>8</sup> Ackerman (1986, 306; 1990, 537) makes a similar suggestion as evidence for the claim that in an analysis, the analysandum concept is distinct from the analysans concept. As an example, she suggests that the concept of knowledge might be easily grasped while the concept of being an instance of justified true belief not supported by false premises might not be so easily grasped.

(P1) Dennis believes that *a* is triangular (or attributes *being triangular* of *a*).

(P2) Dennis believes that *a* is not trilateral (or attributes *not being trilateral* of *a*).

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(C) So, the property of being triangular  $\neq$  the property of being trilateral.

This is an invalid inference, since it commits the intensional fallacy.<sup>9</sup>

So, on its own the modal criterion does not entail the consequence that Chisholm claims. But if Chisholm's intentional definition of what it is for something to be a property is correct, then his earlier argument looks stronger. One needs something further in order to be convinced, though. Chisholm needs not only an argument to the effect that what it is to be a property is to be something that is attributable to something by someone, but he also needs a defense of the claim that attributing the property of *being F*  $\neq$  attributing the property of *being G* entails that *being F*  $\neq$  *being G*. In other words, Chisholm needs to defend his intentional definition of what a property is, along with an account of the identity conditions for properties in terms of that definition. As for the first task, Chisholm suggests in his (1992) that the medieval way of speaking about universals was to take them as "predicable of many (14)," and the intentional definition is suggested by that way of speaking. But clearly something more is needed than this, and Chisholm seems to provide no argument by way of accomplishing the second task.

In his (1994, 501), Chisholm tries a different line of argument against the modal criterion. First, he assumes a platonistic theory of properties, and suggests further that "According to this presupposition, there are...attributes [properties] that are *unexemplifiable* (501, italics in original)." If there are necessarily uninstantiated but distinct properties, then such properties would all have the same extension across possible worlds (namely the null set, or the null class, or just nothing). For instance if *being a round square* and *being a round triangle* are real properties, but unexemplifiable, then according to the modal criterion they would have the same extension and thus be identical. But intuitively, if *being a round square* and *being a round triangle* are real properties, then they are distinct

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<sup>9</sup> The intensional fallacy is the fallacy of assuming that codesignating terms are substitutable *salva veritate* in all contexts (including intensional ones).

properties. This suggests that the modal criterion is insufficient for property identity.

There are several criticisms to consider. One is unique to Chisholm's argument, and the other is a general point one might make against the thesis that there are necessarily uninstantiated universals. First, Chisholm's claim that platonism entails that there are necessarily uninstantiated universals is contentious. I take platonism with respect to universals to be the thesis that universals are both mind-independent and ontologically prior to their instances—i.e., that they exist even if their instances do not. This implies that on a platonistic view, universals enjoy the status of being abstract objects, in some sense existing independently of space and time, are timeless and indestructible, and so on. If this is the view Chisholm is speaking of in the quoted passage, platonism doesn't entail that there are *unexemplifiable* properties, just that there can be *unexemplified* properties.

Second, '*a* is a round square' looks to be analyzable in terms of what is expressed by '*a* is round and *a* is a square'. This natural analysis suggests that perhaps our ontological commitments need only include the properties *being round* and *being square*, and not *being a round square*. That is, barring some other reason for admitting necessarily uninstantiated universals, one need not admit them.

This argument makes the presumption, it seems, that analysis is a reductive enterprise, and that if something is analyzable in terms of simpler constituents, then one need only commit to the existence of those simpler constituents. If *those* constituents are themselves analyzable in terms of still simpler constituents, then one need only commit to the existence of those simpler constituents, and so on. Yet this presumption seems false. Among other things, the presumption entails that there are no complex concepts. The concept [bachelor] is a complex concept, for instance, since it can be analyzed in terms of [male], [unmarried], and [human]. But if the presumption under consideration is true, then there is no concept of being a bachelor, just [male], [unmarried], and [human]. Yet *those* concepts look to have analyses in terms of simpler concepts, and so there are no concepts [male], [unmarried], and [human]. But surely the concepts [bachelor], [male], [unmarried], and [human] are real concepts, and so the presumption looks false. In short, the analysis of concepts need not be *reductive*, and so the criticism of Chisholm's argument fails. The more general criticism that there are no necessarily uninstantiated universals fails as well, since even if what is expressed by 'is a round square' has an analysis in terms of simpler

concepts, [round square] might still be a concept. The same would seem to hold for properties, so *being a round square* might still be a property.

Furthermore, what the more refined analysis of what is expressed by ‘is a round square’ suggests is that analysis matters after all to the individuation of properties. But if analysis matters to property individuation, then condition (b) matters to property individuation. So, the proposal to individuate properties only by condition (a) and concepts by conditions (a) and (b) is unsatisfactory, and so the proposal to distinguish properties from concepts by this sort of difference in identity conditions falls through.

V.

If options (1)-(4) fail to distinguish adequately between concepts and properties, and if there is a genuine distinction between the two, then what is it? A fifth option ((5) from earlier) distinguishes concepts from properties by means of a dependency relation entered into by concepts but not by properties. Concepts have *something* to do with the mind, one would think, and it seems at first sight that concepts are dependent on the mind in some way, whether in virtue of being mental particulars themselves or something else.

But there are two sorts of mind-dependence that need to be kept separate, for one might take concepts to be mind-dependent in either a strong sense or a weak sense. Consider the following two theses:

*Strong mind-dependence thesis (SMD):* Necessarily, if *C* is a concept then *C* is actually possessed by some agent.

*Weak mind-dependence thesis (WMD):* Necessarily, if *C* is a concept then it is possible for there to be an agent that possesses *C*.

So SMD entails that if there are no actual minds then there are no concepts, but WMD does not. For a view of concepts taking them to be types of mental representations of some kind, then SMD is the thesis that if *C* is a concept then *C* is actually tokened. WMD for such a view of concepts is the thesis that if *C* is a concept then *C* is possibly tokened.

Strongly mind-dependent views of concepts labor under at least two difficulties. The first concerns the categorial function of concepts: Concepts (like properties) are metaphysical categories of things in the world. If concepts are strongly mind-dependent, then those metaphysical categories are strongly mind-dependent as well. But this seems false, since such

categories would still exist even if there were no minds. Presumably there is a real difference between hydrogen and helium, for instance, and if the categories *hydrogen* and *helium* did not exist then there would be no difference between samples of hydrogen *as* hydrogen and samples of helium *as* helium. Yet certainly hydrogen and helium would exist even if there were no minds, and there would be a real difference between samples of each. The objection here is a common one against so-called conceptualist accounts of universals. One function of a theory of universals is to provide an explanatory basis for similarities and differences between particulars, and on an account of concepts taking them to be strongly mind-dependent there would be no such basis if there were no minds. Yet such similarities and differences between particulars would still remain even if there were no minds, and thus SMD is false.

A different family of problems for SMD involves propositions. Propositions are to be analyzed (at least partly) in terms of concepts, and if there were no concepts there would be little to distinguish one proposition from another. The sentences ‘The sun contains hydrogen’ and ‘The sun contains helium’ both express different propositions, and the natural explanation for the difference between them is that the predicates ‘contains hydrogen’ and ‘contains helium’ express different concepts. But if there were no concepts this explanation for the difference between the two propositions in question would be unavailable. On a strongly mind-dependent view of concepts, this would be the consequence if there were no minds at all, yet intuitively the two propositions would remain distinct. Hence it would seem once again that SMD is incorrect.

Still another difficulty for SMD concerns the truth and falsity of propositions. Presumably the right account of concepts and propositions (*qua* universals) will be the same overall theory with respect to both. So the view of propositions corresponding with strong mind-dependence for concepts would be strong mind-dependence for propositions. But there are a number of difficulties with the strong mind-dependence thesis for propositions. One involves the intuition that various propositions would still be true even if there were no minds. For instance, the proposition *that the sun is a star* was true prior to the existence of minds, and would still be true even if there ceased to be any minds. But if there were no minds then the proposition *that the sun is a star* would not even exist (much less be *true*), since on a strongly mind-dependent view propositions are strongly dependent on there being minds. This suggests once more that the corre-

sponding SMD thesis for propositions is false, and thus that concepts are not strongly mind-dependent.

So what then of the weak mind-dependence thesis? WMD only takes concepts to be dependent on the *possibility* of there being token mental representations corresponding to them. Here is one consideration in favor of WMD:<sup>10</sup> If it is the case that necessarily, for all  $x$ , if  $x$  is a concept then  $x$  is possessible by some agent, then it seems WMD follows. For if a condition on something's being a concept is that it could at least be possessed by someone, then it would have to be that concepts are weakly mind-dependent. Now if there happened to be even one unpossessible concept in the sense that it is impossible for any agent ever to possess it, then this argument for WMD would fail. But intuitively it seems wrong that there is a concept such that it would be impossible for there to be any agent that possesses it.<sup>11</sup> So it would appear that WMD is correct: Concepts are mind-dependent, but only in the sense that it must be at least possible for some agent to possess them.

It would seem that properties are not mind-dependent in either the strong or weak sense, and if this is right then it suggests the following distinction: Concepts are weakly mind-dependent, while properties are not mind-dependent in either sense. This would seem to illuminate at least some difference between concepts and properties.

There are two related difficulties to note with respect to option (5). First, it has been granted earlier (in discussion of option (1)) that properties might be semantic universals. If (at least some) properties serve as semantic values of various linguistic expressions, then it seems that properties

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<sup>10</sup> Thanks are due to Robert Hanna for discussion involving this suggestion.

<sup>11</sup> For an opposing view, see Bealer (2002). Bealer points out that there could be some propositions that would be impossible to grasp by any finite mind (or at least by a mind like ours). For instance, a proposition that would only be expressible by a sentence billions of light-years in length would seem to be ungraspable by any mind with cognitive abilities similar to our own. Now consider the predicate of such a sentence, which would seem to express a concept that would be ungraspable by any mind with cognitive abilities similar to our own. I grant that this would be a decisive counterexample against WMD if the weak mind-dependence thesis held that concepts were ontologically dependent on their being possessible *by minds like our own*. However, one should grant that *infinite* minds are at least possible, and WMD merely claims any given concept is ontologically dependent on its being possible for there to be some mind that can possess it. That there could be some concepts that are unpossessible by minds like ours thus seems not to be a counterexample to WMD.

would be weakly mind-dependent. For linguistic meanings are at least graspable or understandable, and as such the very same considerations in favor of the thesis that concepts are weakly mind-dependent would hold *mutatis mutandis* for properties. Second, one might set aside the notion that properties are semantic values and note instead that intuitively, properties are the sorts of things that are understandable or graspable too, just as concepts are understandable or graspable. If for any property it is the case that the property in question is at least understandable by some mind, then that property is weakly mind-dependent. But this seems to hold for any property one considers, and so properties are weakly mind-dependent, just as concepts are. So suggestion (5) fails.

## VI.

Option (6) suggests a sixth possibility for distinguishing concepts from properties. Concepts may enter into two sorts of relation with particulars: (1) the relation exemplified by the relation between mental representation *types* and mental representation *tokens* (where types are construed as types of mental representations of some kind, and tokens are construed as particular representations), and (2) the relation between *universal* and *instance*. According to option (6), concepts may enter into the former sort of relation, but not properties.<sup>12</sup> For example, take the concept [green], and suppose for sake of illustration that concepts are types of mental representations, with the notion of a mental representation left unanalyzed here. As a universal, that concept has both token mental representations as its tokens and particular green things as its instances. But the property of being green would have particular green things as its instances, yet not be *tokened* by anything mental at all.

Nevertheless, *are* concepts types of mental representations? True, a view taking concepts to be mental representation types has the advantage of postulating an explicit tie between concepts and minds, and the type-token relation might then be of assistance in explaining the weak mind-dependence of concepts. Such a view also has the advantageous feature of offering a more refined way of distinguishing concepts from properties.

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<sup>12</sup> The reason for this is that types would also seem to be a sort of property. So all concepts (construed as mental representation types) would be properties, but not all properties are concepts. So on this sort of view, concepts and properties are closely related in that concepts are one *kind* of property.



Yet while taking concepts to be mental representation types looks to be a promising suggestion, I set aside the task of considering detailed support for it here. For some difficulties for the view arise immediately:<sup>13</sup> If concepts are types of mental representations, *what then is a mental representation?* And whatever the right general account of mental representation happens to be, what *sort* of mental representation is it that concepts are types of? Answering these questions would be necessary in order to provide a full account of the commitments of a view of concepts as mental representation types. It also appears that both questions are at least as difficult as that of distinguishing concepts from properties, and perhaps as difficult as that of giving the identity conditions for concepts in general.

However, one might try for a more modest conclusion. For it still seems that concepts may enter into two sorts of relations with particulars, no matter whether concepts are representation types or not, and they are the universal-instance relation and the type-token relation. Even if concepts are not themselves types of mental representations, the weak mind-dependence of concepts still entails that in order for something to be a concept, it must be possible for there to be an agent that can grasp it. So in order for something to be a concept, it then must be possible for there to be an agent such that there is a relation between that concept and *whatever it is* in that agent's mind such that she possesses that concept. This might be a mental representation of some sort, a capacity for various sorts of behavior, a capacity for having various intuitions, or something else entirely. For lack of a better term, one might go ahead and call whatever it is in the mind in virtue of which one possesses a concept a *token* of that concept. But I leave the task of filling in the details of that account to those who seek an account of concept *possession*. What seems to remain is that concepts are dependent on their possibly being tokened, while properties are not.

This is a promising-sounding suggestion, yet the same style of response as that given to option (5) seems forceful here as well. Once again, if properties can be semantic universals (as concepts are), then it seems there would be mental tokens of them. And even setting aside the possibility that properties are semantic universals, they are entities that are at least understandable or intelligible. But if properties are understandable, then it is plausible that they would be tokened in the mind (in the sense of 'tokened' of the previous section). So just as concepts can have exemplifications and can be tokened in the mind, properties also can have exemplifica-

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<sup>13</sup> George Bealer is due thanks for suggesting the following criticisms.

tions and can be tokened in the mind. The ontological redundancy presents itself once again, and so option (6) fails to be attractive as a means of distinguishing concepts from properties.

To sum up, none of the options I listed at the outset hold up as a means to mark a definitive distinction between concepts and properties. If those six options exhaust the possibilities, then concepts and properties should be construed as the very same sort of universal. That is, the concept of being green is identical to the property of being green, the concept of being a star is identical to the property of being a star, and in general, the concept of being  $F$  is identical to the property of being  $F$ , for all  $F$ .

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# Zeit und Persistenz

## ABSTRACT

This paper tries to argue that there is no necessary connection between the conception of persistence and the conception of time based on it. The possession of incompatible properties can, on the one hand, be modified temporally, so that the connection between endurantism and eternalism seems not to be inconsistent. On the other hand, objects can be understood as concrete stages persisting in an exdurantistic manner, so that eternalism is compatible with the assumption of presentism that the object of change only exists at the current point of time. Assuming that this constellation can be worked out, this paper proposes a multi-dimensional account, which connects different areas of explaining persistence. Finally, it is argued that this multi-dimensional account is only justified as long as it is possible to integrate the different areas of explaining persistence in an uniform conception of time. This underlying conception is described as a hybrid conception of time.

## *1. Das Argument der Unvereinbarkeit von Perdurantismus und Endurantismus*

**D**ass sich Dinge im Laufe der Zeit verändern, ist eine unbestreitbare Tatsache. Und obwohl hin und wieder behauptet wurde, dass Zeit auch ohne Veränderung denkbar ist,<sup>1</sup> gilt umgekehrt ebenso, dass Veränderungen, bei denen keinerlei Zeit vergeht, unmöglich sind. Es scheint also kaum erklärungsbedürftig zu sein, dass die Natur der Zeit mit der Natur der Veränderung aufs engste verbunden ist. Weit weniger klar ist jedoch, worin diese enge Verbindung besteht. Von einer Vielzahl von Objekten, die uns im Alltag umgeben, sagen wir, dass sie trotz zahlreicher Veränderungen über die Zeit hinweg weiterbestehen. Nur selten wird ein derartiges Weiterbestehen geleugnet. Völlig strittig ist jedoch, *wie* die Persistenz dieser Objekte zu erklären ist – und wichtiger noch, welche Annahmen über die Natur der Zeit dabei vorausgesetzt werden müssen.

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<sup>1</sup> Vgl. Schoemaker (1969).

Für gewöhnlich wird die Persistenzproblematik so angegangen, dass man zwei für gänzlich unvereinbar gehaltene Erklärungsansätze gegenüberstellt.<sup>2</sup>

*Perdurantistischer Ansatz:* Ein Objekt O persistiert =df. O hat zeitliche Teile und keines dieser Teile ist zu mehr als einem Zeitpunkt völlig gegenwärtig.

*Endurantistischer Ansatz:* Ein Objekt O persistiert =df. O ist völlig gegenwärtig zu mehr als nur einem Zeitpunkt.

Die Gegensätzlichkeit beider Ansätze wird damit begründet, dass zwischen Persistenzerklärung und Zeitvorstellung eine *notwendige* Verbindung besteht, weshalb die Wahl der jeweiligen Zeitkonzeption bereits eine bindende Entscheidung darüber enthält, welcher der beiden Vorschläge abzulehnen sei. Parallel zur bestehenden Unterscheidung wird angenommen, dass der endurantistische Ansatz zwangsläufig mit einer *präsentistischen* Zeitauffassung verbunden ist – wonach nur dasjenige existiert, was in der Gegenwart vorkommt<sup>3</sup> – während die perdurantistische Erklärungsstrategie unweigerlich zu einer *äternalistischen*<sup>4</sup> Sichtweise führt.<sup>5</sup> In ihrer strengsten Formulierung besagt die Annahme einer notwendigen Verknüpfung, dass es keine Welt geben kann, in der sowohl endurantistische als auch perdurantistische Objekte existieren, weil die betreffenden Zeitkonzeptionen kontradiktorisch sind. Diese *Unvereinbarkeitsbehauptung* wird durch das folgende, allgemeine Argument gestützt.<sup>6</sup>

(P1) Aus der Annahme des Äternalismus geht hervor, dass es keine endurantistischen Objekte gibt.

(P2) Aus der Annahme des Präsentismus geht hervor, dass es keine perdurantistischen Objekte gibt.

<sup>2</sup> Vgl. beispielsweise: Lewis (1986), Markosian (1994), Zimmerman (1996).

<sup>3</sup> Als Präsentismus wird genau genommen die Behauptung bezeichnet, dass notwendigerweise gilt: Es ist immer wahr, dass nur gegenwärtige Objekte existieren (Markosian 2004).

<sup>4</sup> Zur äternalistischen Auffassung der Zeit gleich mehr.

<sup>5</sup> Eine solche notwendige Verknüpfung wird unter anderem von folgenden Autoren behauptet: Carter/Hestevold (1994), Loux (1998), Lowe (2001), Merricks (1995, 1999), Parsons (2000), Simons (2000), Runggaldier/Kanzian (1998).

<sup>6</sup> In dieser Form findet sich das Argument vor allem bei Merricks (1995, 530). Ähnlich argumentieren aber auch Carter/Hestevold (1994, 270ff.).

(P3) Äternalismus und Präsentismus sind kontradiktorisch, d. h. sie können weder beide wahr sein, noch sind sie beide falsch.

∴ (K) Aufgrund von (P1) – (P3) gilt: Es gibt keine Welt, in der sowohl endurantistische als auch perdurantistische Objekte existieren.

Gegen das vorliegende Argument kann eingewandt werden, dass es zwar formal gültig ist, aber auf sehr zweifelhaften Prämissen beruht.<sup>7</sup> Eine Klärung der Frage, ob die angeführten Prämissen tatsächlich zu verwerfen sind, ist dabei für die gesamte Diskussion von zentraler Bedeutung. Denn falls sich herausstellen sollte, dass eine notwendige Verknüpfung gemäß der im Argument vorgenommenen Zuordnung nicht gerechtfertigt ist, ergeben sich ganz andere Möglichkeiten, wie das Weiterbestehen von Objekten in der Zeit zu erklären ist.

Ausgehend von dieser Grundkonstellation werde ich die beiden ersten Prämissen eingehend untersuchen, um im Anschluss daran deutlich zu machen, dass es tatsächlich mehr als nur zwei Alternativen gibt, in welche Richtung ein geeignetes Persistenzmodell zu entwickeln ist. Entscheidend dafür wird zweierlei sein: Einerseits lassen sich die Bedingungen, unter denen persistierende Objekte inkompatible Eigenschaften besitzen, zeitlich so modifizieren, dass eine Verbindung aus endurantistischer Persistenzklärung plus äternalistischer Zeitkonzeption völlig natürlich erscheint. Und andererseits wird sich herausstellen, dass die Art der jeweiligen Erklärung im hohen Maße davon abhängig ist, welche Basiskonstituente der entsprechenden Zeitauffassung als Grundlage dient. Anschließend werde ich einen Ansatz vorschlagen, der nicht mehr das Ziel hat, eine einzige Erklärungsstrategie anzugeben, die sich auf alle Arten von persistierenden Objekten gleichermaßen bezieht. Stattdessen wird versucht, mehrere Vorschläge miteinander zu kombinieren. Wobei am Ende zu zeigen sein wird, dass ein solch *mehrdimensionaler* Ansatz nur dann erfolgsversprechend ist, sofern sich die verschiedenen Dimensionen der Erklärung von Persistenz in einer einheitlichen Zeitkonzeption integrieren lassen.

## 2. Endurantismus und die äternalistische Zeitkonzeption

Beginnen wir mit der Rechtfertigung von Prämisse (P1). Was spricht für die dort behauptete Unvereinbarkeit? Ausgangspunkt ist die zentrale Annahme des Äternalismus, welche besagt, dass Objekte, die sich in der Zeit erstrecken, ‚ontologisch robust‘ sind, da sie in Vergangenheit, Gegenwart

<sup>7</sup> Vgl. hierzu: Lombard (1999, 254), Haslanger (2003, 323f.).

und Zukunft auf *gleiche* Weise existieren. Diese Behauptung kann folgendermaßen präzisiert werden:

*Prinzip der zeitlichen Gleichstellung (PzG)*: Ein Objekt O ist ontologisch robust, wenn gilt: O existiert zu verschiedenen Zeitpunkten  $t_1$  bis  $t_n$  in Vergangenheit, Gegenwart und Zukunft & die reale Existenz von O umfasst die Summe  $\{t_1 \dots t_n\}$ .

Geht man von diesem äternalistischen Grundprinzip aus und unterstellt, dass persistierende Objekte prinzipiell in der Lage sein sollten, Veränderungen in Form von (1) zu überstehen:

(1) Objekt O ist gegenwärtig F, obwohl O zuvor  $\neg F$  gewesen ist;

lässt sich zur Rechtfertigung von (P1) ein allgemeines *Problem der Veränderung* formulieren. Gemäß der endurantistischen Persistenzerklärung ist dasjenige kontinuierlich existierende Objekt O, das gegenwärtig F ist, identisch mit demjenigen O, das zuvor  $\neg F$  gewesen ist. Aufgrund der Annahme von (PzG) würde dies jedoch bedeuten, dass das persistierende Objekt in (1) sowohl F als auch  $\neg F$  ist, was eine Verletzung der nachstehenden *Nicht-Widerspruchs-Bedingung* zur Folge hätte:

*Nicht-Widerspruchs-Bedingung (NWB)*: Es ist unmöglich, dass ein persistierendes Objekt O zugleich F und  $\neg F$  ist.<sup>8</sup>

Fasst man nun – wie es gemeinhin üblich ist – die Nicht-Widerspruchs-Bedingung (NWB) als ein basales Kriterium für die Angemessenheit der Persistenzerklärung auf, dann wäre der Endurantismus offenkundig nicht damit vereinbar, dass sich persistierende Objekte verändern können. Die Veränderlichkeit endurantistischer Objekte ließe sich nur dadurch retten, dass man das Prinzip der zeitlichen Gleichstellung (PzG) aufgibt und damit die äternalistische Zeitkonzeption zurückweist. Denn falls dasjenige Objekt, das zuvor  $\neg F$  gewesen ist, nicht in gleicher Weise existiert wie jenes Objekt, das gegenwärtig F ist (weil es bereits vergangen ist), würde natürlich keine Verletzung der Nicht-Widerspruchs-Bedingung (NWB) vorliegen. Andererseits – und darauf kommt es im vorliegenden Kontext eigentlich an – bedeutet das aber auch, wenn das Prinzip der zeitlichen Gleichstellung (PzG) für die äternalistische Zeitkonzeption unabdingbar ist und

<sup>8</sup> Vgl. hierzu: Jubien (1993, 24ff.), Lewis (1986), Merricks (1995, 526).



persistierende Objekte sich verändern können, scheint Prämisse (P1) automatisch zu folgen.<sup>9</sup>

Welche Möglichkeiten gibt es, auf dieses Problem zu reagieren? Lässt man einmal die Annahme beiseite, dass persistierende Objekte möglicherweise gar keinen Veränderungen unterliegen,<sup>10</sup> stehen im Wesentlichen drei Optionen zur Verfügung: (i) Man folgt dem eigentlichen Grundgedanken des obigen Arguments, indem man die Verletzung der Nicht-Widerspruchs-Bedingung (NWB) nicht etwa als allgemeine Widerlegung des Endurantismus' begreift, sondern nur als Zurückweisung einer ganz bestimmten Variante, nämlich der Kombination aus *endurantistischer* Persistenzerklärung plus *äternalistischer* Zeitauffassung.<sup>11</sup> (ii) Man akzeptiert das Ausgangsargument, hält das Prinzip der zeitlichen Gleichstellung (PzG) für völlig unabdingbar und liefert zudem weiterführende Argumente, warum auch innerhalb einer rein *präsentistischen* Zeitkonzeption das Persistenzproblem ungelöst bleiben muss. Dieser Option zufolge wäre der Endurantismus ganz allgemein, also nicht nur in seiner äternalistischen, sondern auch in seiner präsentistischen Spielart abzulehnen.<sup>12</sup> (iii) Oder aber man lehnt die obige *Unvereinbarkeitsbehauptung* ab und hält sowohl am Prinzip der zeitlichen Gleichstellung (PzG) fest, als auch am endurantistischen Persistenzmodell. Muss dann aber zeigen, dass das ursprünglich zur Rechtfertigung von Prämisse (P1) herangezogene ‚Problem der Veränderung‘ keine ernsthafte Schwierigkeit darstellt, weil dessen Lösung im Rahmen einer äternalistischen Auffassung des Endurantismus nicht mit der erwähnten Nicht-Widerspruchs-Bedingung (NWB) kollidiert.

Letzteres würde bedeuten, die Bedingungen, unter denen robuste Objekte zeitliche Veränderungen erfahren, müssten sich so modifizieren lassen, dass der in (1) angedeutete Wechsel nicht als eine Veränderung von inkompatiblen Eigenschaften aufzufassen ist. Wie wäre dies möglich? In der Vergangenheit hat es hierzu verschiedene Vorschläge gegeben, deren gemeinsame Stoßrichtung darin besteht, zu betonen, dass der Zeitpunkt, zu dem ein persistierendes Objekt eine Eigenschaft hat, selbst ein konstitutives Moment des jeweiligen Eigenschaftsbesitzes ist. Entsprechend wurde

<sup>9</sup> Vgl. Merricks (1994, 168), Carter/Hestevold (2003, 503).

<sup>10</sup> Ein mit dieser Auffassung verbundener ‚mereologischer Essentialismus‘ wurde beispielsweise von Chisholm (1973, 581f.) verteidigt.

<sup>11</sup> Genau darin sieht Merricks (1994, 1995) die Zielsetzung seiner Argumentation.

<sup>12</sup> Insbesondere Lewis (1986, 203f.) hat argumentiert, dass eine Kombination aus Präsentismus und endurantistischer Persistenzerklärung unplausibel ist, weil die Annahme einer präsentistischen Position letztlich dazu führen würde, überhaupt nicht mehr formulieren zu können, was Persistenz eigentlich ist.

vorgeschlagen den Besitz einer Eigenschaft entweder als *Relation zur Zeit*,<sup>13</sup> als *zeitliche Relativierung der Kopula*<sup>14</sup> – im Sinne einer dreistelligen Exemplifikationsrelation bestehend aus Träger, Eigenschaft und Zeitpunkt – oder aber als *zeitlich-adverbiale Modifikation* des sog. *einfachen Eigenschaftsbesitzes* zu analysieren:<sup>15</sup>

(2) *Relationen zur Zeit-Ansatz* (*,O ist F-zu-t'*): Objekt O steht gegenwärtig in einer F-Sein-Relation und stand zuvor in einer  $\neg$ F-Sein-Relation.

(3) *Relativierung der Kopula* (*,O ist-zu-t F'*): Objekt O besitzt gegenwärtig die Eigenschaft des F-Seins gemäß der dreistelligen Exemplifikationsrelation [O, F-Sein, gegenwärtiger Zeitpunkt] und hat zuvor die Eigenschaft des  $\neg$ F-Seins gemäß der dreistelligen Exemplifikationsrelation [O,  $\neg$ F-Sein, vergangener Zeitpunkt] besessen.

(4) *Adverbiale Modifikation* (*,O-ist-F zu t'*): Objekt O besitzt gegenwärtig die Eigenschaft des F-Seins gemäß der einfachen Exemplifikation [O, F-Sein] relativ zum gegenwärtigen Zeitpunkt und hat zuvor die Eigenschaft des  $\neg$ F-Seins gemäß der einfachen Exemplifikation [O,  $\neg$ F-Sein] relativ zum vergangenen Zeitpunkt besessen.

In keinem der drei Fälle liegt eine unmittelbare Verletzung der Nicht-Widerspruchs-Bedingung (NWB) vor, so dass das ursprüngliche Problem – mit dessen Hilfe Prämisse (P1) motiviert wurde – beseitigt wäre.

Ohne an dieser Stelle auf Vor- und Nachteile der einzelnen Vorschläge eingehen zu können, ist folgender Punkt hervorzuheben: Unabhängig davon für welchen Ansatz man sich entscheidet, wichtig ist, dass Prämisse (P1) des obigen Arguments zurückzuweisen wäre, sobald sich auch nur einer der genannten Ansätze als brauchbar erweist. Wenn also die äternalistische Zeitkonzeption mit der Annahme endurantistischer Objekte vereinbar sein soll, muss es irgendwie möglich sein, die Veränderungen persistierender Objekte so zu erklären, dass der Besitz inkompatibler Eigenschaften zwar zugelassen wird, aber nicht als eine Verletzung der Nicht-Widerspruchs-Bedingung (NWB) erscheint.

Für einen Verfechter von (P1) stellt sich vor diesem Hintergrund die Frage, ob es einen begründeten Verdacht gibt, generell in Zweifel zu zie-

<sup>13</sup> In jüngster Zeit wurde diese Position vor allem von Hawley (2001, 16ff.) verteidigt.

<sup>14</sup> Vgl. Johnston (1987), van Inwagen (1990), Lombard (2003).

<sup>15</sup> Vgl. Haslanger (1989), Lowe (2001).

hen, dass sich der Besitz einer Eigenschaft zeitlich modifizieren lässt. Tatsächlich gibt es eine solche Überlegung. Die angeführten Paraphrasierungen sind nämlich allesamt dem Vorwurf ausgesetzt, dass eine zeitliche Modifizierung von Eigenschaften in der ein oder anderen Form die folgende Adäquatheitsbedingung verletzt:

*Bedingung des einfachen Eigenschaftsbesitzes (BeE):* Eine angemessene Behandlung der Frage, wie es möglich ist, dass persistierende Objekte zu verschiedenen Zeitpunkten widersprechende Eigenschaften besitzen, sollte:

- (a) das Vorliegen einer Eigenschaft zum Zeitpunkt  $t$  nicht anhand einer bloß relationalen Beziehung – die ein Objekt aufgrund externer Verbindungen zu etwas anderem hat – analysieren, sondern als ein einfaches *intrinsisches* Merkmal des Eigenschaftsträgers begreifen;
- (b) das ‚*einfache Haben*‘ einer Eigenschaft zum Zeitpunkt  $t$  sollte weder durch die Behauptung ersetzt werden, dass zum Zeitpunkt der Instantiierung zwischen Trägerobjekt  $O$ , Eigenschaft  $F$  und Zeitpunkt  $t$  eine dreistellige Relation besteht, noch sollte auf den primitiven Begriff der ‚*einfachen Eigenschaftsexemplifikation*‘ relativ zu einem Zeitpunkt  $t$  zurückgegriffen werden.

Während Paraphrase (2) offenkundig Einschränkung (a) zum Opfer fällt, verstoßen die Vorschläge (3) und (4) gegen Unterbedingung (b). Mit anderen Worten, wenn es korrekt ist, die Persistenzproblematik an die Bedingung des einfachen Eigenschaftsbesitzes zu knüpfen, ließe sich (P1) und damit die Unvereinbarkeit von Endurantismus und äternalistischer Zeitkonzeption weiterhin aufrechterhalten.

Doch was spricht dafür, die eben angeführte Bedingung als Adäquatheitskriterium zu akzeptieren? Ich glaube, dass letztlich nicht sehr viel an (BeE) hängt. Und auf jeden Fall ist es so, dass sich Prämisse (P1) nicht durch deren Einführung rechtfertigen lässt. Da diese Behauptung aber keineswegs unumstritten ist – jedenfalls nicht, was die Unterbedingung (a) von (BeE) anbetrifft – werde ich meine Position kurz zu erläutern versuchen.

## 2. 1 Einfacher Eigenschaftsbesitz und die ‚Proper-Subject‘-Bedingung

Zumeist wird angenommen, dass zumindest Unterbedingung (a) von (BeE) gerechtfertigt ist, weil es immer einiger intrinsischer Eigenschaften bedarf, um genuine Eigenschaftsveränderungen von solchen zu unterscheiden, die nur relativ dazu bestehen, dass sich etwas anderes verändert.<sup>16</sup> Würde man (a) fallen lassen und rein *relationale* Veränderungen zulassen – so das bekannte Argument – wäre eine zentrale Voraussetzung des ursprünglichen Problems verletzt. Insbesondere von Lewis (1986) wurde betont, dass die wirklich problematischen Fälle der Erklärung diachroner Identität genau dann auftreten, wenn Veränderungen über die Zeit hinweg mit einem Wechsel von inkompatiblen Eigenschaften verbunden sind. Der Besitz solcher Eigenschaften lässt sich aber nur anhand der *intrinsischen* Merkmale des zugrundeliegenden Trägerobjekts erklären. Nehmen wir z. B. eine Person, die den Namen ‚Hans‘ trägt; Hans kann zu einem bestimmten Zeitpunkt entweder betrunken sein *oder* nüchtern. Beides zusammen geht offenkundig nicht, denn es gehört zur inneren Beschaffenheit von Hans, stets das eine *oder* das andere zu sein. Dennoch kann Hans die Eigenschaft des Betrunkenseins verlieren, nämlich genau dann, wenn er am nächsten Morgen ausgenüchtert ist. Gemäß der relationalen Sichtweise wäre diese Art der Veränderung jedoch so zu verstehen, als würde dabei kein Wechsel von widersprechenden Eigenschaften stattfinden. Denn sofern die Ursache der Veränderung nicht bei Hans liegt – also dem Träger selbst – sondern als Konsequenz der relationalen Abhängigkeit vom Zeitpunkt zu werten ist (im Sinne einer sukzessiven Abfolge von ‚Betrunkensein zu t1‘ zu ‚Nüchternsein zu t2‘), macht die Rede von inkompatiblen Eigenschaften keinen Sinn mehr. Doch gerade ein Wechsel solcher Eigenschaften wird gemeinhin als der klarste Fall einer Veränderung angesehen.<sup>17</sup>

Gegen diese grundlegende Intuition kann Folgendes eingewandt werden: Bislang gibt es kein schlagendes Argument, warum ein Wechsel von intrinsischen Eigenschaften für das *allgemeine* Problem der Veränderung – welches natürlich nicht nur auf Dinge beschränkt ist, die man traditionell als aristotelische Substanzen (Einzeldinge) bezeichnet hat – zentraler sein soll, als ein Wechsel von *extrinsischen* Eigenschaften.<sup>18</sup> Im Gegenteil, für eine Vielzahl von Entitäten, zu denen vor allem *soziale Objekte* gehören (die natürlich auch materiell konstituiert sein können), ist der Besitz extrin-

<sup>16</sup> Vgl. Haslanger (2003), Lombard (2003), Lowe (2002), Merricks (1995).

<sup>17</sup> Vgl. Lombard (2003, 164).

<sup>18</sup> Ganz ähnliche Überlegungen werden von Hawley (2001) und Rea (2003) angestellt.

sischer Eigenschaften wesentlich.<sup>19</sup> Will man nicht ausschließen, dass so unterschiedliche Objekte wie etwa das europäische Parlament, die deutsche Fußballnationalmannschaft, die Fahne der vereinten Nationen oder die Ehe von Gerhard Schröder in der Zeit existieren und damit vielfältigen Veränderungen unterliegen, darf der Fokus der Persistenzproblematik nicht auf Dinge mit intrinsischen Eigenschaften beschränkt bleiben. Es wäre also viel zu eng, die Rede von persistierenden Objekten nur dort zuzulassen, wo die Annahme von kategorischen Eigenschaften – damit sind Eigenschaften gemeint, die ihre kausale Rolle ausschließlich der Existenz eines inhärenten Trägersubstrats (als materielle Supervenienz-Basis) verdanken<sup>20</sup> – gerechtfertigt ist. Erlaubt man hingegen, dass Objekte auch dann persistieren können, wenn deren grundlegenden Eigenschaften extrinsischer Natur sind, muss der Fokus der entsprechenden Persistenzerklärung erweitert werden.

Darüber hinaus gibt es einen weiteren Grund, warum das bloße Anführen intrinsischer Eigenschaften für sich genommen nicht ausreichend ist, Bedingung (a) des vermeintlichen Adäquatheitskriteriums zu rechtfertigen. Selbst wenn man einmal zugesteht, dass der Besitz einer intrinsischen Eigenschaft keine externen Relationen ihres Trägers zu anderen Objekten beinhaltet (aufgrund des kategorischen Charakters), ist daraus nicht abzuleiten, dass es überhaupt keine externen Relationen gibt – insbesondere keine relationale Abhängigkeit zu einem bestimmten Zeitpunkt. Der entscheidende Fehler, der hier begangen wird, besteht darin, aus der zu Recht behaupteten Unabhängigkeit des Eigenschaftsträgers gegenüber anderen *Objekten*, auf das Nicht-Bestehen einer externen Relation zu einem *Zeitpunkt* zu schließen. Die Unterstellung einer externen Abhängigkeit zu anderen Objekten ist aber nicht dasselbe wie die Behauptung der externen Bezugnahme auf einen Zeitpunkt. Aus der Tatsache, dass einige Eigenschaften existieren, die der Beschaffenheit ihres Trägers verpflichtet sind, folgt nicht, dass der Zeitpunkt, zu dem etwas ein Träger dieser Eigenschaften ist, selbst intrinsischer Natur ist. Das hier zugrundeliegende Problem wird deutlich, sofern der Ausdruck *intrinsisch* nicht als ein *monadisches* Prädikat verwendet wird. Eine Eigenschaft monadisch zu nennen, erweckt den Eindruck, als ob die Welt in der eine intrinsische Eigenschaft instantiiert ist, gewissermaßen zeitlos besteht, d. h. der Besitz dieser Eigenschaft wäre von nichts anderem abhängig, als der bloßen Möglichkeit des Vorhandenseins eines bestimmten Trägersubstrats.

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<sup>19</sup> Vgl. für eine genauere Darstellung dieser Annahme: Schmechtig (2005).

<sup>20</sup> Vgl. hierzu: Prior, E. W. (1982, 93ff.).

Dagegen sind intrinsische Eigenschaften aufgrund ihres Trägers zwar unabhängig gegenüber den Relationen zu anderen Objekten, aber nicht unabhängig gegenüber dem Zeitpunkt, zu dem ein Träger in der aktualen Welt existiert.<sup>21</sup>

Der zuletzt angesprochene Aspekt leitet direkt über zu einem weiteren Punkt: Was spricht dafür Unterbedingung (b) zu postulieren? Vorschläge, die nicht gegen (a), sondern nur gegen Unterbedingung (b) verstoßen, zeichnen sich dadurch aus, dass sie zwar die Auffassung teilen, das eigentliche Problem der Veränderung besteht in der Annahme eines intrinsischen Eigenschaftswechsels, nichtsdestoweniger wird eine Welt, in der das ‚einfache Haben‘ auf nicht-zeitliche Eigenschaften beschränkt ist, für abwegig gehalten. Doch gibt es Gründe eine zeitliche Modifizierung intrinsischer Eigenschaften auch im Sinne von Unterbedingung (b) abzulehnen? Zunächst einmal könnte man ähnlich wie im vorangegangenen Fall betonen – nur eben jetzt angewendet auf das ‚einfache Haben‘ von Eigenschaften – dass eine zeitliche Relativierung der Exemplifikationsrelation (so wie sie beispielsweise in Paraphrase (3) vorgeschlagen wird), ebenfalls die Möglichkeit untergräbt, den Wechsel intrinsischer Eigenschaften als echte Veränderung zu verstehen. Überlegungen dieser Art basieren auf der Annahme, dass bei der Erklärung von Persistenz eine zusätzliche Adäquatheitsbedingung heranzuziehen ist:

*‚Proper-Subject‘-Bedingung:* Der eigentliche Gegenstand der Veränderung (Subjekt) ist diejenige Entität, bei der sich das ‚einfache Haben‘ der Eigenschaften verändert, d. h. deren intrinsische Eigenschaften aufgrund von Veränderungen nicht miteinander vereinbar sind.

Das Anführen dieser Bedingung hat allerdings eine sehr weitreichende Konsequenz: Durch die ‚Proper-Subject‘-Bedingung wird der Spielraum derjenigen, die Prämisse (P1) des Ausgangsarguments für gerechtfertigt halten, noch weiter eingeschränkt. Die angeführte Bedingung stellt nämlich nicht nur für den Endurantismus (in seiner äternalistischen Spielart) ein Problem dar; auch der perdurantistische Ansatz läuft jetzt Gefahr, unter Anführung dieser Bedingung zu versagen.

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<sup>21</sup> Lewis (1988, 65) scheint diese Unterscheidung zwar gesehen zu haben, zieht daraus aber den umgekehrten Schluss, dass die Annahme intrinsischer Eigenschaften letztlich nur in einer monadischen Welt gerechtfertigt ist. Eine direkte Verteidigung der Behauptung, dass Instanzen intrinsischer Eigenschaften zeitlich zu relativieren sind, findet sich hingegen bei Haslanger (1989, 123f.).

In seiner ursprünglichen Fassung ermöglichte der perdurantistische Ansatz eine einfache Lösung des Problems der Veränderung: Ein Objekt O persistiert genau dann, wenn O zeitliche Teile hat und keines dieser Teile zu mehr als einem Zeitpunkt völlig gegenwärtig ist. Was sich tatsächlich ändert, wenn O persistiert, wurde so beschrieben, dass von O jeweils ein anderer zeitlicher Teil gegeben ist. Die widersprechenden Eigenschaften, die O zu verschiedenen Zeitpunkten besitzt, sind kompatibel, weil sie zu den unterschiedlichen zeitlichen Teilen von O gehören. Dabei ist freilich zu bedenken, dass das Subjekt der Veränderung nicht etwa der jeweilige zeitliche Teil ist – zu dem die intrinsische Eigenschaft im Sinne des ‚einfachen Habens‘ eigentlich gehört – sondern das sich nicht verändernde raumzeitliche Ganze (Raum-Zeit-Wurm). So gesehen ist also völlig klar, dass der Perdurantismus in seiner ursprünglichen Fassung (sog. ‚Wurm-Theorie‘) nicht mit der angeführten ‚Proper-Subject‘-Bedingung vereinbar ist.<sup>22</sup>

Damit ergibt sich folgende Situation: Die Bedingung des einfachen Eigenschaftsbesitzes (BeE), deren Einführung ursprünglich dazu gedacht war, eine zeitliche Modifizierung intrinsischer Eigenschaften zurückzuweisen (so wie sie im Rahmen des äternalistischen Endurantismus zur Lösung des ‚Problems der Veränderung‘ vorgeschlagen wurde), erweist sich bei genauerem Hinsehen für den perdurantistischen Ansatz als eine Art Bumerang. Denn ohne eine Abänderung der perdurantistischen Grundannahme, wonach der gesamte Raum-Zeit-Wurm der eigentlich persistierende Gegenstand ist, kann eine zeitliche Modifizierung intrinsischer Eigenschaften nicht auf der Grundlage der ‚Proper-Subject‘-Bedingung in Zweifel gezogen werden. Eine Ablehnung, bei der man sich auf die ‚Proper-Subject‘-Bedingung beruft, wäre allenfalls im Rahmen eines *präsentistischen* Endurantismus vertretbar. Entsprechend stehen dem Perdurantisten drei unterschiedliche Möglichkeiten offen: (i) Ablehnung der ‚Proper-Subject‘-Bedingung unter Beibehaltung der Annahme, dass das eigentlich persistierende Objekt das raumzeitliche Ganze (Raum-Zeit-Wurm) ist. Wobei eingestanden werden muss, dass das Anführen der Bedingung des einfachen Eigenschaftsbesitzes (BeE) *kein* adäquates Mittel ist, den äternalistischen Endurantismus<sup>23</sup> zurückzuweisen, ohne dabei selbst als inkohärent zu er-

<sup>22</sup> Vgl. Sider (2001, 97f.)

<sup>23</sup> Gemeint sind an dieser Stelle vor allem jene endurantistischen Ansätze, die im Sinne von Paraphrase (3) bzw. (4) eine zeitliche Modifizierung intrinsischer Eigenschaften vorschlagen und aufgrund der damit verbundenen äternalistischen Zeitauffassung gegen Unterbedingung (b) von (BeE) verstoßen.

scheinen. (ii) Anerkennung der ‚Proper-Subject‘-Bedingung und Modifizierung der zentralen Grundannahme, d. h. das eigentlich persistierende Objekt ist *nicht* mehr der gesamte Raum-Zeit-Wurm, sondern der jeweilige zeitliche Teil, der zu einem bestimmten Zeitpunkt gegeben ist (das gegenwärtige Stadium). Diese Herangehensweise erfordert jedoch eine gewisse Lockerung des Prinzips der zeitlichen Gleichstellung (PzG). Denn wenn dasjenige, was wirklich persistiert, immer nur als gegenwärtiger zeitlicher Teil (Stadium) gegeben ist, muss der Gegenwart irgendwie doch eine ‚privilegierte‘ Stellung zugesprochen werden. (iii) Anerkennung der ‚Proper-Subject‘-Bedingung unter gleichzeitiger Ablehnung des Prinzips der zeitlichen Gleichstellung (PzG) – jedenfalls so wie es in perdurantistischer Perspektive gelesen wird – d. h. man argumentiert dafür, dass der Perdurantismus im Gegensatz zur herkömmlichen Sichtweise<sup>24</sup> mit einer präsentistischen Zeitkonzeption und der damit verbundenen ontologischen Privilegierung der Gegenwart vereinbar ist.<sup>25</sup>

Ich werde an späterer Stelle auf diese Unterteilung noch einmal zurückkommen. Vorerst ist nur soviel festzuhalten: Wie auch immer man sich im Einzelfall entscheidet, aus perdurantistischer Perspektive gesehen taugt die Einführung der Bedingung des einfachen Eigenschaftsbesitzes (BeE) nicht dazu, Prämisse (P1) des obigen Ausgangsarguments zu rechtfertigen. Entweder sind die jeweiligen Annahmen äußerst umstritten, oder aber sie führen dazu, dass die perdurantistische Persistenzerklärung – was die Frage der zeitlichen Modifizierung des grundlegenden Prinzips der zeitlichen Gleichstellung (PzG) anbetrifft – selbst zu überdenken ist.

Darüber hinaus kann aber auch gezeigt werden, dass es ein Irrtum ist, zu behaupten, der äternalistische Endurantismus müsse in jedem Fall mit der Bedingung des einfachen Eigenschaftsbesitzes (BeE) kollidieren. Probleme, die im Fall von Paraphrase (3) oder (4) auftreten, können leicht umgangen werden, wenn man Ausdrücke der Form ‚zum Zeitpunkt  $t$ ‘ *nicht* als adverbiale Modifikationen der Kopula bzw. der Verbform begreift, sondern als *nicht-wahrheitsfunktionale Operatoren* geschlossener Sätze versteht.<sup>26</sup> Sehr vereinfacht gesagt, bedeutet das: Genauso wie sich aus der modalen Behauptung ‚Es ist möglich,  $x$  ist  $F$ ‘ nicht einfach ‚ $x$  ist  $F$ ‘ ableiten lässt, folgt aus der Äußerung von ‚(zu  $t$ )  $x$  ist  $F$ ‘ nicht die Annahme ‚ $x$  ist  $F$ ‘. Entsprechend mag (5) als geeignete Paraphrase von (1) dienen:

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<sup>24</sup> Eine Verteidigung dieser traditionellen Sichtweise findet sich bei Heller (1992).

<sup>25</sup> Vgl. zu diesem Ansatz: Brogaard (2000).

<sup>26</sup> Vgl. zu diesem Vorschlag: Oderberg (2004, 396).



(5) *Sententialistischer Ansatz* [,(zu  $t$ )  $O$  ist  $F'$ ]: Gegenwärtig ( $t_2$ ) gilt ‚Objekt  $O$  besitzt die Eigenschaft des  $F$ -Seins‘ und zuvor ( $t_1$ ) traf zu ‚Objekt  $O$  besitzt die Eigenschaft des  $\neg F$ -Seins‘;

denn auch (5) stellt keine Verletzung der Nicht-Widerspruchsbedingung (NWB) dar. Aber im Gegensatz zu (3) und (4) hat (5) den großen Vorteil, dass hier das ‚einfache Haben‘ einer Eigenschaft (zu einem Zeitpunkt  $t$ ) mittels geschlossener Sätze analysiert wird. Damit ist von vornherein der Verdacht ausgeräumt, bei zeitlichen Modifikationen könnte es sich um eine bloße Relativierung einzelner Satzbestandteile handeln. Gemäß der *sententialistischen* Lösungsvariante geht es weder um eine Relativierung der Kopula – im Sinne einer dreistelligen Exemplifikationsrelation – noch wird behauptet, dass das Satzsubjekt oder die jeweilige Verbform relativ zu einem Zeitpunkt  $t$  zeitlich modifiziert werden muss. Eine Verletzung der Unterbedingung (b) von (BeE) und des damit verbundenen ‚Proper-Subject‘-Kriteriums ist daher ausgeschlossen.

Vor dem Hintergrund dieser Überlegungen kann ein erstes Fazit gezogen werden: Laut Prämisse (P1) des eingangs angeführten Unvereinbarkeitsarguments folgt aus einer äternalistischen Konzeption der Zeit, dass es keine endurantistischen Objekte geben kann. Die zur Stützung dieser Prämisse vorgebrachten Annahmen erwiesen sich jedoch als nicht durchschlagend. Mit der Zurückweisung von Prämisse (P1) ist daher offen, welche der beiden Zeitauffassungen für das endurantistische Persistenzmodell geeigneter ist. Entsprechend ist festzuhalten, dass sich der Endurantismus – je nachdem, welche Zeitauffassung jeweils zugrundegelegt wird – in zwei ganz unterschiedliche Richtungen weiterentwickeln lässt.<sup>27</sup>

*Präsentistischer Endurantismus*: Ein Objekt  $O$  persistiert =df.  $O$  ist völlig gegenwärtig zu mehr als nur einem Zeitpunkt &  $O$  existiert nur in der Gegenwart.

*Äternalistischer Endurantismus*: Ein Objekt  $O$  persistiert =df.  $O$  ist völlig gegenwärtig zu mehr als nur einem Zeitpunkt &  $O$  ist ontologisch robust.

Aber möglicherweise ist Prämisse (P2) des obigen Unvereinbarkeitsarguments besser gerechtfertigt, so dass zumindest aus Sicht der präsentistischen Position eine verbindliche Einschränkung gemacht werden kann, in

<sup>27</sup> Vgl. hierzu: Haslanger (2003, 324).

Bezug auf welche Zeitkonzeption ein bestimmtes Erklärungsmodell auszuschließen ist. Ich werde diese Möglichkeit im Folgenden genauer betrachten.

### 3. *Perdurantismus und die präsentistische Zeitkonzeption*

Prämisse (P2) des Unvereinbarkeitsarguments macht deutlich, dass eine präsentistische Auffassung der Zeit nicht mit der Existenz perdurantistischer Objekte vereinbar ist. Auch diese Annahme scheint keineswegs selbstverständlich zu sein. Die zentrale Überlegung, die zur Rechtfertigung von (P2) vorgebracht wird, stützt sich vielmehr auf eine weitere Zusatzbedingung:<sup>28</sup>

*Existenzbedingung zeitlicher Teile (EzT):* Ein Objekt O kann zum Zeitpunkt t ein anderes Objekt L nur dann als zeitlichen Teil besitzen, wenn L zu t existiert.

Ausgehend von dieser Bedingung ist relativ leicht einzusehen, was hinter der Annahme von (P2) steckt: Gemäß der perdurantistischen Persistenzklärung besitzt das Prinzip der zeitlichen Gleichstellung (PzG) uneingeschränkte Gültigkeit, so dass für die Mehrzahl der zeitlichen Teile eines persistierenden Objekts angenommen werden muss, dass sie entweder in der Vergangenheit oder in der Zukunft liegen. Demgegenüber besagt die präsentistische Zeitkonzeption, dass es kein existierendes Objekt geben kann, dessen Teile sich außerhalb der Gegenwart befinden. Eine Kombination aus Präsentismus und perdurantistischem Persistenzmodell wäre somit nur auf Kosten einer Verletzung der angeführten Existenzbedingung zeitlicher Teile (EzT) denkbar. Hält man diese hingegen für unangreifbar – wie es Verfechter der Unvereinbarkeitsthese natürlich tun – scheint Prämisse (P2) zwangsläufig zu folgen.

Die entscheidende Frage ist allerdings, ob man als Perdurantist auf die Existenzbedingung zeitlicher Teile (EzT) wirklich festgelegt ist. Lawrence B. Lombard (1999) – der selbst kein Freund von perdurantistischen Objekten ist – hat dies anhand der folgenden Überlegung bestritten: Nach Lombard ist der Ausdruck ‚existiert zur Zeit t‘ *ambivalent*, denn er lässt zwei ganz unterschiedliche Lesarten zu:<sup>29</sup>

<sup>28</sup> Vgl. Merricks (1995, 524).

<sup>29</sup> Eingeführt wurde diese Unterscheidung – allerdings mit anderer Zielsetzung – bereits bei Heller (1992, 701).

„Thus, the Perdurantist distinguishes *two* sense of the expression ‘exists at time *t*’. In one sense, for a thing to exist at *t* is for it to exist ‘in its entirety’ at *t*; in another sense, for a thing to exist at *t* is for it to have a temporal part that exists (in the first sense, that is, in its entirety) at *t*.” (Lombard, B. L. 1999, 256)

Je nachdem, ob Lesart ( $\alpha$ ) ‚*existiert in seiner Gesamtheit zu t*‘ oder Lesart ( $\beta$ ) ‚*hat einen zeitlichen Teil, der in seiner Gesamtheit zu t existiert*‘ favorisiert wird, ergibt sich ein ganz anderes Bild, wie die Frage der Vereinbarkeit von Perdurantismus und Präsentismus zu bewerten ist. Vielleicht muss ja tatsächlich angenommen werden, dass ein Objekt zu einem Zeitpunkt *t* kein anderes Objekt als Teil haben kann, wenn dieses andere Objekt zu *t* nicht existiert. Aber ist der Perdurantismus mit dieser Annahme wirklich unvereinbar? Legt man Lesart ( $\beta$ ) zugrunde, ergeben sich Zweifel. Denn ein Objekt, das im Sinne von ( $\beta$ ) existiert, ist zum Zeitpunkt *t* *nicht* etwa als Summe von zeitlichen Teilen, sondern als einzelner zeitlicher Teil in seiner Gesamtheit gegeben. Wenn etwas gegenwärtig im Sinne von ( $\beta$ ) existiert, hat es seine nicht-gegenwärtigen Teile (vergangene und zukünftige) ‚jetzt‘ gerade nicht. Und dies würde bedeuten: Da es gemäß Lesart ( $\beta$ ) keine weiteren Teile gibt, die zu *t* nicht existieren, liegt kein Verstoß von (EzT) vor. Anders wäre das im Fall von Lesart ( $\alpha$ ): Denn dasjenige Objekt, das in der Summe seiner vergangenen und zukünftigen Teile zu *t* existiert, hat natürlich Teile, die – sofern (PzG) gilt – zwar in der Vergangenheit oder Zukunft existieren, aber nicht zum jetzigen Zeitpunkt gegeben sind. In dieser Lesart wäre (EzT) tatsächlich verletzt.

Lombard hat seine Ambiguitätsthese allerdings nur eingeschränkt vertreten. Er glaubt, dass die Trennung zweier Lesarten von ‚existiert zu *t*‘ übertragen auf materielle Einzeldinge nur wenig Sinn macht und dort eher eine ‚Pseudo-Unterscheidung‘ darstellt.<sup>30</sup> Viel wichtiger ist ihm die Feststellung, dass bei der Erklärung von Persistenz die jeweiligen *Basiskonstituenten* zu berücksichtigen sind. Aus diesem Grund sollte zwischen *Kontinuanten* und *Geschehnissen* (occurrents) getrennt werden.<sup>31</sup> Während Geschehnisse wie etwa Ereignisse oder Prozesse über echte zeitliche Teile verfügen, aber eigentlich keine perdurantistischen Entitäten sind, weil sie zwar *stattfinden*, nicht aber persistieren – jedenfalls nicht wie physikali-

<sup>30</sup> Vgl. Lombard (1999, 257).

<sup>31</sup> Vgl. zu einer ganz ähnlichen Betrachtungsweise: Le Poidevin (2000), Simons (2000), Wiggins (1980).

sche Objekte – würde man von gewöhnlichen Kontinuanten behaupten, dass sie zwar persistieren, aber keine echten zeitlichen Teile besitzen.

Wie lässt sich diese Trennung von Basiskonstituenten begründen? Im Gegensatz zu Kontinuanten scheinen Ereignisse von der Art zu sein, dass sie nicht in der Gesamtheit aller Teile zu jedem Moment ihres Daseins existieren müssen. Ein Ereignis E kann ein anderes Ereignis L als zeitlichen Teil besitzen, gerade wenn L nicht zum Zeitpunkt existiert, zu dem E tatsächlich vorkommt. Dieser Gedanke wirkt vielleicht etwas vertrauter, wenn man folgende Unterscheidung einführt: Bei einem Ereignis kann zwischen dem ‚*Stattfinden*‘ zu einem Zeitpunkt t und dessen ‚*Konstituiert-Sein*‘ in einer zeitlichen Abfolge (Reihe) unterschieden werden. So kann ein Ereignis E ein anderes Ereignis L als zeitlichen Teil besitzen, obwohl L zum Zeitpunkt t des Stattfindens von E selbst nicht vorkommt. Trotzdem existiert L als zeitlicher Teil von E, falls es zur konstitutiven Abfolge von E gehört, dass L bereits stattgefunden hat oder eben noch stattfinden wird. Selbstverständlich wäre es abwegig, zu behaupten, dass ein Ereignis zeitliche Teile besitzt, die selbst gerade stattfinden, aber nicht existieren. Denn stattfindende Ereignisse sind wie existierende Kontinuanten völlig gegenwärtig. Wohl aber kann ein Ereignis zeitliche Teile besitzen, die jetzt *nicht* stattfinden, aber als zeitliche Teile von diesem Ereignis dennoch existieren. So wird z. B. die Eröffnungsveranstaltung der nächsten Fußballweltmeisterschaft in München ein zeitlicher Teil des Ereignisses ‚Fußballweltmeisterschaft 2006‘ sein, der zum Zeitpunkt des Endspiels in Berlin noch existiert, aber als Teil dieses Ereignisses selbst nicht vorkommt, weil dessen Stattfinden bereits vergangen ist.

Demgegenüber hat nun Lombard behauptet, dass eine Trennung zwischen dem Stattfinden eines Objekts und dessen Konstituiert-Sein – bezogen auf die Gesamtheit der zeitlichen Teile, die innerhalb eines Zeitraums gegeben sind – bei echten Kontinuanten keinen rechten Sinn ergibt. Der Grund dafür ist einfach: Bei Kontinuanten ist das Stattfinden zu einem Zeitpunkt und das Konstituiert-Sein im Sinne der Gesamtheit von zeitlichen Teilen nicht voneinander zu trennen. Denn ein echter Kontinuant zu sein, heißt ja gerade, zu *jedem Moment* seiner Existenz in der Gesamtheit aller zeitlichen Teile zu existieren, weshalb es kein Stattfinden gibt, bei dem ein Kontinuant einen zeitlichen Teil besitzt, der jetzt nicht vorkommt, weil er früher stattgefunden hat oder später stattfinden wird. Während Geschehnisse die Existenzbedingung zeitlicher Teile (EzT) nicht erfüllen, da es möglich ist, zu sagen, es gibt andere zeitliche Teile im Sinne der Existenz von Lesart ( $\alpha$ ), ohne gleichzeitig behaupten zu müssen, dass diese

anderen zeitlichen Teile stattfinden – also im Sinne von Lesart ( $\beta$ ) existieren – ist eine solche Differenzierung bei herkömmlichen Kontinuanten ausgeschlossen. Nach Lombard scheitert die Rechtfertigung von Prämisse (P2) nicht daran, dass es womöglich perdurantistische Kontinuanten geben könnte, die mit einer präsentistischen Zeitkonzeption vereinbar sind, sondern deshalb, weil es neben Kontinuanten auch so etwas wie Geschehnisse gibt. Für Entitäten dieser Kategorie gilt: Da ihr Existenzstatus *hybrid* ist (beide Lesarten von ‚existiert zu t‘ sind sinnvoll), muss (EzT) und damit auch (P2) zurückgewiesen werden. Zumindest für Ereignisse und Prozesse gilt, dass sie mit einer präsentistischen Zeitkonzeption kompatibel sind.

Obwohl ich Lombards Argumentation im Grunde genommen für völlig richtig halte, bin ich mit seiner Einschränkung auf Geschehnisse nicht ganz einverstanden. Im Wesentlichen sind es zwei Punkte, die ich vorzubringen habe:

(i) Für den Fall, dass Kontinuanten keine herkömmlichen ‚endurer‘ sind, die zu jedem Zeitpunkt ihrer Existenz völlig gegenwärtig sind, hat Lombard kein Argument gegeben, weshalb die Differenzierung beider Lesarten von ‚existiert zu t‘ angewendet auf gewöhnliche Einzeldinge eine ‚Pseudo-Unterscheidung‘ darstellen soll. Im vorangegangenen Abschnitt wurde bereits deutlich, dass der traditionelle perdurantistische Ansatz offenbar an seine Grenzen stößt, sobald die erwähnte ‚Proper-Subject‘-Bedingung als ein weiteres Adäquatheitskriterium hinzugenommen wird. Einige Autoren haben dies zum Anlass genommen, eine Abänderung vorzuschlagen. Danach ist die Persistenz von Einzeldingen so zu verstehen, dass das eigentlich persistierende Objekt nicht der in seiner Gesamtheit gegebene Raum-Zeit-Wurm (Summe aller zeitlichen Teile) ist, sondern das jeweilige konkrete *Stadium*, das zum gegenwärtigen Zeitpunkt existiert. Unschwer ist zu erkennen, dass diese Weiterentwicklung des perdurantistischen Ansatzes im engen Zusammenhang mit der von Lombard betonten Trennung zweier Lesarten von ‚existiert zu t‘ steht. Während traditionelle Vertreter des Perdurantismus eher Lesart ( $\alpha$ ) favorisieren, indem sie behaupten, dass dasjenige Objekt, auf das referiert wird, sobald wir zu einem Zeitpunkt t über ein bestimmtes Einzelding sprechen, die Gesamtheit aller zeitlichen Teile ist (die dieses Einzelding zu verschiedenen Zeiten besitzt), gehen Vertreter der sog. ‚Stadientheorie‘ von Lesart ( $\beta$ ) aus.<sup>32</sup> Demnach ist die Rede von gewöhnlichen Einzeldingen so zu verstehen, dass zu einem Zeitpunkt t immer auf dasjenige momentane Stadium Bezug genommen wird, das als zeitlicher Teil in seiner Gesamtheit gegenwärtig existiert. Im

<sup>32</sup> Vgl. Hawley (2001, 41ff.) u. Sider (1996, 2001).

Gegensatz zu Lombard gehen Vertreter der Stadientheorie also davon aus, dass eine Trennung beider Lesarten auch in Bezug auf Kontinuanten sinnvoll ist, wobei natürlich mit Rücksicht auf die erwähnte ‚Proper-Subject‘-Bedingung Variante ( $\beta$ ) der Vorzug gegeben wird.

Lombards Beschränkung auf Geschehnisse hat zudem die folgende Konsequenz: Ursprünglich war sein Argument als Widerlegung von Prämisse (P2) gedacht, d. h. als Zurückweisung der Behauptung, dass eine präsentistische Zeitkonzeption mit der Annahme perdurantistischer Objekte unvereinbar ist. Andererseits hat Lombard bestritten, dass Geschehnisse echte perdurantistische Entitäten sind, denn seiner Meinung nach ist der Ausdruck ‚perdurer‘ für materielle Einzeldinge reserviert.<sup>33</sup> Damit wäre sein vollständiges Argument wie folgt wiederzugeben:

- (A1) Prämisse (P2) ist gerechtfertigt, wenn die Existenzbedingung zeitlicher Teile (EzT) erfüllt ist.
- (A2) Aufgrund der verschiedenen Lesarten von ‚existiert zu t‘ ist (EzT) ambivalent.
- (A3) Gemäß Lesart ( $\alpha$ ) von ‚existiert zu t‘ ist (EzT) korrekt, impliziert aber nicht, dass es keine Objekte mit zeitlichen Teilen gibt.
- (A4) Gemäß Lesart ( $\beta$ ) von ‚existiert zu t‘ ist (EzT) nicht korrekt, denn Geschehnisse können zeitliche Teile besitzen, die zu t nicht stattfinden, aber trotzdem existieren.
- (A5) Aus (A2) und (A4) folgt, dass es Umstände gibt, unter denen (EzT) nicht erfüllt ist.
- $\therefore$  (K) Aufgrund von (A1) und (A5) folgt, dass (P2) nicht gerechtfertigt ist.

Dieses Argument ist zumindest als Widerlegung von Prämisse (P2) – die besagte, dass Präsentismus und perdurantistische Objekte nicht vereinbar sind – problematisch. Durch das Hinzufügen der Behauptung, dass Geschehnisse keine perdurantistischen Entitäten sind, kann bestenfalls dafür argumentiert werden, dass aus der Annahme des Präsentismus nicht hervorgeht, dass es keine Objekte mit zeitlichen Teilen gibt.<sup>34</sup> Nur wenn Geschehnisse perdurantistische Entitäten wären, würde (K) zwangsläufig fol-

<sup>33</sup> Vgl. Lombard (1999, 255).

<sup>34</sup> Dies entspricht der Schlussfolgerung, die Lombard am Ende seines Aufsatzes selbst zieht. Unklar bleibt jedoch, warum er unter Voraussetzung dieser Annahme daran festhält, dass sein Argument als eine Widerlegung von (P2) zu lesen ist. Vgl. Lombard (1999, 259).

gen. Obwohl es richtig ist, dass die Rechtfertigung von (P2) auf einer Mehrdeutigkeit von (EzT) basiert, könnte sich ein Befürworter von (P2) folgendermaßen herausreden: Mit der Unterstellung, dass (P2) nur für perdurantistische Entitäten gilt, ist Lesart ( $\beta$ ) von (EzT) eigentlich ausgeschlossen – wie Lombard zumindest indirekt zugesteht, sofern er die Trennung beider Lesarten, angewendet auf materielle Einzeldinge, als ‚Pseudo-Unterscheidung‘ bezeichnet. Mit anderen Worten, würde man (EzT) auf Kontinuanten beschränken, wäre (A5) und damit das Kernstück der Zurückweisung von (P2) gegenstandslos. Lombards Ausgangsargument ist nur dann eine wirkliche Widerlegung von Prämisse (P2), wenn *zusätzlich* angenommen werden darf, dass Geschehnisse perdurantistische Objekte sind – oder aber die Unterscheidung beider Lesarten auch auf materielle Einzeldinge anwendbar ist. Entweder scheitert der Versuch (P2) zu widerlegen, wobei sich dann immer noch behaupten ließe, dass die Unvereinbarkeitsbehauptung aufgrund der fehlerhaften Prämisse (P1) abzulehnen ist. Oder aber man beharrt auf der Widerlegung von (P2), muss dann aber wenigstens eine der beiden Zusatzannahmen billigend in Kauf nehmen.

(ii) Damit bin ich bei einem zweiten Punkt angelangt: Was spricht eigentlich dagegen, Geschehnisse wie persistierende Objekte zu behandeln? In erster Linie sind hier wohl zwei Dinge zu nennen: Gemäß einer langen bis auf Aristoteles zurückreichenden Tradition beruhen Geschehnisse auf Veränderungen, wobei echte Veränderungen stets *in* oder *an* Dingen stattfinden.<sup>35</sup> Dieser Umstand hat dazu beigetragen, insbesondere Ereignisse als *ontologisch abhängige* Entitäten zu betrachten. Denn Ereignisse – so die verbreitete Ansicht – besitzen keine unabhängige räumliche Position, anhand der sie sich identifizieren lassen. Vielmehr sind es die räumlichen Eigenschaften ihrer Träger, welche eine konkrete Lokalisierung ermöglichen.<sup>36</sup> Zwar gibt es einige Ereignisse, die nicht von konkreten Einzeldingen abhängen (z. B. Veränderungen von Gravitationsfeldern), aber auch hier ist die Annahme einer Trägersubstanz, die als notwendiger Konstituent für das Auftreten des Ereignisses vorhanden sein muss, nicht ganz außer Kraft gesetzt. Für sich genommen scheinen Trägersubstanzen auch ohne Veränderungen existieren zu können, weshalb der Gedanke nahe liegt, dass angesichts der bestehenden *asymmetrischen* Abhängigkeitsbeziehung nur die zugrundeliegenden Träger persistieren, wohingegen die vermeintliche Dauerhaftigkeit der Ereignisse davon bloß abgeleitet ist.

<sup>35</sup> Vgl. zu diesem Aspekt: Lowe (2001, 124f.).

<sup>36</sup> Vgl. Strawson (1972, 66).

Demgegenüber lässt sich einwenden, dass bereits die Behauptung einer asymmetrischen Abhängigkeitsbeziehung zweifelhaft ist. Es scheint eine Vielzahl von Dingen zu geben, die überhaupt nicht identifiziert werden können, ohne dass dabei gleichzeitig auf bestimmte Ereignisse Bezug genommen wird. Für eine große Anzahl von Gegenständen gilt – als Paradebeispiel dienen mir wieder soziale Objekte – dass sie nicht ohne das Auftreten einiger für sie notwendiger Ereignisse existieren können. Universitäten, Parlamente, Klöster, Firmen usw. erfordern beispielsweise nicht nur ein entsprechendes *Gründungsereignis* – das für die Zeit ihres Bestehens konstitutiv bleibt, weshalb auch später immer wieder darauf Bezug genommen werden muss – sie kommen auch nicht ohne *notwendig wiederkehrende* Ereignisse aus (z. B. die Neuwahl von Rektoren, Regierungen, Oberhäuptern, Vorstandsmitgliedern). Natürlich bestehen soziale Objekte nicht nur aus Ereignissen, dennoch ist unbestreitbar, dass einige Ereignisse unabdingbar sind, weil ohne deren Stattfinden die entsprechenden Objekte gar nicht existieren könnten. Es wäre daher falsch, zu glauben, die Re-Identifikation solcher Objekte ließe sich rein räumlich mittels bloßer Lokalisierungen bewerkstelligen.<sup>37</sup> Betrachtet man die Re-Identifikation nicht nur rein räumlich, sondern unter dem Aspekt der Zeitlichkeit ihrer Persistenzbedingungen, erweist sich die behauptete Asymmetriebeziehung als hinfällig.<sup>38</sup>

Das zweite zentrale Problem ergibt sich bezüglich der Frage, wie im Rahmen eines gewandelten Perduranz-Modells – bei dem dauerhafte Objekte mit kurzlebigen Stadien identifiziert werden – die Persistenzrelation zu verstehen ist. Die besondere Schwierigkeit liegt hier darin, dass gewöhnliche Objekte – da sie kurzlebige Stadien sind – nur momentan existieren. Andererseits sollen sie im gleichen Atemzug als persistierende Dinge behandelt werden, die dauerhaft weiterbestehen. Doch wenn die einzelnen Objektstadien weder gewöhnliche ‚endurer‘ sind, noch in der Gesamtheit ihrer Phasen gegenwärtig existieren, was heißt es dann, von verschiedenen aufeinanderfolgenden zeitlichen Stadien zu sagen, dass sie *dieselben* sind? Was verbindet diese Stadien?

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<sup>37</sup> Vgl. zur Begründung dieser Behauptung: Davidson (1980, 175) u. Kanzian (2001, 244).

<sup>38</sup> Ich würde sogar so weit gehen, nicht nur die Einseitigkeit der Abhängigkeit zu bezweifeln, sondern ebenso die These in Frage stellen, dass Trägerobjekte – wie öfters behauptet wurde – zwangsläufig *intrinsische* Konstituenten von Ereignissen sind. Vgl. zu gegenteiligen Überlegungen: Kanzian (2001, 245).



Vertreter der Stadientheorie greifen an dieser Stelle auf die von David Lewis (1968) ins Leben gerufene sog. ‚Counterpart‘-Theorie zurück.<sup>39</sup> Danach persistiert ein Objekt nicht, weil es eine frühere Entität gab, die jetzt *als* diese frühere Entität weiterexistiert oder zukünftig weiterexistieren wird; vielmehr müssen frühere oder spätere Phasen als Vorgänger- bzw. Nachfolgerstadien betrachtet werden, mit denen das gegenwärtige Objekt aufgrund von externen Relationen direkt verbunden ist. Die Rede von zeitlichen ‚Counterparts‘ soll deutlich machen, dass diejenige Welt, in der ein Objekt O momentan existiert, nicht mit jenen Welten identisch ist, die ein Vorgänger- bzw. Nachfolgerstadium von O enthalten, obgleich O mit ihnen unmittelbar verbunden ist. Bei den Vorgänger- bzw. Nachfolgerstadien handelt es sich um Welten, in denen O zwar nicht selbst, aber eben ein ‚Counterpart‘ von O existiert. Ein Ausdruck wie z. B. ‚mein Computer‘ referiert daher nicht auf eine zeitlich ausgestreckte Menge von relativ unselbstständigen Teilen, sondern auf ein konkretes gegenwärtiges Computerstadium, das angesichts verschiedener vorausgehender und nachfolgender ‚Counterparts‘ in der Zeit persistiert.

### 3. 1 Der exdurantistische Erklärungsansatz

Mit der Annahme einer ‚Counterpart‘-Relation wird für die Persistenzproblematik eine neuartige Perspektive eröffnet. Statt von einer strikten Entgegensetzung im Sinne der diskutierten Unvereinbarkeitsbehauptung auszugehen, besteht nunmehr die Möglichkeit, das Weiterbestehen eines Objektes in der Zeit anhand von externen Relationen zu bestimmen, *ohne* dabei behaupten zu müssen, dass das eigentliche ‚Subjekt‘ der Veränderung – die tatsächlich persistierende Entität – zum Zeitpunkt des Wechsels nicht gegenwärtig ist. Infolgedessen lassen sich zwei zentrale Gedanken der vermeintlich konträren Persistenzmodelle miteinander verbinden: *Einerseits* kann aufgrund der angenommenen ‚Counterpart‘-Relation am äternalistischen Prinzip der zeitlichen Gleichstellung (PzG) festgehalten werden. *Andererseits* wird auch der präsentistischen Sichtweise – die üblicherweise dem endurantistischen Modell vorbehalten ist – Rechnung getragen; denn die zentrale ‚Proper-Subject‘-Bedingung bleibt unter dieser neuen Betrachtungsweise unversehrt. Die Verschmelzung beider Elemente berechtigt dazu, von einem dritten, eigenständigen Persistenzmodell zu sprechen:

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<sup>39</sup> Zu beachten ist jedoch, dass Befürworter einer ‚Counterpart‘-Theorie (Forbes 1984, Hazen 1979, Heller 1998, Sider 1996, Stalnaker 1986) keineswegs darauf verpflichtet sind, Lewis‘ modalen Realismus zu teilen.

*Exduranz-Ansatz*: Ein Objekt *O* persistiert =df. *O* ist ein momentanes Stadium, das aufgrund von externen Relationen zu zeitlichen ‚Counterparts‘ (Vorgänger- und Nachfolgerstadien) über verschiedene Zeitpunkte hinweg existiert.<sup>40</sup>

Nimmt man diesen Ansatz als Grundlage, ist der Unterschied zwischen dem perdurantistischen Ausgangsmodell und der modifizierten Stadientheorie wie folgt zu rekapitulieren: Während die Stadientheorie davon ausgeht, dass gewöhnliche Kontinuanten Objektphasen sind, die auf *exdurantistische* Weise persistieren, behauptet der traditionelle Perdurantist, dass sie aus zeitlichen Teilen bestehen, wobei nur die Gesamtheit dieser Teile über verschiedene Zeitpunkte hinweg dauerhaft existiert. Damit wird einsichtig, warum Vertreter der Stadientheorie in der Lage sind, zu behaupten, dass Lesart ( $\beta$ ) von ‚existiert zu *t*‘ angewendet auf gewöhnliche Kontinuanten sinnvoll ist. Falls Kontinuanten wirklich in *exdurantistischer* Weise persistieren, dann ist dasjenige Objekt, auf das zu einem Zeitpunkt *t* Bezug genommen wird, nicht wie im Fall des Ausgangsmodells als die Summe zeitlicher Teile (Raum-Zeit-Wurm) gegeben, sondern stets als ein momentanes Stadium gegenwärtig.<sup>41</sup>

Folgt man dem *exdurantistischen* Erklärungsansatz scheint die Zurückweisung von (EzT) *kein* Kriterium zu liefern, mit dessen Hilfe Geschehnisse von Kontinuanten klar zu trennen sind. Was bedeutet das für die Verwendung der verschiedenen Basiskonstituenten? Ist eine derartige Unterscheidung überhaupt noch sinnvoll? Tatsächlich sind die Umstände unter

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<sup>40</sup> Der Begriff ‚Exduranz‘ geht auf Haslanger (2003, 319) zurück und soll deutlich machen, dass die Dauer eines Objekts *O* durch Relationen zu Entitäten zustande kommt, die zum Zeitpunkt der gegenwärtigen Existenz von *O* außerhalb dieses Objekts liegen.

<sup>41</sup> Damit ist natürlich nicht gesagt, dass der *exdurantistische* Ansatz keine Probleme hat. Fragen ergeben sich vor allem in dreierlei Hinsicht: (i) Worin genau besteht die ‚externe Relation‘, die ein gegenwärtiges Stadium mit vergangenen oder zukünftigen Phasen verbindet? Was berechtigt uns, vom gegenwärtigen Stadium zu behaupten, dass es in Bezug auf vorangegangene oder zukünftige Stadien in der ‚Relation der Gleichheit‘ steht? (ii) Wenn jedes instantane gegenstands-ähnliche Stadium ein echter Gegenstand ist, gibt es dann genauso viele Gegenstände, wie es instantane Stadien gibt? (ii) Wie können sog. ‚lingering predicates‘ (wie z. B. ‚ist gewachsen‘) oder historische Prädikate – bei denen vorausgesetzt wird, dass es einen kontinuierlich andauernden Bezugsgegenstand gibt – auf kurzlebige Stadien angewendet werden? Vgl. zur Diskussion dieser Fragen: Hawley (2001).

denen Kontinuanten gegen (EzT) verstoßen nicht dieselben wie im Fall von Geschehnissen. Während ein Ereignis E zum Zeitpunkt t im Sinne von Lesart ( $\beta$ ) existieren kann, weil es möglich ist, dass E ein anderes Ereignis L als *zeitlichen Teil* besitzt, gleichwohl L zu t nicht stattfindet, ist die Rede von zeitlichen Teilen, die zum gegenwärtigen Zeitpunkt nicht existieren, bei Kontinuanten problematisch. Der Grund dafür ist Folgender: Zwar ist ein Kontinuant in exdurantistischer Sichtweise mit Vorgänger- und Nachfolgerstadien (zeitliche ‚Counterparts‘) verbunden, die zum gegenwärtigen Zeitpunkt nicht vorkommen. Diese Verbindung kann aber nicht wie bei Ereignissen als eine Form des ‚Konstituiert-Seins‘ in derselben zeitlichen Abfolge (Reihe) begriffen werden. Bei Ereignissen scheint es einigermaßen plausibel zu sein, von zeitlichen Teilen zu sprechen, die bereits vergangen sind, aber insofern noch existieren, als sie durch dieselbe zeitliche Abfolge konstituiert sind, in der auch das in der Gegenwart stattfindende Ereignis verankert ist. Denn mit Ereignissen eng verbunden ist eine Form der Veränderung – nämlich ein sog. *zeitliches Entstehen bzw. Vergehen in der Gegenwart* – die für Kontinuanten nicht zutreffend ist. Normalerweise gehen wir davon aus, dass ein Kontinuant, sobald er aufhört in der Gegenwart vorzukommen, nicht mehr existiert, d. h. es gibt auch keine für ihn konstitutive zeitliche Abfolge mehr. Von Veränderungen im Sinne des (vorübergehenden) Entstehens bzw. Vergehens in der Gegenwart sind offenkundig nur Ereignisse oder Prozesse betroffen. Kontinuanten verändern sich hingegen nur relativ zu einem Zeitpunkt *in* der Gegenwart, d. h. sie persistieren weder in der Vergangenheit noch existieren sie – jedenfalls in einem ernstzunehmenden Sinne – in der Zukunft.

Die soeben angedeutete Trennung ist für den exdurantistischen Ansatz von zentraler Bedeutung. Denn je nachdem, ob sich stärker an der Veränderung von Kontinuanten oder an der Veränderung von Geschehnissen orientiert wird, ergeben sich ganz unterschiedliche Ansichten darüber, wie der Zusammenhang von Persistenz und Zeitkonzeption zu charakterisieren ist. Einige Vertreter des exdurantistischen Ansatzes sind der Überzeugung, dass sämtliche Veränderungen – die bestehende Objekte aufgrund ihres zeitlichen Fortbestehens über sich ergehen lassen müssen – als ein rein indexikalisches Phänomen zu behandeln sind und daher eine sog. *tempuslose* Konzeption der Zeit erfordern.<sup>42</sup> Damit verbunden ist die Annahme, dass

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<sup>42</sup> Trotz der zum Teil gravierenden Unterschiede bezüglich der zeitlichen Charakterisierung externer Relationen wird mehrheitlich die Ansicht vertreten, dass die Stadien-theorie – was die Art der Basiskonstituenten anbetrifft – nur mit einer perdurantisti-

das äternalistische Prinzip der zeitlichen Gleichstellung (PzG) zwar in gewisser Hinsicht präzisiert werden muss – insofern die Rede über persistierende Objekte eine direkte Bezugnahme auf das gegenwärtige Stadium beinhaltet – aber abgesehen davon kann die perdurantistische Auslegung dieses Prinzips im vollen Umfang erhalten bleiben. Ausschlaggebend hierfür ist die Behauptung, dass das Bestehen externer Relationen zwischen Vorgänger- und Nachfolgerstadien in Analogie zur *räumlichen* Ausdehnung physikalischer Objekte gedacht wird. Demnach lassen sich Veränderungen, die mit den unterschiedlichen externen Relationen verbunden sind, allein mit Hilfe tempusloser Charakterisierungen der sog. B-Reihe der Zeit beschreiben, d. h. mit relationalen Festlegungen des früher-als, später-als oder gleichzeitig-mit. Und folgerichtig wird die zeitliche Abfolge momentaner Stadien so gedacht, dass sie gerade *kein* zeitliches Entstehen bzw. Vergehen in der Gegenwart beinhaltet, sondern gewissermaßen mit einem Schlag in Form eines sog. ‚Block-Universums‘ gegeben ist.<sup>43</sup>

Befürworter des exdurantistischen Ansatzes, die sich stattdessen stärker an Geschehnissen orientieren, sind der Auffassung, dass eine solche räumliche Auslegung des Prinzips der zeitlichen Gleichstellung (PzG) verfehlt ist. Denn führt man sich vor Augen, dass *genuin zeitliche* Veränderungen nicht auf das bloße ‚Bestehen‘ oder ‚Nicht-Bestehen‘ von externen Relationen zu verschiedenen Zeitpunkten reduzierbar sind, sondern auf *gerichteten Bewegungen* basieren – d. h. das Vorliegen einer externen Relation ist selbst ein Ereignis, das zunächst zukünftig war, dann in der Gegenwart stattfand und später vergangen ist – dann kann das zeitliche Entstehen bzw. Vergehen von Geschehnissen (ihr Stattfinden in der Gegenwart) nicht in Analogie zur räumlichen Ausdehnung von Einzeldingen gesehen werden. Als *dynamische* Objekte verändern sich Geschehnisse nicht im Raum, so dass die zeitliche Abfolge momentaner Stadien nicht in einem einzelnen Akt im Sinne des erwähnten ‚Block-Universums‘ gegeben ist. Vielmehr ist zu betonen, dass die zeitliche Perspektive, in der ein Wechsel von vorangegangenen und nachfolgenden Stadien stattfindet, zwar eine zusätzliche Dimension ist, aber eben eine solche, die sich *sukzessive* entwickelt. Aus diesem Grund ist in Bezug auf die Art wie Geschehnisse in der Gegenwart stattfinden eine bloß räumliche Deutung des Prinzips der zeitlichen Gleichstellung (PzG) grundsätzlich abzulehnen.<sup>44</sup>

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schen Ontologie und der damit verbundenen tempuslosen Zeitkonzeption kompatibel ist. Vgl. Hawley (2001, 33/42), Haslanger (2003b, 2), Sider (2001, 11ff.).

<sup>43</sup> Vgl. hierzu: Sider (2001, 14ff.).

<sup>44</sup> Vgl. ausführlich zu dieser Position: Brogaard (2000, 345ff.).

Damit ergibt sich auch im vorliegenden Zusammenhang – parallel zur Diskussion des endurantistischen Persistenzmodells – ein differenziertes Bild: Abhängig davon, welche Auffassung von zeitlichen Veränderungen zugrunde gelegt wird, sind zwei unterschiedliche Richtungen denkbar, wie sich der exdurantistische Ansatz weiterentwickeln lässt:

*Äternalistischer Exdurantismus:* Ein Objekt O persistiert =df. O ist ein momentanes Stadium, das aufgrund von externen Relationen zu zeitlichen ‚Counterparts‘ (Vorgänger- und Nachfolgerstadien) über einen bestimmten Zeitraum (ZR) existiert & die reale Existenz von O umfasst die Summe aller ‚Counterparts‘ innerhalb (ZR).

*Präsentistischer Exdurantismus:* Ein Objekt O persistiert =df. O ist ein momentanes Stadium, das sich aufgrund von externen Relationen zu zeitlichen ‚Counterparts‘ (Vorgänger- und Nachfolgerstadien) in Vergangenheit, Gegenwart und Zukunft *sukzessive* entwickelt & O kommt nur in der Gegenwart vor.

Soviel zu den unterschiedlichen Optionen, die sich ergeben, sobald klar wird, dass das eingangs angeführte Unvereinbarkeitsargument aufgegeben werden muss. Ich werde an dieser Stelle nicht zu entscheiden versuchen, ob es Argumente gibt, die möglicherweise zeigen, dass ein bestimmter Ansatz mit Blick auf einzelne Problemkonstellationen besser abschneidet als alle anderen. Im abschließenden Teil möchte ich vielmehr dafür plädieren, dass die Wahl einer singulären Erklärungsstrategie – die für sämtliche Arten von Objekten gleichermaßen zutreffend ist – einfach zu restriktiv ist. Geht man nämlich von der zuletzt diskutierten Unterscheidung von Kontinuanten und Geschehnissen aus, liegt es wesentlich näher, eine Kombination aus verschiedenen Vorschlägen in Erwägung zu ziehen.

#### *4. Hybride Zeitkonzeption und der Ansatz einer mehrdimensionalen Persistenzerklärung*

In Anbetracht der unterschiedlichen Strategien, die eine Weiterentwicklung der Persistenzerklärung sowohl in endurantistischer als auch in exdurantistischer Perspektive erlaubt, stellt sich die Frage, welche Anhaltspunkte es gibt, eine bestimmte Auswahl zu treffen. An mehreren Stellen wurde deutlich, dass bezüglich der Bedeutsamkeit zentraler Adäquatheitskriterien – wie etwa der Nicht-Widerspruchs-Bedingung (NWB) – weitgehende Ei-

nigkeit besteht. Bei anderen Kriterien – wie etwa der Bedingung des einfachen Eigenschaftsbesitzes (BeE) oder der Existenzbedingung zeitlicher Teile (EzT) – ergaben sich hingegen erhebliche Abweichungen, wie deren Stellenwert zu beurteilen ist. Zumeist zeugen derartige Differenzen von unterschiedlichen ontologischen Intuitionen in Bezug auf den zu erklärenden Gegenstandsbereich. Und abhängig davon, ob das eine oder andere Adäquatheitskriterium akzeptiert wird, ergeben sich unterschiedliche Möglichkeiten der Anpassung. Die hier bestehende Kluft zwischen der Erklärung des Auftretens zeitlicher Persistenz und der Frage, was zeitliche Veränderungen ontologisch bedeuten,<sup>45</sup> lässt sich nur dann schließen, wenn bereits im Vorfeld transparent gemacht wird, mit welcher ontologischen Zielsetzung der betreffende Ansatz verfolgt wird, d. h. wie die Orientierung an einer bestimmten Basiskonstituente mit der Wahl des jeweiligen Persistenzmodells zusammenhängt.<sup>46</sup>

Im Folgenden werde ich versuchen, eine Position zu verteidigen, die sich in dieser Hinsicht von vier grundlegenden Annahmen leiten lässt: Erstens sollte die gesuchte Erklärung mit dem äternalistischen Prinzip der zeitlichen Gleichstellung (PzG) vereinbar sein, ohne allerdings die basale Intuition zu verletzen, dass Vergangenheit und Zukunft auf unterschiedliche Weise determiniert sind. Die als natürlich empfundene Asymmetrie zeitlicher Veränderungen soll also gewahrt bleiben.<sup>47</sup> Zweitens ist die Art

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<sup>45</sup> Vgl. hierzu Lowe (2001, 129ff.), der in dieser Hinsicht strikt zwischen semantischen und ontologischen Aspekten der Persistenzproblematik unterschieden hat.

<sup>46</sup> Dies betrifft auf einer noch grundlegenden Ebene bereits die Frage, ob dasjenige, was eine zeitliche Veränderung konstituiert, in Form von individuellen Zeitpunkten, Relationen, nicht-relationalen Eigenschaften oder als wechselnde Instanziierung von Sachverhalten zu analysieren ist. Vgl. zur Diskussion verschiedener Basiskategorien: Oaklander (2004, 20ff.), Tegtmeier (1994).

<sup>47</sup> Damit wird nicht behauptet, dass jede Form des Präsentismus abzulehnen ist. Wie sich weiter unten noch zeigen wird, kann eine äternalistische Konzeption der Zeit vertreten werden, die es erlaubt der Gegenwart eine gewisse Sonderstellung einzuräumen. Eine solche *schwache* präsentistische Auffassung bestreitet zwar, dass Dinge ausschließlich in der Gegenwart existieren, behauptet aber gleichzeitig, dass die Existenz vergangener oder zukünftiger Objekte nicht ‚per se‘ gegeben ist, sondern in ontologischer Abhängigkeit (relational) zur Festsetzung der Gegenwart besteht. Im Gegensatz zum strikten Präsentismus wird bei der abgeschwächten Form von einer *substantiellen* Differenz zwischen A- und B-Reihe (der Zeit) ausgegangen. Wobei diese Differenz nur solange gerechtfertigt ist, wie man zeitliche Veränderungen, die sich mittels Festlegungen der A-Reihe (vergangen, gegenwärtig, zukünftig) beschreiben lassen, als zusätzliche Charakteristika der zugrunde liegenden B-Relationen (früher-als, später-als, gleichzeitig-mit) interpretiert.

der Persistenzerklärung in Abhängigkeit dazu zu betrachten, welcher Basiskonstituente – hinsichtlich der Zeitlichkeit von Veränderungen – ein Objekt zugeordnet werden muss. Dies hat zur Folge, dass die Unterstellung einer strikten Analogie zwischen räumlichen und zeitlichen Veränderungen sowohl aus semantischen, wie auch aus ontologischen Überlegungen abzulehnen ist. Drittens ist auszuschließen, dass mit der Verwendung verschiedener Basiskonstituenten inkompatible Auffassungen der Zeit verbunden sind. Sofern es nur eine Zeit gibt, müssen die verschiedenen Dimensionen der Persistenzerklärung so beschaffen sein, dass ihnen ontologisch gesehen dieselbe Gesamtkonzeption zeitlicher Veränderungen zugrundegelegt werden kann. Viertens schließlich ist der Fokus des Erklärungsansatzes so weit zu wählen, dass sämtliche Objekte berücksichtigt werden, von denen wir mit Fug und Recht behaupten können, dass sie persistieren. In diesem Zusammenhang denke ich in erster Linie an soziale Objekte.

Ausgangspunkt meiner Überlegungen ist Lombards These, dass der Ausdruck ‚existiert zu t‘ zwei unterschiedliche Lesarten zulässt. Im Gegensatz zu Lombard gehe ich von zwei weiteren Zusatzannahmen aus: (i) Der hybride Existenzstatus,<sup>48</sup> demzufolge ein persistierendes Objekt in zweierlei Hinsicht zu einem Zeitpunkt t existieren kann – nämlich im Sinne der ‚Gesamtheit zu t‘ und im Sinne von ‚hat einen zeitlichen Teil, der in seiner Gesamtheit zu t völlig gegenwärtig ist‘ – stellt keine Besonderheit von Geschehnissen dar; denn er trifft auf eine bestimmte Sorte von Kontinuanten ebenso zu. (ii) Gleichwohl Geschehnisse nicht wie herkömmliche Einzeldinge persistieren, besitzen sie – jedenfalls die meisten von ihnen – eine gewisse Dauerhaftigkeit. Die abweichende Form dieser Dauerhaftigkeit lässt sich im Rahmen des exdurantistischen Persistenzmodells abbilden.

Zuerst zu Punkt (i): Was die spezielle Form der Persistenzbedingungen anbetrifft, ist auch innerhalb der Klasse der Kontinuanten eine zusätzliche Differenzierung einzuführen. Je nachdem, ob es sich um natürliche materielle Einzeldinge handelt, die einer biologischen Spezies angehören, oder um solche Entitäten, die eher als soziale Objekte zu bezeichnen sind,<sup>49</sup> ist ein anderes Erklärungsmodell zu wählen. Natürliche Einzeldinge verkör-

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<sup>48</sup> Der Ausdruck ‚hybrid‘ ist *nicht* im Sinne einer dualistischen Position zu verstehen. Obwohl es sich bei beiden Lesarten von ‚existiert zu t‘ um zwei irreduzible ‚Seinsweisen‘ handelt, stellen sie nichtsdestoweniger Charakterisierungen desselben ‚Seins‘ dar.

<sup>49</sup> Diese Unterscheidung basiert auf der aristotelischen Trennung von natürlichen Substanzarten (wie z. B. Fledermäuse, Dahlien, Hydrogen usw.) und nicht-natürlichen Substanzarten (wie z. B. Schiffe, Badestrände, Staatsflaggen usw.) Vgl. hierzu: Hoffman/Rosenkrantz (1997, 171f.) u. Wilkerson (1995, 61).

pern die traditionellen ‚endurer‘, die über intrinsische Eigenschaften verfügen und als kontinuierlich bestehende Objekte zu jedem Zeitpunkt der Existenz in ihrer *Gesamtheit* völlig gegenwärtig sind. Das bedeutet aber nicht, dass derartige Kontinuanten mit dem äternalistischen Prinzip der zeitlichen Gleichstellung (PzG) nicht vereinbar wären, denn das ‚einfache Haben‘ einer intrinsischen Eigenschaft ist angesichts der Möglichkeit, dass auch natürliche Einzeldinge Veränderungen unterliegen, zeitlich zu modifizieren.

Demgegenüber zeichnen sich soziale Objekte vor allem dadurch aus, dass sich ihre Persistenzbedingungen nicht – wie das im Fall von natürlichen Einzeldingen möglich ist – durch die Annahme von intrinsischen Eigenschaften erklären lassen. Vielmehr besitzen soziale Objekte *extrinsische* Eigenschaften, weshalb ein Persistenzmodell, das auf der Behauptung einer strikten Identitätsbeziehung beharrt, eher unangebracht erscheint. Das Weiterbestehen von Objekten mit extrinsischen Eigenschaften ist besser so zu verstehen, dass dasjenige, was zu jedem Zeitpunkt der Existenz völlig gegenwärtig ist, nicht die Gesamtheit (Summe) mit all ihren Vorgänger- und Nachfolgerstadien ist, sondern immer nur dasjenige momentane Stadium, auf das zum jeweiligen Zeitpunkt Bezug genommen wird. Wobei von diesem Stadium nur deswegen behauptet wird, dass es kontinuierlich weiterbesteht, weil innerhalb eines feststehenden sozialen Kontextes die Möglichkeit gegeben ist, ein anderes Stadium (aufgrund externer Relationen) als dessen zeitlichen ‚Counterpart‘ zu bestimmen. Um der allgemeinen Überzeugung nachzukommen, dass die überwiegende Mehrzahl sozialer Objekte tatsächlich kontinuierlich existierende Entitäten sind – obgleich sie nicht über intrinsische Eigenschaften verfügen, die eine artspezifische Zuordnung in Form einer strikten Identitätsbeziehung erlauben würden – schlage ich vor, die zeitliche Persistenz sozialer Objekte im Rahmen des *exdurantistischen* Ansatzes zu erklären. Entsprechend wäre eine erste Unterteilung wie folgt vorzunehmen:

- (a) Ein Objekt O ist ein *natürliches Einzelding* =df. O ist ein Kontinuant & die Persistenz von O lässt sich im Modell des *äternalistischen Endurantismus* erklären.
- (b) Ein Objekt O ist ein *sozialer Gegenstand* =df. O ist ein Kontinuant & die Persistenz von O lässt sich im Modell des *äternalistischen Exdurantismus* erklären.



Darüber hinaus besagt Überlegung (ii), dass die meisten Geschehnisse (Ereignisse und Prozesse) eine gewisse Dauerhaftigkeit besitzen, obgleich deren Persistenz nicht mit einer räumlichen Auslegung des Prinzips der zeitlichen Gleichstellung (PzG) vereinbar ist. Insofern Geschehnisse dynamische Objekte sind, deren Fortbestehen von echten zeitlichen Veränderungen im Sinne des Entstehens bzw. Vergehens in der Gegenwart geprägt ist, muss sich diese Besonderheit auch in der Erklärung ihrer Persistenzbedingungen niederschlagen. Die bestehende Unterteilung ist aus diesem Grund um eine weitere Dimension zu ergänzen:

(c) Ein Objekt O ist ein *dynamischer Gegenstand* =df. O ist ein Geschehnis (Ereignisse oder Prozesse) & die Persistenz von O lässt sich im Modell des *präsentistischen Exdurantismus* erklären.

Gegen (c) könnte eingewandt werden, dass mit einer präsentistischen Ausrichtung des exdurantistischen Erklärungsmodells das Prinzip der zeitlichen Gleichstellung (PzG) vollständig aufgegeben wird, so dass (c) unmöglich mit der Unterteilung von (a) und (b) vereinbar ist.

Dieser Einwand basiert jedoch auf einer unzulässigen Analogiebehauptung. Demnach stellt man sich zeitliche Fortdauer wie die Ausdehnung eines Körpers im Raum vor, d. h. man nimmt an, dass genauso wie räumliche Teile verschiedene Unterregionen des Raumes bilden, zeitliche Teile verschiedene Unterregionen des gesamten Zeitintervalls besetzen.<sup>50</sup> Dabei wird allerdings übersehen, dass Geschehnisse dynamische Objekte darstellen, deren zeitlichen Teile nur sukzessive in Erscheinung treten. Diese sukzessive Persistenzform zeigt sich darin, dass das zeitliche Stadium, das gegenwärtig existiert, nicht etwa für sich selbst besteht – als ein von anderen Teilen unabhängiges statisches Intervall – sondern nur in relationaler Abhängigkeit zu denjenigen Objekten vorkommt, durch die es begrenzt wird (vergangene und zukünftige Stadien). Das gegenwärtige Stadium ist praktisch wie eine sich verschiebende *Grenze* zu verstehen, welche Vergangenheit und Zukunft voneinander trennt, die aber unabhängig von dem, was sie begrenzt, gar nicht existieren könnte.<sup>51</sup> Und obwohl das gegenwärtige Stadium in gewisser Hinsicht privilegiert ist, weil es derjenige Teil einer Gesamtheit von Stadien ist, der momentan stattfindet, bedeutet das nicht, dass dieses Stadium unabhängig von der Gesamtheit – die ein Geschehnis in äternalistischer Perspektive umfasst – durch sich allein existieren kann.

<sup>50</sup> Vgl. beispielsweise: Sider (1997, 197).

<sup>51</sup> Vgl. Brogaard (2000, 348f.).

Geht man von der vorgeschlagenen Dreiteilung aus, ist der Gedanke eines eindimensionalen Persistenzmodells – das für sämtliche Basiskonstituenten gleichermaßen Gültigkeit beanspruchen könnte – zurückzuweisen. Dieser Tatbestand veranlasst mich, von einem *mehrdimensionalen* Erklärungsansatz zu sprechen. Ein mehrdimensionaler Ansatz ist allerdings nur dann akzeptabel, wenn die entsprechenden Vorschläge miteinander kompatibel sind, d. h. es muss ausgeschlossen werden, dass ein Ansatz, der die Vorschläge (a) – (c) miteinander kombiniert, unterschiedliche Zeitkonzeptionen beinhaltet. Doch wie sollte eine solche einheitliche Konzeption aussehen?

Bedenkt man, dass der entscheidende Anstoß, der zu einer Ausdifferenzierung verschiedener Persistenzmodelle geführt hat, von der Überlegung ausging, dass Geschehnisse die Existenzbedingung zeitlicher Teile (EzT) verletzen – weshalb deren Existenzstatus als *hybrid* zu bezeichnen war – fällt eine Antwort nicht sonderlich schwer: Die gesuchte Zeitkonzeption sollte nicht nur mit der Behauptung vereinbar sein, dass eine Veränderung von Eigenschaften bei kontinuierlich existierenden Objekten zeitlich zu modifizieren ist, sie muss vor allem damit im Einklang stehen, dass dynamische Objekte in einer Art und Weise persistieren, die ihnen – aufgrund ihres hybriden Existenzstatus – ein zeitliches Entstehen bzw. Vergehen in der Gegenwart ermöglicht.

Meine weiterführende Behauptung im vorliegenden Zusammenhang ist daher die Folgende: Die von Lombard aufgezeigte Mehrdeutigkeit hinsichtlich des Existenzstatus von Ereignissen stellt genau diejenige Grundüberlegung dar, die auch McTaggarts ‚positiver Auffassung‘ von zeitlichen Veränderungen als Ausgangsbasis dient.<sup>52</sup> Meiner Ansicht nach muss McTaggarts positiver Ansatz als eine Art *hybride Zeitkonzeption* verstanden werden, bei der zeitliche Veränderungen so erklärt werden, dass sie aus einer Kombination zweier Zeitreihen, nämlich der A- und B-Reihe hervorgehen.<sup>53</sup> Danach persistieren Ereignisse nicht – wie das in bestimmter Hinsicht noch bei konkreten Einzeldingen der Fall zu sein scheint – durch einen bloßen Wechsel von Eigenschaften. Der Grund dafür ist, dass

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<sup>52</sup> Bedenkt man, dass die Trennung zwischen einer A- und B-Reihe der Zeit von McTaggart eigentlich mit dem Ziel eingeführt wurde, die Zeit als unreal zu erweisen, dann ist derjenige Teil seiner Überlegungen, bei dem es hauptsächlich um das Verhältnis beider Zeitreihen geht und in dem nicht der Versuch gestartet wird, die Widersprüchlichkeit der A-Reihe unter Beweis zu stellen, als ‚positiver‘ Ansatz zu bezeichnen. Vgl. McTaggart (1908, 1927).

<sup>53</sup> Vgl. zu dieser Interpretation: Broad (1938), Craig (1997, 2001), Rea (2003), Rohs (1980), Schlesinger (1980).

Ereignisse niemals aus der für ihre Gesamtheit konstitutiven B-Zeitreihe – die durch Relationen des früher-als, später-als und gleichzeitig-mit festgelegt ist – herausfallen können. Da nun aber Ereignisse, sofern sie in einer B-Reihe konstituiert sind, stets *permanent* gegeben sind, kann allein mit der B-Reihe nicht erklärt werden, was eine Veränderung im Sinne des zeitlichen Entstehens bzw. Vergehens bedeutet, d. h. es bleibt unverständlich, was es eigentlich bedeutet, dass ein Ereignis in der Gegenwart stattfindet. Bekanntlich hat McTaggart daraus den Schluss gezogen, dass *genuin* zeitliche Veränderungen nur dann möglich sind, wenn sie so verstanden werden, dass davon nicht die in der B-Reihe konstituierten Ereignisse in ihrer Gesamtheit betroffen sind. Was sich wirklich verändert, sind die jeweiligen ‚Charakteristika‘ – also diejenigen Eigenschaften oder besser Relationen, die einem Ereignis zukommen, wenn es zum gegenwärtigen Zeitpunkt stattfindet.<sup>54</sup> Wobei natürlich die einzigen Ausdrücke, mit denen sich die Veränderungen der Charakteristika beschreiben lassen, genau jene Bestimmungen sind, die sich mittels A-Reihe angeben lassen.

Warum hat McTaggart den ‚bloßen‘ Wechsel von Eigenschaften (kontinuierlicher Objekte) als echte Form zeitlicher Veränderungen zurückgewiesen? Die Antwort ist bereits bekannt: Sofern Ereignisse keine konkreten Einzeldinge sind, sondern durch Relationen innerhalb einer *Zeitreihe konstituiert* werden, ist ein Wechsel innerhalb dieser Reihe zwar ein Konstituent für die jeweilige Gesamtheit, drückt aber selbst nur eine Abfolge unterschiedlicher Positionen aus. McTaggarts Unterscheidung der A- und B-Reihe wird dadurch motiviert, dass die Abfolge der verschiedenen Positionen im Rahmen der B-Reihe zwar für jedes Ereignis *konstitutiv* ist – im Sinne der Lesart ( $\alpha$ ) von ‚existiert zu t‘ (Gesamtheit) – eine echte Veränderung der so konstituierten Ereignisse aber nur *extern*, d. h. relativ zu den Festlegungen der A-Reihe gegeben ist. Geschehnisse verändern sich hinsichtlich ihrer Charakteristika nicht intern – innerhalb der für sie konstitutiven Abfolge von wechselnden B-Festlegungen – sondern nur extern, indem mittels Bestimmungen der A-Reihe festgehalten wird, ob ein konkretes Ereignis – im Sinne der Lesart ( $\beta$ ) von ‚existiert zu t‘ – gegenwärtig stattfindet oder nicht. Vereinfacht lässt sich dieser Unterschied so veranschaulichen:

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<sup>54</sup> McTaggart spricht allgemein von ‚Charakteristika‘, wenn er die Eigenschaften oder Relationen eines Ereignisses meint; wobei er sich letztlich nicht darauf festgelegt hat, ob es eher der Wechsel von Eigenschaften ist oder die Veränderung der Relationen zu anderen Dingen, aufgrund dessen Ereignisse einen Wandel erfahren.

(V1) Ereignis E hat die Eigenschaft F [am Sonntag] und Eigenschaft F fehlt am folgenden Tag.

(V2) Ereignis E hat die Eigenschaft F [am Sonntag], F ist gegenwärtig, und Eigenschaft F fehlt am folgenden Tag.

Der in (V1) beschriebene Wechsel von F zu  $\neg F$  ist nach McTaggart nicht hinreichend, um sagen zu können, dass in Bezug auf Ereignis E eine echte zeitliche Veränderung stattfand. Es macht einen Unterschied, ob man unter Veränderung das ‚bloße‘ Nacheinander von Eigenschaften versteht, womit keine echte zeitliche Veränderung verbunden ist, weil diese Abfolge – immer vorausgesetzt es handelt sich um Geschehnisse – eine Konstituente der betreffenden B-Reihe ist. Oder ob es sich wirklich um Veränderungen der zeitlichen Charakteristika von Ereignissen handelt; nur diese können vergangen, gegenwärtig oder zukünftig sein.<sup>55</sup> Wobei wir mit Lombard gesehen haben, dass es für ein Ereignis E kein Problem darstellt, in der Gegenwart stattzufinden, obgleich nicht alle Teile von E – die zu dessen konstitutiver Gesamtheit gehören und mittels Festlegungen der B-Reihe bestimmt werden – gegenwärtig existieren; jedenfalls nicht im Sinne der zweiten Lesart von ‚existiert zu t‘.

Nimmt man nun die Behauptung ernst, dass auch Ereignisse und Prozesse eine gewisse Fortdauer besitzen und aus diesem Grund in der Zeit weiterbestehen – gleichwohl deren Persistenz nicht mit der von konkreten Einzeldingen zu vergleichen ist – dann scheint sich hinter McTaggarts ‚positiver‘ Konzeption genau jene Zeitauffassung zu verbergen, die auch für einen mehrdimensionalen Ansatz der Persistenzerklärung geeignet ist. Der entscheidende Vorteil der hybriden Zeitkonzeption liegt nämlich darin, dass sie zeitliche Veränderungen, die kein zeitliches Entstehen bzw. Vergehen in der Gegenwart beinhalten – die aber im Sinne einer zeitlichen Modifizierung des Eigenschaftsbesitzes für Erklärungen in der Form von (a) und (b) grundlegend sind – nicht einfach ignoriert. Sofern Geschehnisse ausschließlich in der für ihre Gesamtheit konstitutiven B-Reihe betrachtet werden, entspricht die dort angenommene Abfolge von Ereignissen genau jener Form von Veränderungen, die, würde es sich dabei um Kontinuanten handeln, als ‚bloßer‘ Eigenschaftswechsel zu bezeichnen ist. Veränderungen im Sinne des zeitlich modifizierten Eigenschaftswechsels werden also keineswegs ausgeschlossen; sie stellen vielmehr einen *integrativen* Bestandteil dieser Zeitkonzeption dar.

<sup>55</sup> Vgl. zur Kritik an dieser Unterscheidung: Thomson (2001).

Doch darüber hinaus gibt es – wie eben noch einmal deutlich geworden ist – genuin zeitliche Veränderungen, die vor allem dann von Bedeutung sind, wenn es darum geht, die Persistenz von Geschehnissen und das mit solchen Basiskonstituenten verbundene Stattfinden in der Gegenwart zu erklären. Will man also eine Persistenzerklärung vertreten, die so umfassend ist, dass sie die Bedingungen berücksichtigt, unter denen persistierende Objekte verschiedenen Basiskonstituenten zugeordnet werden – und die damit unterschiedlichen Formen der Veränderung unterliegen – scheint McTaggarts hybride Zeitkonzeption der geeignetste Kandidat zu sein. Ich komme daher zu dem Schluss, dass man gut beraten ist – so man den vorgeschlagenen mehrdimensionalen Erklärungsansatz akzeptiert – nach weiteren Argumenten zu suchen, welche die Annahme stützen, dass eine hybride Zeitauffassung – trotz der Einwände die gelegentlich gegen sie vorgebracht werden<sup>56</sup> – dennoch gerechtfertigt ist.

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<sup>56</sup> Vgl. hierzu: Broad (1967), McKinnon (1999), Oaklander (2004).

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## Bergmann and Wittgenstein on Generality

### I

General statements have been the chief subject matter of logic since Aristotle's syllogistic. They have also been a fundamental concern of metaphysics, though only since Frege invented modern quantification theory. Indeed, logicians and even metaphysicians seldom ask what, if anything, general statements correspond to in the world. But Frege and Russell did, and the question became a major theme in Wittgenstein's early (pre-1929) and Gustav Bergmann's later (post-1959) works. All four were aware that, as Bergmann put it in his posthumously published *New Foundations of Ontology*, there could not be any laws of nature if generality were not in the world.<sup>1</sup> Generality must be in the world if the world is at all how science, indeed any cognition beyond that of babes, takes it to be. This is why all four were also aware of the tie of the topic to what became known as the realism/antirealism issue.<sup>2</sup>

Frege held that general statements express the saturation of second-level functions by first-level functions; Russell, that they assert general facts; Wittgenstein, that they involve matters that can only be "shown," not "said"; and Bergmann, that they involve the entities generality and existence. All four rejected the facile answer that general statements, if universal, are merely the disguised conjunctions, and if particular, the disguised disjunctions, of their singular instances. Frege wrote: "It is surely clear that when anyone uses the sentence 'all men are mortal' he does not want to assert something about some Chief Akpanya, of whom perhaps he has never

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<sup>1</sup> Gustav Bergmann, *New Foundations of Ontology* (Madison, University of Wisconsin Press, 1992, edited by William Heald), p. 173. Page references in the text will use the abbreviation "NF." Heald's introduction is obligatory reading for all interested in Bergmann's philosophy. He has also included an invaluable glossary.

<sup>2</sup> For a discussion of the relevance of the topic of generality to the realism/antirealism issue, see my "Metaphysical Realism and Logical Nonrealism," in Richard Gale, ed., *Guide to Metaphysics* (Oxford: Blackwell, 2002).

heard.”<sup>3</sup> Russell concurred: “When you have taken all the particular men that there are, and found each one of them severally to be mortal, it is definitely a new fact that all men are mortal.”<sup>4</sup> For, “In order to arrive [by “complete induction”] at the general proposition ‘All men are mortal’, you must already have the general proposition ‘All men are among those I have enumerated.’” General propositions, such as “All men are mortal,” stand (if true) for general facts. So, “there are general facts” (LA, 101). Russell continued: “You cannot ever arrive at a general fact by inference from particular facts, however numerous... [T]here must be primitive knowledge of general propositions” (LA, 101-102). Thus there is “the necessity of admitting general facts, i.e., facts about all or some of a collection” (LA, 289). And Bergmann wrote in his article “Generality and Existence”: “What can be said with the quantifiers cannot be said without them... Consider (1) ‘ $(x)G(x)$ ’ and (2) ‘ $G(a_1). G(a_2)... G(a_N)$ .’ (1) implies (2). (2) does not imply (1).”<sup>5</sup> In *New Foundations* he just said, “[ $(x) f_1(x)$ ] is not a conjunction, either finite or infinite, nor even analytically equivalent to one. Similarly, for [ $(\exists x) f_1(x)$ ] and disjunction” (NF, 167).

Bergmann went on in “Generality and Existence” to argue that, like “individuality, universality, and exemplification,” generality and existence, i.e., what he took the quantifiers,  $(x)$  and  $(\exists x)$ , in universal and particular (“existential”) statements respectively to stand for, belong to the “world’s form.” One is “presented” with them, but they do not “exist” – rather, they “subsist.” In that article Bergmann used “existence” in two senses: for what the particular quantifier represents and what the world’s form (but also Pegasus and the golden mountain) lack. In conversation, he often expressed regret over the ambiguity. It is absent from *New Foundations of Ontology*, where Bergmann’s views received, with remarkable subtlety, depth, and breadth, their most developed and detailed formulation.

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<sup>3</sup> Peter Geach, and Max Black, eds., *Translations from the Philosophical Writings of Gottlob Frege* (Oxford: Blackwell, 1970), p. 83.

<sup>4</sup> Bertrand Russell, *The Philosophy of Logical Atomism* (Chicago and La Salle: Open Court, 1996), p. 103. Page references in the text will use the abbreviation “LA.” See also R. C. Marsh, ed., *Logic and Knowledge* (London: Allen & Unwin: 1956), p.42.

<sup>5</sup> Gustav Bergmann, “Generality and Existence,” *Theoria*, 28 (1962), 1-26. Included in *Logic and Reality* (Madison: University of Wisconsin Press, 1964), p. 69. Page references in the text will use the abbreviation “LR.”

“Generality and Existence” was preceded by “Ineffability, Ontology, and Method.”<sup>6</sup> Bergmann described the two articles as “materially one.” The first topic of “Ineffability, Ontology, and Method” was the “ineffability” of individuality, universality, and exemplification. Bergmann wrote: “When I know that this is a green spot, I know also that (1) the spot is an individual, (2) the color is a character, and (3) the former exemplifies the latter (and not, perhaps, the latter the former). How could I know all this if it were not, in some sense, presented to me?” (LR, 47). But what was thus presented could not be represented, at least not without futility. For, “Looking at a name...I know...even if I do not know *which thing* it has been attached to as a label...the *kind of thing*, whether individual or character, to which it has been or could be attached” (LR, 49-51). Bergmann noted that a certain name “is on the lips of every likely reader,” but would not mention it because he did not “on this occasion wish to make assertions about the reading of a notoriously difficult text” (LR, 50). The name of course is Wittgenstein’s, and the text is *Tractatus Logico-Philosophicus*. Wittgenstein had written: “If I am to know an object, though I need not know its external properties, I must know all its internal properties” (2.01231).<sup>7</sup> By “external property” he meant what philosophers usually mean by “property,” but by “internal property” he meant what he also called a “formal property,” e.g., that of being an object. Statements about an object say what external properties it has. Formal properties, Wittgenstein held, cannot be properly predicated, but they can show themselves: “When something falls under a formal concept as one of its objects, this cannot be expressed by means of a proposition. Instead it is shown in the very sign for this object” (4.126).

The similarity of Bergmann’s views in “Ineffability, Ontology, and Method” and “Generality and Existence” to Wittgenstein’s in the *Tractatus* is obvious, and Bergmann readily acknowledged it. It centered on Wittgenstein’s distinction between “saying” and “showing,” which Wittgenstein later described as the main contention in the *Tractatus*. Some interpreters, for example, Cora Diamond<sup>8</sup> and Warren Goldfarb,<sup>9</sup> deny that according to

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<sup>6</sup> *Philosophical Review*, 69 (1960), 18-40, also included in *Logic and Reality*.

<sup>7</sup> *Tractatus Logico-Philosophicus*, translated by D. F. Pears and B. F. McGuinness (London: Routledge, 1972), 6.522. References in the text will use the decimals Wittgenstein assigned to sentence or sentences in the *Tractatus*. All italics, upper-case letters, and parentheses in the quotations will be Wittgenstein’s.

the *Tractatus* there is anything that cannot be said but can be shown. In this respect they differ strikingly from most other interpreters, including David Pears<sup>10</sup> and P. M. S. Hacker.<sup>11</sup> At any rate, Wittgenstein did write: “There are, indeed, things that cannot be put into words. They *make themselves manifest*. They are what is mystical [*Es gibt allerding Unaussprechliches. Dies 'zeigt' sich, es ist das Mystische*]” (*Tractatus*, 6.522). Moreover, at least in the case of ethics, he held that what only shows itself is “the higher.” To understand Wittgenstein’s distinction between saying and showing and its role in the *Tractatus* we must take seriously its applications to logic, ethics, and even religion. To say that Socrates is an individual, rather than, say, a relation, is not to add to Socrates’s wealth of properties, but neither is it to say nothing. To speak of the meaning of life is not like speaking of the duration of life, but it is hardly to speak of nothing. To be told that “God does not reveal himself in the world” since “how things are in the world is a matter of complete indifference for what is higher,” may depress us but it is not to tell us nothing.

Wittgenstein’s earlier and Bergmann’s later views faced similar reception in the philosophical community, perhaps because both dealt with metaphysical questions that few philosophers had even considered, and offered answers of which no philosophers had even been aware. Critics of Bergmann complain that his philosophy is a Meinongian jungle, or just avow that they find it “too difficult.” Critics of Wittgenstein’s *Tractatus* disparage it as “too metaphysical,” or just interpret it in terms of the *Philosophical Investigations* (Bergmann would have said they find misery in Wittgenstein’s glory, and glory in Wittgenstein’s misery).<sup>12</sup>

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<sup>8</sup> Cora Diamond, *The Realistic Spirit: Wittgenstein, Philosophy and the Mind* (Cambridge, MA: MIT Press, 1991).

<sup>9</sup> Warren Goldfarb, “Metaphysics and Nonsense,” *Journal of Philosophical Research* XXII (1997). See also, in the same issue, Cora Diamond, “Realism and Resolution: Reply to Warren Goldfarb and Sabina Lovibond.”

<sup>10</sup> David Pears, *The False Prison* (Oxford: Oxford University Press, 1987).

<sup>11</sup> P.M.S. Hacker, *Insight and Illusion* (Oxford: Clarendon, 1972), pp. 20-4.

<sup>12</sup> Bergmann used these terms in “The Glory and the Misery of Ludwig Wittgenstein,” *Rivista di Filosofia*, 52, 1961, 587-406, Italian translation. Included in *Logic and Reality*.

## II

In *Tractatus* 5 Wittgenstein proposed that “A proposition is a truth-function of elementary propositions. (An elementary proposition is a truth-function of itself.)” He had explained earlier that “The simplest kind of proposition, an elementary proposition, asserts the existence of a state of affairs” (4.21), and that “It is obvious that the analysis of propositions must bring us to elementary propositions...” (4.221). (In his Introduction to the Second Edition of *Principia Mathematica*, Russell explained that “Atomic and molecular propositions together are ‘elementary propositions.’”<sup>13</sup>) It seems to follow that a general proposition, too, is a truth-function, presumably the conjunction or disjunction of the elementary propositions that are its singular substitution instances. And so, in a letter to Wittgenstein written in 1919, Russell objected: “[In an account of general (universal) propositions in terms of elementary propositions,] it is necessary also to be given the proposition that *all* elementary prop[ositions] are given.”<sup>14</sup>

Wittgenstein vehemently disagreed: “There is no such proposition! That all elementary propositions are given is *shown* by there being none having an elementary sense which is not given....” And he continued: “I’m afraid you [i.e., Russell] haven’t really got hold of my main contention, to which the whole business of logical prop[ositions] is only a corollary. The main point is the theory of what can be expressed (*gesagt*) by propo[sition]s – i.e., by language – (and, which comes to the same, what can be *thought*) and what can not be expressed by prop[osition]s, but only shown (*gezeigt*); which, I believe, is the cardinal problem of philosophy.”<sup>15</sup>

By “given,” Russell and presumably also Wittgenstein, meant being at least in some manner presupposed, taken for granted, perhaps not asserted or even considered, present but perhaps only in the thematic background. And Wittgenstein began his detailed explanation of the distinction between saying and showing in the *Tractatus* as follows: “We can now

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<sup>13</sup> Alfred North Whitehead and Bertrand Russell, *Principia Mathematica to \*56* (Cambridge: University Press, 1962), p. xvii.

<sup>14</sup> *Russell: the Journal of the Bertrand Russell Archives* 10, 2, pp. 107-09.

<sup>15</sup> *Letters to Russell Keynes and Moore*, ed. G.H. von Wright (Ithaca: Cornell University Press, 1974), pp. 71-73.

talk about formal concepts, in the same sense that we speak of formal properties.... When something falls under a formal concept as one of its objects, this cannot be expressed by means of a proposition. Instead it is shown in the very sign for this object” (4.126). “Thus the variable name 'x' is the proper sign for the pseudo-concept object. Wherever the word 'object' ('thing', etc.) is correctly used, it is expressed in conceptual notation by a variable name. For example, in the proposition, 'There are 2 objects which...', it is expressed by '(x,y) ...'. Wherever it is used in a different way, that is as a proper concept-word, nonsensical pseudo-propositions are the result. So one cannot say, for example, 'There are objects', as one might say, 'There are books'. And it is just as impossible to say, 'There are 100 objects', or, 'There are  $\chi 0$  objects'. And it is nonsensical to speak of the total number of objects. The same applies to the words 'complex', 'fact', 'function', 'number', etc. They all signify formal concepts...” (4.1272). Presumably, since propositions are logical pictures of facts (4.01), and elementary propositions are the simplest kind of proposition, those that assert the existence of atomic facts (4.21), “proposition” and “elementary proposition” also are formal concepts. In his objection, Russell seemed to take for granted what has been called the substitutional interpretation of quantification, according to which, put roughly, general statements may be said to refer to their elementary substitution instances. According to the more common objectual interpretation, general statements may be said, also put roughly, to refer to all *objects*. Whether the two interpretations in fact involve such reference is a question we need not consider here.<sup>16</sup> Suffice it to say that if Russell had taken for granted the objectual interpretation, his objection would have been that the proposition “all objects are given” must be given, and Wittgenstein would have replied that there is no such proposition because “object” signifies a formal concept, which can only be shown.

The sense in which an object's being an object can only be shown, not said, is obvious. Bergmann called it the ineffability of individuality, the futility of saying about an individual that it is an individual. The sentence “*a* is an object” presupposes what it purports to say, since its subject term could only be a name, and in Wittgenstein's technical uses of “name” and “object” names can name only objects: “A name means (*bedeutet*) an object. The object is its meaning (*Bedeutung*)” (3.203). This is why “A name shows [*zeigt*] that it signifies an object” (4.126). Wittgenstein's claim that

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<sup>16</sup> The classic discussion of the two interpretations of quantification is Ruth Barkan Marcus's, in “Interpreting Quantification,” *Inquiry* 5 (1962): 252-59.

“There are objects” is a pseudo-proposition has to be understood, of course, with some care. It does not mean that there are no universal first-order propositions, in which the quantified variable ranges unrestrictedly over all objects. For example, the proposition “ $(x) (x \text{ is material})$ ” must not be confused with “ $(x) (\text{if } x \text{ is an object then } x \text{ is material})$ .” The former does say something, true or false. It is the thesis of materialism. The latter says nothing, because it employs the pseudo-concept “object.”

The distinction between saying and showing thus has a reasonably clear and important application to propositions of the forms “ $x$  is an object” and “All objects are  $\Phi$ .” How it applies to other, more complicated cases is less clear but not less important. This is certainly true of its application to general propositions. Let us take advantage of the notion of presupposition that P. F. Strawson proposed decades later and agree, at least for the moment, that presupposing something includes implicitly referring to it. Then we can agree that, even if “ $(x) \Phi x$ ” does not *say* that all objects are  $\Phi$  (since “object” is a formal concept), surely it does *presuppose* that all objects are  $\Phi$  and thus implicitly refers to all objects. It is “ $(x) (\text{if } x \text{ is an object then } x \text{ is } \Phi)$ ,” not “ $(x) \Phi x$ ,” that says, rather than just presupposes, that all objects are  $\Phi$ . “All men are mortal,” translated as “ $(x) (\text{if } x \text{ is a man then } x \text{ is mortal})$ ,” with the variable ranging unrestrictedly, does not say that all individual *objects* are such that if they are men then they are mortal, though it does presuppose that they are. What “All men are mortal” says is just that all men are mortal. If we adopted the substitutional interpretation of quantification, we could agree that, even if “ $(x) \Phi x$ ” does not *say* that all elementary propositions of the form “ $\Phi x$ ” are true (since “elementary proposition” is a formal concept), it *presupposes* that all elementary propositions of the form “ $\Phi x$ ” are true and thus implicitly refers to all elementary propositions. “All men are mortal” does not say that all propositions of the form “if  $x$  is a man then  $x$  is mortal” are true, though it does presuppose that they are. What it says is just that all men are mortal.

Wittgenstein’s account of generality in the *Tractatus* was based on his theory of truth functions. “All propositions are the result of truth-operations on elementary propositions” (5.3), he wrote. In 5.5 we are told: “Every truth-function is a result of successive applications to elementary propositions of the operation ‘ $(\text{----}T)(\xi, \dots)$ ’. This operation negates all the propositions in the right-hand pair of brackets, and I call it the negation of those propositions.” Wittgenstein went on to explain: “ $\xi$  is a variable whose values are terms of the bracketed expression...How the description of the terms of the bracketed expression is produced is not essential. We

can distinguish three kinds of description: 1. direct enumeration, in which case we simply substitute for the variable the constants that are its values; 2. giving a function  $fx$  whose values for all values of  $x$  are the propositions to be described; 3. giving a formal law that governs the construction of the propositions, in which case the bracketed expression has as its members all the terms of a series of forms” (5.501). It follows that “If  $\xi$  has only one value, then [the negation of all the values of the propositional variable  $\xi$ ] =  $\sim p$  (not  $p$ ); if it has two values, then [the negation of all the values of the propositional variable  $\xi$ ] =  $\sim p.\sim q$  (neither  $p$  nor  $q$ )” (5.51). And “If  $\zeta$  has as its values all the values of a function  $fx$  for all values of  $x$ , then [the negation of all the values of the propositional variable  $\xi$ ] =  $\sim(\exists x). fx$ ” (5.52), the logical equivalent to  $(x) fx$ .

Yet Wittgenstein immediately added: “I dissociate the concept *all* from truth-functions (5.521). This is compatible with 5.3 because of the difference between what in 5.501 Wittgenstein had called kinds of description 1 and 2. Unlike the case of  $\sim p$  and  $\sim p.\sim q$ , where  $\xi$  has as its values *propositions* (kind of description 1), in the case of  $(x) fx$   $\xi$  has as its values the values of the *propositional function*  $fx$  (kind of description 2).<sup>17</sup> In the former case, the terms to which the truth-operation ‘(----- $T$ ) ( $\xi, \dots$ )’ is applied, i.e.,  $p$  and  $q$ , are propositions that are *explicitly* mentioned, “enumerated.” In the latter case, they are merely the propositions, whichever they might be, that are the values of the propositional function  $fx$ , and thus they remain *implicit*. To be sure, general propositions are truth-functions, but only in the sense that their truth depends on the truth of all their substitution instances. Since these are not mentioned, they are truth-functions only implicitly. By contrast,  $\sim p$  and  $\sim p.\sim q$  explicitly mention, enumerate, the propositions, i.e.,  $p$  and  $q$ , of which they are truth-functions.<sup>18</sup>

<sup>17</sup> Cf. Max Black, *A Companion to Wittgenstein’s Tractatus* (Cambridge: Cambridge University Press, 1964), pp. 281-82.

<sup>18</sup> In *Philosophical Grammar* (p. 268) Wittgenstein wrote: “My view about general propositions was that  $(\exists x). \phi x$  is a logical sum and that though its terms are not enumerated *here*, they are capable of being enumerated.... For if they can’t be enumerated we don’t have a logical sum.... Of course it is correct that  $(\exists x). \phi x$  behaves in some ways like a logical sum and  $(x). \phi x$  like a product.... for instance for “all the primary colours occur in this picture.” I take Wittgenstein to mean that the sentence about the primary colors would be an exception because “primary color” is an abbreviation, say, of “red, green, or blue,” and so the sentence would be an abbreviation of “red, green, and blue occur in this picture.” But, as we have seen, in the *Tractatus* his view had been that the substitution instances of no general proposition are, or even can be, enu-



5.521 is immediately followed by the following: “What is peculiar to the generality-sign is first, that it indicates a logical prototype, and secondly, that it gives prominence to constants” (5.522) and: “The generality-sign occurs as an argument” (5.523). *Pace* G.E.M. Anscombe<sup>19</sup> and Robert Fogelin,<sup>20</sup> who think that the generality-sign is the variable  $x$  itself, I suggest that it is the propositional function  $fx$ , which is the argument of the function which is the quantifier “ $(x)\dots$ ,” and may indeed be said to indicate a “logical prototype” and to “give prominence” to the sign  $f$ , the only constant in  $(x)fx$ . The generality of  $(x)fx$  shows itself in that the propositional function  $fx$  is the form of *all* of the substitution instances of  $(x)fx$ . It is a truth-function of its instances in the straightforward, literal, sense that its truth depends on their truth. But this only shows itself. It is not and cannot be said. For  $(x)fx$  is not replaceable by the conjunction “ $fa . fb . fc \dots$ ” Wittgenstein followed, though with major differences, the pattern proposed by Frege, who had described the quantifiers as second-level functions, saturated by first level functions. We shall find that Bergmann also followed that pattern, with even greater differences, when describing the quantifiers as functions, though with arguments quite different from propositional functions.

The next proposition in the *Tractatus*, 5.524, reads: “If objects are given, then at the same time we are given all objects. If elementary propositions are given, then at the same time all elementary propositions are given.” In view of the two propositions that preceded it, I take 5.524 to imply that the variable  $x$  in  $(x)fx$  “gives” all objects in the sense that it is an *object* (individual) variable, and that the propositional function  $fx$  in  $(x)fx$  “gives” all elementary propositions in the sense that, “ $f$ ” being proxy for any predicate, simple or complex, monadic or relational, all elementary propositions are substitution instances of  $fx$ . A general proposition thus may be said to refer to all objects, if we accept the objectual interpretation,

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merated. I have no explanation of the claim to the contrary in *Philosophical Grammar*. Nor can I explain why in the *Tractatus* Wittgenstein claimed, falsely, that “Frege and Russell introduced generality in association with logical product or logical sum” (5.521), a claim that has puzzled all his commentators.

<sup>19</sup> G.E.M. Anscombe, *Introduction to Wittgenstein's Tractatus* (London: Hutchinson University Library, 1959), p. 145,

<sup>20</sup> Robert Fogelin, *Wittgenstein* (London: Routledge, 1987, second edition), p. 65.

or to all elementary propositions, if we accept the substitutional interpretation. But this reference consists in showing, not saying. The variable  $x$  shows all objects in the straightforward sense that it is an object (individual) variable, and the propositional function  $fx$  shows all elementary propositions in the no less straightforward sense that, “ $f$ ” being proxy for any predicate, it is the form of all elementary propositions. But, since “object” is a formal concept,  $(x)fx$  does not *say* that all objects are  $f$ . Nor does it say that all elementary propositions of the form  $fx$  are true, since “elementary proposition” also is a formal concept.

One of Russell’s complaints in the letter to Wittgenstein cited earlier was that “it is awkward to be unable to speak of [the negation of all the values of the propositional variable  $\xi$ ].” Wittgenstein replied: “This touches the cardinal question of what can be expressed by a prop[osition] and what can’t be expressed, but only shown. I can’t explain it at length here. Just think that, what you want to *say* by the apparent prop[osition] ‘there are 2 things’ is *shown* by there being two names which have different meanings....e.g.,  $\phi(a, b)$ ...doesn’t say that there are two things, it says something quite different; *but whether it’s true or false, it SHOWS* what you want to *express* by saying: ‘there are 2 things.’” Then Wittgenstein added: “I suppose you [Russell] didn’t understand the way, how I separate in the old notation of generality what is in it truth-function and what is pure generality. A general prop[osition] is a truth-function of *all* PROP[OSITION]S of a certain form....I suppose you don’t understand the notation [for the values of the propositional variable  $\xi$ ]. It does not mean ‘for all values of  $\xi$ ....’”<sup>21</sup> What is truth function in  $(x)fx$ , I suggest, is what is expressed by “ $(x)...$ ,” and what is pure generality is what is expressed by “ $fx$ .” All propositions of the form  $fx$  may be said to be *shown* by that form.  $(x)fx$  is a proposition the truth of which depends on there not being a proposition of the form  $fx$  that is false, but it does not *say* that there is no proposition of the form  $fx$  that is false. For there is no proposition about all propositions of a certain form, if “proposition” is a formal concept.

Later, in *Philosophical Remarks* but especially in *Philosophical Grammar*, Wittgenstein returned to the topic of generality. In *Philosophical Remarks*, i.e., soon after his return to Cambridge in 1929, he wrote: “The general proposition ‘I see a circle on a red background’ appears simply to be a proposition which leaves possibilities open. A sort of incomplete picture. A portrait in which, e.g., the eyes have not been

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<sup>21</sup> *Letters to Russell Keynes and Moore*, pp. 72-73.

painted in. But what would this generality have to do with the totality of objects?”<sup>22</sup> Also: “If I give a correct description of a visual field in which three red circles stand on a green ground, it surely won’t take the form of saying ‘ $(\exists x (x, y, z): x \text{ is circular and red and } y \text{ is circular and red, etc. etc.}$ ’ You might of course write it like this: there are 3 circles with the property red....It is plain that the proposition about the three circles isn’t general or indefinite in the way a proposition of the form  $(\exists x (x, y, z). \phi x.\phi y.\phi z \text{ is}$ . That is, in such a case, you may say: Certainly I know that three things have the property  $\phi$ , but I don’t know *which*; and you can’t say this in the case of the three circles.”<sup>23</sup>

A couple of years later, in *Philosophical Grammar*, Wittgenstein wrote: “If I say ‘there is a black circle in the square’, it always seems to me that here again I have something simple in mind, and don’t have to think of different possible positions or sizes of the circle. And yet one may say: if there is a circle in the square, it must be somewhere and have some size. But in any case there cannot be any question of my thinking in advance of *all* the possible positions and sizes....I would like to say that in the proposition ‘there is a black circle in the square’ the particular positions are not mentioned at all. In the picture I don’t see the position, I disregard it....”<sup>24</sup> The possible particular positions of the circle would be those of the individual objects in the square that might be circles. But when saying that there is a black circle in the square one does not think of these individual objects, they are not mentioned. Indeed, when seeing the circle one does not even see its position, one disregards it. Of course, the circle has a position, any one of an indefinite number of possible position, but none is mentioned. If the position of the circle were not disregarded, i.e., if it were seen, thought of, or mentioned, the case would rather be that of the singular proposition “This black circle is in this square.”

Wittgenstein did not explain these remarks in detail. Nevertheless, they fit what he had said in the *Tractatus*. (It is wrong-headed philosophy and poor psychology to think that he had wholly abandoned it.) In

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<sup>22</sup> Ludwig Wittgenstein, *Philosophical Remarks* (Chicago: University of Chicago Press, 1975, ed. Rush Rhees, tr. Raymond Hargreaves and Roger White), p. 115. For the origin of the text, see the Editor’s Note.

<sup>23</sup> *Ibid.*, p. 136.

<sup>24</sup> *Philosophical Grammar*, p. 259. For the origin of the text, see the editor’s Note in Editing.

Wittgenstein's earlier terminology, which he no longer employed, we might say that the possible positions of the circle, or the individual objects in the square, are not "said" but "show" themselves. According to Russellian logic, the universal statement " $(x)\Phi x$ " says that all individual objects are  $\Phi$ , that everything is  $\Phi$ . But in the *Tractatus* Wittgenstein had held that "it is nonsensical to speak of the total number of objects," since "object" is a formal concept. Now, in *Philosophical Grammar*, he makes the revolutionary further claim that an ordinary general statement is not understood or intended at all in accordance with Russellian logic. It is not about all individual objects. The statement "There is a circle in this square" says nothing about all objects, not even about all objects that are in the square. In effect, Wittgenstein suggests that the particular ("existential") statement "There is a circle in the square" and the universal statement "There are only two things that are circles in this square," though different from the singular statement "This circle is in this square," are better understood in terms of the latter, rather than as quantified statements containing a variable ranging over all individual objects, or even all circles. But what then does the generality of the general statements consists in, how do they differ from the singular statement "This circle is in this square"?

In *Philosophical Grammar* we find no answer, but in his 1919 letter Wittgenstein provided one. It was that the generality of a general statement consists not in what it says but in what it does *not* say yet shows. In both texts he insisted that our use or understanding of general statements is far removed from what Russellian logic tells us. We do not use "There is a circle in the square" to say something about all things, or even about all circles, viz., that some of them are in the square. We certainly do not use it to say that it is not the case that no circles are in the square. It does entail the latter, but (like any statement) it also entails an indefinite number of other statements. Surely we are not making all those statements as well when we make that one statement.

Indeed, in *Philosophical Grammar* Wittgenstein expressed doubts about the very propriety of representing ordinary general propositions in the canonical forms of *Principia Mathematica*. He gave the example "There are two circles in this square," and said the translation of it as "There are only two things that are circles in this square" sounds "crazy." Wittgenstein explained how one was led to this translation as follows: "The original source of this notation [ $(\exists n)$ ] and in general [ $(\exists x)$ ] is the expression of our word-language 'There is a ... with such and such

properties'. And here what replaces the dots is something like 'the book from my library' or "thing (body) in this room', 'word in this letter', etc. We think of objects that we can go through one after the other. As so often happens, a process of sublimation turned this form into 'there is an object such that ...' and here too people imagined originally the objects of the world as like 'objects' in the room (the tables, chairs, books, etc.), although it is clear that in many cases the grammar of this ' $(\exists x)$ , etc.' is not at all the same as the grammar of the primitive case which serves as paradigm. The discrepancy between the original picture and the one to which the notation is now applied becomes particularly palpable when a proposition like 'there are two circles in this square' is rendered as 'there is no object that has the property of being a circle in this square without being the circle a or the circle b'....[T]he Russellian notation here gives an appearance of exactitude which makes people believe the problems are solved by putting the proposition into the Russellian form."<sup>25</sup>

It is possible that Wittgenstein's misgivings about the Russellian interpretation of universal statements were motivated by recognition that in actual talk and thought most generalizations are what linguists today call generic statements, i.e., statements of the form "Fs are Gs," rather than universal statements, which are of the form "All Fs are Gs," and that even universal statements are usually intended only as generic because they allow for "exceptions." Physicians, politicians, and parents say that smoking cigarettes causes lung cancer, but even the politicians are unlikely to say that it always does. Physicians do not even say that it is always bad for your health: the Surgeon General only says that it may be. This is not the place to develop this point; I do so elsewhere in detail.<sup>26</sup> But his misgivings about the Russellian interpretation of general statements fit Wittgenstein's broader conviction in later years that "'Mathematical logic' has completely deformed the thinking of mathematicians and of philosophers, by setting up a superficial interpretation of the forms of our everyday language as an analysis of the structure of facts."<sup>27</sup>

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<sup>25</sup> Ibid., p. 265.

<sup>26</sup> See draft of "Realism and Generality," at [http://www.geocities.com/butchvar\\_1997](http://www.geocities.com/butchvar_1997).

<sup>27</sup> Ludwig Wittgenstein, *Remarks on the Foundations of Mathematics* (Cambridge: MIT Press, 1994), p. 300.

## III

In “Generality and Existence” Bergmann used an example similar to Wittgenstein’s in *Philosophical Remarks* and *Philosophical Grammar*: being presented with a single square inside a circle. Bergmann asked, With what else must I be presented when I say “*This* square is the *only* one inside *this* circle”? He pointed out that the transcription of the statement would be “ $F(a, b) \cdot (x) [(x = a) \vee \sim F(x, b)]$ ,” which contains the general operator “(x)” and “a,” “b,” and “F” standing respectively for this square, this circle, and the relation of being inside.<sup>28</sup> Bergmann answered the question by saying that he was also presented with generality and existence. He was presented with generality in seeing that the square was the *only* square in the circle, and with existence (particularity) in seeing that *there is* a square in the circle. They are the entities that the universal quantifier, “(x)” or the phrase “for everything,” and the particular quantifier, “ $(\exists x)$ ” or the phrase “there is at least one,” represent (LR., 68, 70). Therefore, there are such entities as generality and existence, though they subsist, rather than exist (LR. 70).

In *New Foundations of Ontology* Bergmann continued to hold that he was presented with generality and existence, though now he just called them the universal and the particular quantifiers, representing them with the signs “ $\forall$ ” and “ $\wedge$ .” But he went far beyond “Generality and Existence” by offering a much more complex account of quantification, still resembling Wittgenstein’s, but as a part of a rich, all-encompassing ontology, which Wittgenstein never attempted. Bergmann renounced his earlier distinction between existence and subsistence, holding now that “whatever is thinkable exists” (NF, 61.) He pointed out that “the differences among some of the several existents...are very great indeed...momentous, or enormous” (NF. 43), thus suggesting that his earlier distinction was really a distinction between radically different existents.

Bergmann’s assertion that everything thinkable exists should be no more surprising than Meinong’s assertion that “there are things of which it is true that there are no such things,” but it is free from the latter’s paradoxical air, which bewildered and confused Meinong’s readers. There

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<sup>28</sup> *Logic and Reality*, p. 71. *Philosophical Grammar* was published 22 years after “Generality and Existence.”

is a golden mountain, it has being, it exists, Bergmann would say, but of course it is fundamentally different from the Rocky Mountains. Like the latter, it is a “complex” of facts, but unlike it pervaded by the “mode of potentiality,” rather than by the “mode of actuality.” Bergmann’s critics, like Meinong’s, seem to attach magic significance to the words “exist” and “being.” But these are just words, conventional signs, the ordinary use of which need not be suited for the purposes of ontology. The truth is that we can think and talk about, even describe in detail, say, a golden mountain east of Denver, just as we can think, talk about, and describe the Rocky Mountains west of Denver. What we must not do, of course, is to think that the former is an actual mountain.

Bergmann began his account of generality in *New Foundations* by denying that variables, whether free or bound, stand for anything (NF 64), also an unsurprising view, which however required surprising changes in the analysis of general statements. He argued that the quantifier in a general fact is a function, to be represented in the general statement by the sign “ $\forall$ ,” but without attaching to it a variable such as “ $x$ .” The function  $\forall$  takes as argument a “2-tuple” that consists of (1) the individual thing in the singular fact asserted by a singular substitution instance of the general statement and (2) that singular fact itself. The value of the function is the general fact (NF, 167-68). If the statement is “*all  $f_1$ ’s are  $f_2$ ’s*,” the 2-tuple might be  $\langle a, f_1(a) \supset f_2(a) \rangle$ . Bergmann used “2-tuple,” instead of “pair,” because in *New Foundations* he also offered a highly original account of sets that prohibits casual uses of set-theoretical terms. Perhaps most surprisingly, however, he now insisted that the conscious state or awareness of the general fact, which he called the “referent” of the general statement, also includes an “auxiliary act” of consciousness, the “intention” (i.e., intentional object) of which is the *sentence* itself, the words, used in making the statement. Bergmann called this intention “the text of the awareness” (NF, 208). And he wrote: “I cannot ‘think’ any generality such as, say, all-men-are-mortal, without at the same time ‘thinking’ the words ‘*all-men-are-mortal*,’” or more precisely, “*One cannot believe, or doubt, or remember, and so on, any generality without also perceiving the appropriate words*” (NF. 204, italics in the original). Indeed, “all awarenesses, except primary Perceivings and Imaginings (and undoubtedly some ‘Feelings’), are inseparable from their texts. That...not only gives language its due without giving it too much; it also reassuringly recovers the sound core in a large body of recent and contemporary thought...from Watson to Wittgenstein” (NF, 234).

Since we cannot perceive or imagine it, Bergmann says, the awareness of a general fact is a believing or entertaining, not a perceiving or imagining (NF, 219). The fact that all  $f_1$ 's are  $f_2$ 's is "built" by the function  $\vee$ , "not just from one argument but, indifferently, from an indefinite number of alternative arguments...from  $\langle a, f_1(a) \supset f_2(a) \rangle$ , from  $\langle b, f_1(b) \supset f_2(b) \rangle$ , and  $\langle c, f_1(c) \supset f_2(c) \rangle$ , and so on. In the text of [the awareness], however...there is no cue to this multiplicity" (NF, 235). Bergmann also gave an example from natural language: "all green (things) are square." It is the text of an awareness that has as referent the general fact, presumably not actual, that all green (things) are square.

The 2-tuples that the function  $\vee$  takes as arguments, e.g.,  $\langle a, f_1(a) \supset f_2(a) \rangle$  or  $\langle \text{this, if this is green then this is square} \rangle$ , are not mentioned in the general statement, there is no "cue" in it to their "multiplicity." But they all are essential to the general fact. The latter would not be actual if the singular facts in the 2-tuples were not all actual: "*all  $f_1$ 's are  $f_2$ 's*" would not be true if its singular substitution instances were not true. From which of them the function  $\vee$  builds the general fact is ontologically indifferent. But psychologically it might not be, since the speaker or hearer of the general sentence must at least in principle be able to perceive or imagine one of them. I shall return to this latter point.

The assay, i.e. ontological analysis (NF 232), of "*all  $f_1$ 's are  $f_2$ 's*" thus "is not, conventionally ...  $(x) [ f_1(x) \supset f_2(x) ]$ , but, rather, alternatively and indifferently ...  $\vee [(a, f_1(a) \supset f_2(a))]$  or any of its variants; indifferently because all those variants are one and not many" (NF, 202). The "variants" of  $\vee [(a, f_1(a) \supset f_2(a))]$ , of course, are  $\vee [b, f_1(b) \supset f_2(b)]$ ,  $\vee [c, f_1(c) \supset f_2(c)]$ , and so on. Each is an alternative assay of the one and same general fact. Indeed, in standard logic it is indifferent, unless the context requires otherwise, whether we symbolize "*all  $f_1$ 's are  $f_2$ 's*" as " $(x) [ f_1(x) \supset f_2(x) ]$ ", " $(y) [ f_1(y) \supset f_2(y) ]$ ", or " $(z) [ f_1(z) \supset f_2(z) ]$ ". But standard logic uses variables, which represent nothing and thus have no place in ontological analysis.

It may seem Bergmann's insistence that the arguments the quantifier  $\vee$  takes are 2-tuples is an unnecessary complication, but the reasons for it are compelling. What else could they be? Not, e.g.,  $f_1(x) \supset f_2(x)$ , because it contains variables. Nor the properties  $f_1$  and  $f_2$  themselves. One might be presented with them, as well as with the quantifier, but this would not suffice for being presented with the fact that all  $f_1$ 's are  $f_2$ 's. According to Bergmann's "principle of acquaintance," one cannot be presented with  $f_1$  and  $f_2$  except when they are exemplified (NF, 65). But even if one could,



being presented with them, as well as with the quantifier  $\forall$ , would hardly count as being presented with the fact that all  $f_1$ 's are  $f_2$ 's, or indeed with any fact. And if  $f_1$  and  $f_2$  are exemplified, one might be presented with them and the quantifier by virtue of being presented with the fact that all  $f_2$ 's are  $f_1$ 's, or with facts such as that all  $f_1$ 's are  $f_3$ 's and all  $f_2$ 's are  $f_4$ 's, rather than with the fact that all  $f_1$ 's are  $f_2$ 's. In general, if  $f_1$  were the argument of  $\forall$  for the value  $(x)$  ( $f_1x$ ), what would be the argument of  $\forall$  for the value  $(x)$  [ $f_1(x) \vee f_2(x)$ ], Bergmann asked rhetorically? Surely not  $f_1(\dots) \vee f_2(\dots)$ ! Therefore, he wrote, "The only [other] thing I can think of, and which therefore I propose [as the argument of  $\forall$ ] is a 2-tuple such as, say,  $\langle a, f_1(a) \rangle$ " (NF, 168). Thus  $(x)$  ( $f_1x$ ) becomes  $\forall \langle a, f_1(a) \rangle$

Without the singular fact that is one of the terms of the 2-tuple, there would be no relevant conscious state or awareness at all when one makes the general statement, for there would be nothing relevant to be aware of. Could the quantifier take as argument the singular fact  $f_1(a) \supset f_2(a)$ , rather than the 2-tuple  $\langle a, f_1(a) \supset f_2(a) \rangle$ ? No, because even if  $\forall$  could take  $f_1(a) \supset f_2(a)$  as argument, its value would not be a general fact. It must also be explicit with respect to *which* constituent of the singular fact the quantifier operates, just as in standard logical notation it must be explicit which variable the quantifier binds. If variables are not used, this can be explicit only if the quantifier, so to speak, "brings" the constituent "out of" the singular fact, while also "retaining" the singular fact. The constituent and the singular fact must *both* be explicitly in the argument the quantifier takes, and this amounts to saying that the argument must be the 2-tuple of which they are the terms. Bergmann expresses the point by saying that the individual is the "target" of the quantifier, while the singular fact is its "scope." In the case of the statement "all green (things) are square," the target might be any particular perceived or imagined object, even your hand, which would be square if green, were the statement true.

Indeed, in the case of both "all  $f_1$ 's are  $f_2$ 's" or "all green (things) are square," there is only one individual in each 2-tuple that could be the target. But a singular fact often has more than one individual as constituent, and thus it could be the scope of the quantifier of different general facts. If the singular fact is, say, *a is to the left of b*, we must distinguish between the general facts that all things are to the left of  $b$  and that  $a$  is to the left of all things. In standard notation, we do so by distinguishing between " $(x)(x$  is to the left of  $b$ )" and " $(x)(a$  is to the left of  $x$ )." In Bergmann's notation, the distinction would be between " $\forall \langle a, a$  is to the left of  $b \rangle$ " and " $\forall \langle b, a$  is to the left of  $b \rangle$ ." We find Bergmann's

notation obscure because it is unfamiliar, but from the standpoint of ontology the variables in the standard notation are far more obscure.

There are important similarities between this account of generality and Wittgenstein's account in the *Tractatus*, his letter to Russell in 1919, and *Philosophical Grammar*, though of course there are also obvious differences. The singular substitution instance of the general statement that stands for the singular fact Bergmann calls the scope of the quantifier is, of course, not asserted, it is not "said," yet it must be, so to speak, in the background, if the general statement is to express a relevant conscious state. There is no reason why we could not say that it must "show" itself. For it is the singular substitution instance that provides the general statement with its target and scope, both of which must, in some sense, be "present" or "given," though of course not as they would be if the singular, rather than the general, statement were asserted. We could say that the 2-tuple from which, as its argument, the quantifier "builds" the general fact must also show itself. Indeed, the whole indefinite number of alternative arguments from which the quantifier indifferently builds the general fact must show themselves. They must be "there," in the background, like the indefinite number of possible positions of the circle on a red background in Wittgenstein's example in *Philosophical Remarks*. Like the latter, the alternative arguments may be thought of as "possibilities left open," neither enumerated nor capable of being enumerated, with the speaker and hearer knowing they are there but not *which* they are, and thus, as Wittgenstein put it in *Philosophical Grammar*, the general statement may be said to be "indefinite," "an incomplete picture, like a portrait in which, e.g., the eyes have not been painted in." There can be no question of thinking in advance of *all* the different alternative arguments the quantifier may indifferently take, they are not mentioned at all, they are unseen and disregarded – yet they must be there, like the different possible positions and sizes of the circle in the square that the statement "there is a black circle in the square" allows even though one has something simple in mind when making the statement.

In *Philosophical Remarks* Wittgenstein denied that the general proposition "I see a circle on a red background" has anything to do with "the totality of objects," but at least in the *Tractatus* he would have said that it shows that totality. Would "show" as I used the word in connection with Bergmann have the sense it had in the *Tractatus*, or in Wittgenstein's assertion in his 1919 letter to Russell that while a universal statement does not *say* that all elementary (singular) propositions are given, this is *shown*

by there being none having an elementary sense which is not given? The truth is that Wittgenstein did not explain that sense, just as Bergmann did not explain the sense of his term “presented.” The reason, in both cases, was not dereliction of duty but the fact, obvious to them if not to their readers, that what they meant was too basic to allow for further explanation.

Of course, for Bergmann, one must be presented with the quantifier, i.e., with generality, what “(x)” or “ $\forall$ ” stands for, and with this Wittgenstein certainly would have disagreed. “There are no 'logical objects,’” he wrote (4.441), thus announcing his break with the logical realism of Frege and Russell, though, as we saw in connection with his distinction between saying and showing, hardly adopting a straightforward logical anti-realism.<sup>29</sup> But it is not certain that Wittgenstein would have disagreed that thoughtful use of a general sentence about something perceivable involves being *able* to perceive or at least imagine, however peripherally and unfocusedly, something nonverbal of which it would be true. Nor is it certain that he would have disagreed that thoughtful use of the general sentence involves actual awareness, perhaps also peripheral and unfocused, of the sentence itself, the “text,” whether by seeing, hearing, or imagining it. Bergmann held that these are phenomenological, or as he also put it, anthropocentric, even anthropological, facts – that this is how we humans think and speak.

But, unlike Wittgenstein, Bergmann also offered a detailed account of these facts. He explained that the text is needed to close the “phenomenological distance” between what is presented to us when thoughtfully making a general statement and what it is assayed as, to close “the ‘gap between what the text of an awareness may lead one to expect, on the one hand, and the assay in fact proposed for its referent, on the other” (NF, 232). The text is “fused,” “absorbed,” into the nontext, he wrote (NF, 216-17), it has “fusing power” (NF, 235). The general fact that all  $f_1$ 's are  $f_2$ 's is built by  $\forall$  from an indefinite number of alternative arguments, from  $\langle a, f_1(a) \supset f_2(a) \rangle$ ,  $\langle b, f_1(b) \supset f_2(b) \rangle$ ,  $\langle c, f_1(c) \supset f_2(c) \rangle$ , and so on, but there is no cue to this multiplicity in the sentence “all  $f_1$ 's are  $f_2$ 's,” nor of course in its transcription, whether the conventional “ $f_1(x) \supset f_2(x)$ ” or Bergmann's “ $\forall \langle a, f_1(a) \supset f_2(a) \rangle$ .”

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<sup>29</sup> See my “Metaphysical Realism and Logical Nonrealism.”

This phenomenological distance is unnoticed only because of the fusing power of the sentence. On no account of generality does a general statement contain a cue to the multiplicity of what makes it true. Whatever account we accept, we must rely on the statement to serve as proxy for that multiplicity. A merit of Bergmann's account is that it makes clear what all accounts of generality must admit, that when saying, e.g., "all green things are square," we could, as he puts it, in principle also say "generalized for this: if this is green then this is square" (NF, 235). The latter would differ from the former only in making explicit that the assertion is a thoughtful one, not a mere utterance, that one actually has something relevant in mind. In the old empiricist terminology, it makes explicit the presence before the mind of an "idea," whether of "sensation" or "imagination." In Bergmann's terminology, it makes explicit the presence of an individual actually perceived or imagined. If saying "generalized for this: if this is green then this is square," rather than "all green things are square," were our natural way of expressing the generality, Bergmann suggests that in general when we say that all  $f_1$ 's are  $f_2$ 's we would even be presented with the actuality of such complexes as  $\forall \langle a, f_1(a) = \forall \langle b, f_1(b)$ , i.e., we would find the truth of the statement " $\forall \langle a, f_1(a) = \forall \langle b, f_1(b)$ " obvious, indeed necessary (NF, 236). In the *Philosophical Investigations* Wittgenstein would not have agreed, but in the *Tractatus* he might have been sympathetic. Surely, Bergmann's view is plausible. Can one thoughtfully assert that all green things are square without at least in principle being able to refer to some particular thing, perceived or imagined, even if it were one's hand, which is such that if it is green then it is square? Bergmann of course held that one must *actually*, not just in principle be able to, refer to the thing, but this might be a matter of how we use the adverb "thoughtfully," not a matter of ontological import. In any case, a detailed account of generality is needed, and Wittgenstein offered none of his own, neither in the *Tractatus* nor in his later works.

To appreciate Bergmann's account, we ought to consider the alternatives to it. There is, first, the reductionist account of universal statements as conjunctions, and of particular statements as disjunctions, of their singular instances. As we saw, Bergmann found no merit in it, just as Frege and Russell did not. There is, second, Frege's account of generality as a second-level function "saturated" by a first-level function. Bergmann's account resembles it, but Frege's presupposed Frege's ontology, which

Bergmann rejected for reasons independent of the topic of generality.<sup>30</sup> There is, third, Russell's appeal to irreducibly general facts. Bergmann's view in "Generality and Existence" was similar to Russell's, and his view in *New Foundations of Ontology* may be described as a refinement of Russell's. The referent of "all  $f_1$ 's are  $f_2$ 's," which Bergmann analyzed as  $\forall a, f_1(a) \supset f_2(a)$ , is a fact, of course, a general fact. But Bergmann provided an analysis of that fact, which Russell did not. Indeed, Russell totally ignored the obvious and crucial first question he would be asked, In virtue of what are general facts general? To have taken this question seriously was one of the great merits of Bergmann's account. And, fourth, there is the view, often attributed but (as we saw) wrongly, to Wittgenstein, that all there is to generality is general sentences, words. Bergmann probably thought this view a case of "linguisticism" too crude to deserve discussion, but (as we also saw) he did agree that awareness of the referent of a general statement includes perceptual or imaginative awareness of the sentence itself.

The merits of Bergmann's position become especially evident when we contrast his transcription of the general sentence "all  $f_1$ 's are  $f_2$ 's" as " $\forall a, f_1(a) \supset f_2(a)$ " with the standard transcription of it as " $(x) (f_1x \supset f_2x)$ ." The latter includes the unrestricted individual variable "x" and therefore can be read as saying something about all individuals. It is about this computer, the page you now are reading, the moon, and so on. Bergmann thought that if we had no particular individual in mind when we assert the sentence we would have nothing relevant in mind, and so would not be making a genuine statement at all. Indeed, so would have also Locke, Berkeley, and Hume. The traditional empiricist tenet was that to understand what we are saying or hearing we must have an "idea" of what it is about. This, of course, is too strong. What might be plausible is that to understand what we are saying we must in principle be *able* to have an "idea" of it. Bergmann seemed to accept the empiricist tenet, if by "idea" is meant an object perceived or imagined, rather than a representation of it, but surely he was too astute a psychologist to have meant that whenever we make a genuine general statement we must actually perceive or imagine a particular individual of which the statement is true, rather than just that we must in principle be *able* to do so.

The sentence " $(x) (f_1x \supset f_2x)$ " does not mention this computer, the page you are reading, the moon, or any other individual thing. In

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<sup>30</sup> "Frege's Hidden Nominalism," *Philosophical Review*, 67 (1958). Included in "Meaning and Existence," (Madison, University of Wisconsin Press, 1959).

Wittgenstein's terminology, it does not say that, e.g., if this computer is  $f_1$  then it is  $f_2$ . Nonetheless, presumably Wittgenstein thought that somehow it must show this. It must do so at least in the sense that, if a thoughtful, circumspect, utterer of " $(x) (f_1x \supset f_2x)$ " were asked whether if this computer is  $f_1$  then it is  $f_2$ , he would say that it is, or express consent in some other way. Bergmann did not use Wittgenstein's terminology, but he might have done so in order to explain the relevance of this computer's being a term in one of the indefinite number of 2-tuples from which the quantifier indifferently builds the general fact that all  $f_1$ 's are  $f_2$ 's. Wittgenstein, of course, denied the empiricist tenet in his later works, but even there he probably would have agreed – because it seems obviously true – that for a statement about things that can be perceived or imagined to make sense, the speaker or hearer must in principle be *able* to, even if in fact does not, perceive or at least imagine something of which the statement would be true.

Bergmann's and Wittgenstein's positions on generality shared a negative but important feature – in Bergmann's words, that a general statement does not mention the singular statement that provides it with its target and scope, and in Wittgenstein's, that the general statement does not mention the elementary statements of which it is a truth function. They also shared an important positive feature. Bergmann argued that if one is aware of what is said by a general statement, one is aware also of the *sentence* used in making it – that thought depends on language in the case of generality, indeed in all cases except some perceivings, imaginings, and feelings. This dependence, he held, is not causal or external; it is internal, constitutive (NF, 225). "Thought is inseparably intertwined with language," Bergmann wrote (NF, 65), thus endorsing much of the linguisticism he had vehemently opposed in the past. And Wittgenstein, of course, was the philosopher who began in the *Tractatus* and in the *Philosophical Investigations* relentlessly accelerated the linguistic turn in philosophy.

It is simplistic to view metaphysics as providing descriptions of the world that are additional to those of science and everyday thought, and metaphysical disagreements as disagreements about the truth of such descriptions. Metaphysicians do not discover entities hidden from the rest of us, including physicists and astronomers, nor do they have the sort of training and means needed for such discoveries. What they can do, however, is to acknowledge, draw attention to, and emphasize similarities and differences between fundamental kinds of items in the world that go

unnoticed in everyday life and even in science, not because they are hidden but precisely because they are fundamental. Bergmann wrote: “Is there a felt difference between the external property, as some call it, of being green and the internal one, as they also say, of being a property? Directly one cannot argue on either side. That is one reason, though to be sure not the only one, why at some place or places one must appeal to the phenomenological basis. All I can say, therefore, is that this particular difference pierces my eyes” (NF, 59). By “phenomenological basis” he meant what he also called the phenomenological “rock bottom” and “the jumping-off place” (NF, e.g., 59, 212).

Bergmann’s view that a general statement does not mention yet involves the singular statements that provide the quantifier with its “target” and “scope,” and Wittgenstein’s view that a general statement does not say yet shows that all elementary propositions are given, acknowledged, drew attention to, and emphasized, in their own but perhaps not incompatible terminologies, the fundamental differences between general and singular statements. These differences are there for all to see, but they “pierce” few eyes. Even Aristotle, the father of logic, did not see them clearly when he counted both as subject-predicate statements. Bergmann wrote of what he thought is “presented,” and Wittgenstein wrote of what he thought is only “shown.” These are metaphors and need not signify fundamental disagreement. There is no established terminology for what Bergmann and Wittgenstein wanted to say, perhaps because there could not be one. Instead of caviling at the obscurity of their writings, we might do better if we open our eyes – and perhaps jump!





# REVIEWS

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**Maria Elisabeth Reicher**, *Referenz, Quantifikation und ontologische Festlegung*.  
Ontos Verlag, Frankfurt, Paris, Lancaster, New Brunswick, 2005, 324 Seiten,  
ISBN 3-937202-39-0, EUR 89,--.

Philosophische Untersuchungen zur Ontologie können, grob gesprochen, auf zweierlei Weise vorgenommen werden: Entweder man richtet seine Aufmerksamkeit zunächst auf die möglichen Strukturen der Realität, indem man eine kategoriale Analyse durchführt, um dann zu schauen, wie sie mit den grammatischen und logischen Formen unserer Aussagen über die Realität zusammenpassen. Oder man beginnt, umgekehrt, mit einer Analyse von Aussagen oder Sätzen, um dadurch zu entdecken, welche ontologischen Implikationen diese möglicherweise haben, wenn sie wahr sind.

Die Grazer Philosophin Maria E. Reicher wählt den zweiten, semantizistischen, Weg. Hauptgegenstand ihrer Studie ist die Beantwortung der Frage, worauf wir uns mit der Behauptung von Existenzsätzen ontologisch festlegen – und ob wir dies in jedem Fall tun müssen. Die Frage nach dem *Ontological Commitment* ist bei Reicher jedoch nicht wie bei Quine auf Theorien bezogen, sondern auf Personen und deren sprachlich formulierbare Überzeugungen. Es gelte als Mindestanforderung an die Rationalität, das jeweilige Überzeugungssystem konsistent zu halten. Jeder Versuch, Existenzbehauptungen zu rechtfertigen, müsse daher vom Gesamtsystem der Überzeugungen ausgehen, das man auch ein ‚Weltbild‘ nennen könne (11). Reichers semantische Studie ist somit rationalitätstheoretisch eingebettet und motiviert, worüber zwar, außer im Einleitungskapitel, kaum etwas gesagt wird, das sich jedoch in der Durchführung auf Schritt und Tritt zeigt. Man könnte den etwas sperrigen Titel des Buches deshalb auch so paraphrasieren: Was sollte ich ontologisch akzeptieren, um die Gesamtheit meiner Überzeugungen widerspruchsfrei zu halten?

Es ist gerade dieser intentionalistische Zug, der frischen Wind in die bekannte Analyse von Existenzsätzen, insbesondere der ‚problematischen‘ Fälle (fiktive, nicht-existierende, vergangene und zukünftige, mögliche und unmögliche Gegenstände) bringt. Entstanden ist so ein angenehm undogmatisches Buch: Schritt für Schritt wird erneut die Akzeptanzfrage gestellt – und an vielen guten, manchmal originellen, Beispielen illustriert.

Reicher beginnt ihre Untersuchung mit folgender Explikation des Begriffs der ontologischen Festlegung:

Eine Person  $S$  ist *ontologisch festgelegt auf einen bestimmten Gegenstand  $a$*  genau dann, wenn gilt:  $S$  akzeptiert Sätze  $p_1 - p_n$  als wahr, so dass aus  $p_1 - p_n$  ein Existenzsatz folgt, mit dem ausgedrückt wird, dass  $a$  existiert.

Neben dieser *singulären* ontologischen Festlegung (SOF) gibt es eine *generelle* ontologische Festlegung (GOF), in der entsprechend eine Festlegung auf die Existenz von  $Fs$  formuliert wird (15). Mit SOF und GOF als „Kriterien“ soll eine Referentielle Theorie der ontologischen Festlegung verteidigt werden (17).

Auffällig ist bereits an diesen Startbedingungen zweierlei: *Erstens*, Reicher zieht gleichsam die Daumenschrauben fest an, eventuell zu fest. Denn eine Person ist nach SOF und GOF nicht nur auf explizit als wahr akzeptierte Sätze (mit ihren ontologischen Implikationen) festgelegt, sondern auch auf solche, die logisch aus ihnen folgen. Das scheint eine zu starke Rationalitätsanforderung zu sein (sie wird denn auch im Verlauf der Untersuchung mehrmals modifiziert). Vielleicht ist dies jedoch der Preis, den man zahlen muß, wenn man ontologische Fragen ausschließlich logisch-linguistisch beantworten will und von Rationalitätsstandards abhängig macht – auf S. 30 wird die Konsistenz-Anforderung zu einer Kohärenz-Anforderung verschärft. *Zweitens*, auf welche Entitäten man sich nach SOF und GOF ontologisch festlegt, ist hingegen eher schwach angedeutet: offenbar auf das, was durch singuläre und generelle Terme (wahrheitsgemäß) bezeichnet wird. Aber die klassische Substanz-Attribut-Ontologie gemäß der Subjekt-Prädikat-Struktur der Sätze ist nicht zu verkennen, was durch vier „existentielle“ Prinzipien (31-42) der singulären und generellen Prädikation bzw. Relation verdeutlicht wird, in denen auch die beiden üblichen Quantoren eingeführt werden. Von ihrem Ansatz her konsequent, hütet sich Reicher, an dieser Stelle von ‚Eigenschaften‘ und ‚Beziehungen‘ im ontologischen Sinn zu sprechen, wird aber nolens volens inkonsequent, wenn sie Beispiele anführt. Unterstellt wird so ein als unproblematisch erachteter Standard sowohl der logischen Grammatik als auch der stillschweigend vorausgesetzten Ontologie; eigentliches Analyseziel scheinen die sogenannten problematischen, merkwürdigen, „unerwünschten“ Fälle zu sein. Daß bereits dieser Standard problematisch sein könnte, fällt hier aus dem Blick.

Mit SOF, GOF und den Existenz-Prinzipien ausgerüstet, verteidigt Reicher zunächst (Abschnitt II, 43-108) ihre referentielle Auffassung gegen verschiedene Strategien der ontologischen Neutralisierung, untersucht anschließend (III, 109-222) das Verhältnis von Ontologie und Logik, indem sie verschiedene Arten der Quantifikation, existenzfreie Logiken und die Frage, ob Existenz ein Prädikat sei, diskutiert, um schließlich (IV, 223-295) die oben erwähnten Problemfälle zu behandeln.

Die Widerlegung der Neutralitätstheorien gehört sicherlich zum Besten des Buches, weil Reicher hier die Stärke ihres Rationalitäts-*cum*-Referenz-Ansatzes unter Beweis stellen kann. An der *Paraphrasierungsstrategie* qualifiziert Reicher ihre eigene referentialistische Auffassung gegenüber einem uneingeschränkten Radikalen Refe-

rentialismus. Paraphrasierung, so Reicher, ist prinzipiell nur adäquat, wenn keine lexikalische, metaphorische oder logische Mehrdeutigkeit vorliegt. Begründung: Eine Paraphrasierung muß eine Äquivalenzrelation sein, sonst ist sie keine. Wenn sie jedoch diese Bedingung erfüllt, ist sie witzlos und unnütz. Nützlich und adäquat kann sie hingegen nur sein, wenn eine entsprechende Mehrdeutigkeit vorhanden ist. Das einschlägige Beispiel ist hier die „durchschnittliche Frau“, von der ausgesagt wird, dass sie „2,3 Kinder hat“. Niemand sei gezwungen, sich auf statistische Frauen und Drittel-Kinder ontologisch festzulegen, weil man das Ganze auch korrekter sagen könne. An diesem marginalen Ergebnis ist bereits zu ersehen, dass Paraphrasierung nicht besonders ergiebig ist.

Weiterhin wird die Strategie der Neutralisierung aufgrund der *Kontextuellen Semantik* zurückgewiesen, vor allem durch die Kritik an verschiedenen Standards der Behauptbarkeit. Reicher vertritt hier ausdrücklich ein *Prinzip der Formulierung von Wahrheitsbedingungen* für alle Diskursbereiche und kann dadurch beispielsweise auch naturalistische Voreingenommenheiten aushebeln: Wer den Satz „Die Sonnenblume auf meinem Balkon wächst schnell“ als wahr akzeptiert, darf keine Probleme damit haben, auch den Satz „Beethovens Fünfte Symphonie hat vier Sätze“ als wahr zu akzeptieren. Verworfen wird ebenfalls die Vermeidungsstrategie der ontologischen Festlegung durch ihre Begrenzung auf die *Metasprache*, während die *Objektsprache* für ontologisch neutral deklariert wird. Das, so die Autorin, liefe auf einen völligen Verzicht auf Wahrheitsbedingungen hinaus; unsere Gedanken und Sätze wären nicht mehr in der Wirklichkeit verankert (93).

Ein kleines Paradestück ist Reichers Zurückweisung der Neutralisierung qua *Seinsweisen* (95-108). Der Neutralitätstheoretiker behauptet, dass man nicht eindeutig ontologisch festgelegt sei, weil es ganz unterschiedliche Seinsweisen gäbe (etwa ‚Bestehen‘ und ‚Existieren‘). Reicher konstruiert nun ein Analogiebeispiel, indem sie „Sein“ durch „Schwimmen“ ersetzt, und zwei Schwimmweisen annimmt: „Schwimmen“ (im Fall, dass ein Mann schwimmt), „Schwümmen“ (im Fall, dass eine Frau schwimmt). Gezeigt wird, dass Seinsweisenunterscheidungen redundant sind: „Es gibt nicht verschiedene Weisen des Seins, sondern verschiedene Arten von Gegenständen“ (105).

Aus dem umfangreichen Abschnitt über Ontologie und Logik möchte ich drei Dinge kurz herausgreifen, die Reichers Vorgehensweise zeigen.

Ad *Quantoren*: Ausgangspunkt ist die natürliche (deutsche bzw. österreichische) Sprache mit seinem schillernden „es gibt“. Wenn wir also entscheiden wollen, ob dieser Ausdruck eine ontologische Bedeutung hat, dürfen wir nicht sofort in eine bestimmte reglementierte Sprache übergehen, sondern sollten unseren Quantor etwas allgemeiner halten, Reicher schlägt vor, hier von einem „E-Quantor“ zu sprechen. Daraufhin untersuchen wir „es gibt“-Fälle und unterscheiden, je nach Kontext, ob hier eine ontologische Deutung adäquat ist oder nicht. Ergibt unsere logische Interpretati-

on, dass sie adäquat ist, wie beispielsweise in dem Satz „Es gibt etwas, das mit dem Abendstern identisch ist“, kommt der klassische Existenzquantor mit dem umgedrehten E in Frage. Ergibt unsere Interpretation hingegen, dass sie es nicht ist, wie in dem Beispielsatz „es gibt etwas, das Anna weiß und das Bruno nicht weiß“, ist der „ $\Sigma$ -Quantor“ angemessen, ein reiner „Partikularisator“ (*particular quantifier*), der keine ontologische Implikation hat (164-5).

*Ad Existenzfreie Logiken:* Freie Logiken haben ihre *logische* Berechtigung, da von der ontologischen Festlegung auf Entitäten dezidiert abgesehen werde; gerade deshalb könnten mit ihrer Hilfe diese Probleme aber *nicht* gelöst werden.

*Ad Existenz als Prädikat:* Nach dreißig Seiten Erörterung bleibt es für Reicher dabei: „Existenz ist niemals ein Prädikat erster Stufe“ (222).

All dies wird argumentativ gut gestützt. Eins ist mir dabei jedoch unklar geblieben: Wie entscheidet Reicher, in welche Logik die natürlichsprachlichen Aussagen übersetzt werden sollten, etwa welcher Quantor adäquat ist, wenn ihr Ausgangspunkt doch nichts anderes ist als eine Menge von für wahr gehaltenen Sätzen (siehe SOF und GOF)? Zeigen die Sätze dies selbst an? Wodurch? Oder muß hier ein anderes Wissen zur Hilfe genommen werden, das der logischen Analyse vorausliegt, um zu entscheiden, was ontologisch festlegend ist und was nicht? Ich habe den Eindruck, dass Reicher in der Konstruktion und Interpretation ihrer vielen Beispiele genau dies voraussetzt, aber nicht explizit macht.

Diese Tendenz ist auch auffällig im letzten Teil der Arbeit, in dem die notorisch ‚unliebsamen‘ Fälle ontologisch evaluiert werden. Da soll die Analyse von *Aussagen* über fiktive Gegenstände dazu führen, sie in eine ‚realistische Ontologie kultureller Gegenstände‘ (245ff.) einzugemeinden, während andererseits ein Meinongianismus vermeidbar sei und sein sollte. Ist das Common Sense, ist das Intuition, ist das unserem ‚Weltbild‘ geschuldet? Am unentschiedensten ist Reicher in der Frage, wie wir es mit vergangenen und zukünftigen Gegenständen aufgrund der *tempora verbi* halten sollten.

Schade schließlich, dass es kein Abschlusskapitel gibt. Ein allgemeines Resümee, möglicherweise mit einem Ausblick auf weitere Untersuchungen, wäre für die Leserinnen und Leser, denen zum Schluß der Kopf vor lauter Beispielsätzen schwirrt, recht hilfreich gewesen.

Trotz dieser kritischen Bemerkungen ist festzuhalten, dass Maria Reicher zweifellos eine eindrucksvolle Studie gelungen ist, die auch von Opponenten des semantizistischen Ansatzes in der Ontologie mit großem Gewinn gelesen werden kann.

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## On Denoting 1905-2005

These new essays mark the one hundredth anniversary of the publication of Bertrand Russell's article "On Denoting" in the journal *Mind*. The authors are an international group of Russell scholars and experts on the topics that he discussed: James Levine, Alasdair Urquhart, Peter Simons, Maria E. Reicher, Janet Farrell Smith, Francis Jeffry Pelletier & Bernard Linsky, Francisco Consuegra, Herbert Hochberg, Elena Tatievskaya, Thomas Mormann, Oswaldo Chateaubriand, Wolfgang Degen and Guido Imaguire.

Starting with a reprint of the original article, the essays include historical studies of the antecedents of "On Denoting" in Russell's earlier manuscript writings, the details of Russell's arguments in the paper, including the notorious "Gray's Elegy Argument", Russell's rejection of alternative theories of Gottlob Frege and Alexius Meinong, as well as various ideas about logical form and natural language that arise from the essay. Russell's theory of definite descriptions still remains the "paradigm of philosophy" as Frank Ramsey called it, a model of analytic philosophy that has remained current from 1905 to 2005, and promises to continue to inspire philosophers.

### *The Editors:*

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