Are Intrinsic Properties Independent of Accompaniment?

Xiao Li
University of Vienna, Vienna Austria 1010

Abstract

A combinatorial analysis of intrinsicality takes intrinsic properties to be independent of accompaniment: a property is intrinsic only if it is possible for a lonely or an accompanied thing to have it or lack it (I). Cameron argues that the combinatorial analysis in Langton & Lewis (1998) faces an epistemic circularity, which makes (I) suspicious. In this paper, I examine two approaches to free the combinatorial analyses from the circularity and find them all fail. Then I provide an outline of an argument for (I) by appealing to the grounding analyses of intrinsicality, which shows an advantage of the grounding analyses over the combinatorial ones.

Keywords

Intrinsic property, Independent of accompaniment, Grounding

DOI: 10.47297/wspjhcWSP2515-469902.20210501

1. Introduction

It is commonly believed that some properties are intrinsic and some are extrinsic. For example, the property of being an electron is intrinsic, while being 2 kilometers away

About the author

LI Xiao, Ph. D. student, Department of Philosophy, University of Vienna, research areas: Metaphysics, Philosophy of Language. Email: today1911@163.com

from Beijing is extrinsic. According to Lewis, there are several ways to clarify what intrinsic and extrinsic properties are, for example:

> "A sentence or statement or proposition that ascribes intrinsic properties to something is entirely about that thing; whereas an ascription of extrinsic properties to something is not entirely about that thing, though it may well be about some larger whole which includes that thing as part. A thing has its intrinsic properties in virtue of the way that thing itself, and nothing else, is. [⋯] The intrinsic properties of something depend only on that thing; whereas the extrinsic properties of something may depend, wholly or partly, on something else. [⋯]"[1]

We can find three notions of intrinsic properties in the quotation above: 1) a sentence that ascribes an intrinsic property F to a thing is entirely *about* that thing; 2) a thing has an intrinsic property F wholly *in virtue of* the way that thing is; 3) whether a thing has an intrinsic property F *depends on* the thing itself rather than something else.

Although all the three notions more or less match our intuition about the distinction between intrinsic/extrinsic properties, they are still not clear enough and even may conflict with each other.[2] Therefore, same philosophers attempt to further elaborate on these three notions. The analyses that elaborate on the third notion are traditionally called *combinatorial analyses*. One famous combinatorial analysis, offered by Langton & Lewis (1998), uses the strategy of *independence of accompaniment*: a property is intrinsic, only if whether a thing has it is irrelevant to whether that thing is accompanied by other contingent entities. In other words, a property F is intrinsic only if all the following four situations are possible:

A lonely thing has F;

A lonely thing lacks F;

A thing companied by other contingent entities has F;

A thing companied by other contingent entities lacks F.

There are various challenges towards the combinatorial analyses of intrinsic properties. An interesting one is the challenge of circularity raised by Cameron (2008). Cameron argues that in Langton & Lewis (1998), the strategy of

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1 Lewis (1983a), 111. Page number according to *Papers in Metaphysics and Epistemology.*

2 See Marshall & Weatherson (2018), Section 2.

independence of accompaniment can only be justified when the *Recombination Principle* is true, but the truth of the latter presupposes the truth of the former. Thus, both are epistemically suspicious.

In the following sections of this paper, I will first introduce the analysis of intrinsic properties in Langton & Lewis (1998) (Section 2), then explain the diagnosis of circularity in Cameron (2008) (Section 3), discuss several approaches to free Langton & Lewis (1998) from the epistemic circularity (Section 4), and finally propose a sketch for explaining why intrinsic properties are independent of accompaniment with the help of grounding analyses of intrinsicality (Section 5).

2. Langton & Lewis on Intrinsic Properties

A combinatorial analysis of intrinsic properties is an attempt to analyze intrinsic properties by appealing to their distribution among contingent actual and possible things. One of the first attempts to define intrinsic properties along this line of thought is made by Jaegwon Kim, who defines intrinsic properties as those that can be possessed by a lonely thing.[3] But Lewis soon discovers that this definition is not sufficient, for the property of being a lonely electron can be possessed by a lonely electron but is extrinsic. Therefore, Langton & Lewis propose the following three-step analysis:

Step 1: define basic intrinsic properties. A property F is a basic intrinsic property iff i) F is independent of accompaniment, ii) F is not a disjunctive property, and iii) F is not the negation of a disjunctive property.

Step 2: define duplicates. Two things are duplicates iff they have the same basic intrinsic properties.

Step 3: define intrinsic properties. A property G is intrinsic iff it never can differ between two duplicates.[4]

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3 Kim (1982), 59-60.

4 Langton & Lewis (1998), 120-1. Page number according to *Papers in Metaphysics and Epistemology*.

I will focus on the concept of basic intrinsic properties in the following paragraphs.

To define basic intrinsic properties, we need to define loneliness and accompaniment. A thing x is lonely in a possible world w iff there is no contingent entity that is wholly distinct from x. Otherwise, x is accompanied in w. To clarify, the mereological parts of x are not wholly distinct from x. The property F is independent of accompaniment iff:

It is possible for a lonely thing to have F;

It is possible for a lonely thing to lack F;

It is possible for an accompanied thing to have F;

It is possible for an accompanied thing to lack F.

But being independent of accompaniment is not sufficient for F to be a basic intrinsic property. For example, the property "being a lonely cube or an accompanied ball" is independent of accompaniment, because it can be possessed by a lonely cube or an accompanied ball, and cannot be possessed by an accompanied cube or a lonely ball. But, of course, it is not an intrinsic property. Likewise is the property "being the only ball". To exclude these properties, Langton & Lewis argue that disjunctive properties and their negations are not basic intrinsic properties. A property H is disjunctive iff it can be expressed by a disjunction of several properties and each disjunct is more natural than H.[5] For example, "being a lonely cube or an accompanied ball" (K) can be expressed by the disjunction of "being a lonely cube" and "being an accompanied ball", which are both more natural than K. Hence, K is not a basic intrinsic property. Similarly, "being the only ball" can be expressed by the negation of the property "being a non-ball or being a ball accompanied by other balls", which is disjunctive.

This way of analyzing intrinsic properties faces various challenges.[6] One important challenge is that analyzing intrinsic properties by appealing to the strategy of independence of accompaniment faces the risk of epistemic circularity. If so, not only Langton & Lewis (2008) but also any other ways of analysis employing that strategy are doomed to fail. I will elaborate on this

5 Langton & Lewis (1998), 120.

6 See for example Hoffmann-Kolss (2010, Ch. 3.2.3.2), Marshall (2012), Marshall & Weatherson (2018, 3.3). And Weatherson (2001) proposes a rather complex holistic definition of intrinsic properties along this line.

challenge in the following section.

3. Cameron's Diagnosis of Circularity

Cameron points out a risk of epistemic circularity resulting from the strategy of independence of accompaniment, that is, to justify the strategy of independence of accompaniment, we should presuppose the truth of the *Recombination Principle*. But justifying the latter presupposes the truth of the former. In this section, I will first explain what the *Recombination Principle* is, and then show the interdependent relationship between this principle and the strategy of independence of accompaniment.

3.1 The Recombination Principle

According to Lewis, it is always possible for any parts of possible worlds to coexist. In other words,

"[A]nything can coexist with anything else, at least provides they occupy distinct spatiotemporal positions. Likewise, anything can fail to coexist with anything else." [7]

Lewis believes that there are no necessary connections between wholly distinct contingent entities, so it is possible for any positive number of any contingent entities to coexist with each other. It follows that a contingent entity does not need to coexist with any other contingent entity, i.e. it is possible for any contingent entity x to be lonely.

However, according to Lewis' theory of possible worlds, a thing x only exists in one possible world, and there are x's counterparts in other possible worlds. It is possible for x to be so-and-so iff there is a possible world w in which x's counterpart is so-and-so. As it is possible for any contingent entity x to be lonely, can we say that for any contingent entity x, there exists a possible world w in which x's counterpart is lonely? The answer is no, and here is the reason. The cross-world counterpart relationship is determined by similarity, i.e. given a thing a in w_1, what a's counterpart is in another world w_2 depends on which entity is the most similar to a in certain relevant aspects. When we consider similarity, we will not only compare candidates' intrinsic properties, but

7 Lewis (1986), 87-8.

also some extrinsic features, e. g. their origins or external environments where they inhabit. For example, some hold that Elizabeth II is necessarily the daughter of George VI. Then there is no possible world where the counterpart of Elizabeth II exists while the counterpart of George VI does not exist. Therefore, there is no possible world in which the counterpart of Elizabeth II is lonely. Here (I quantify over all entities throughout the whole history of a possible world.)

To avoid this difficulty, Lewis suggests that we should consider duplicates rather than counterparts. Then we have the following principle:

The Recombination Principle

"For any wholly distinct [contingent entities] $x_1, x_2, x_3, \cdots, x_n$ there is a world [w] containing any positive number of duplicates of each, and no [purely contingent entity] which does not [completely] overlap any of those duplicates, size and space permitting."[8] [9]

One implication of *The Recombination Principle* is:

Lonely Duplicate

For any contingent entity x there is a possible world w in which x's duplicate is lonely.

3.2 Independence of Accompaniment Presupposes the Recombination Principle

What is the relationship between the *Recombination Principle* and the combinatorial analysis of intrinsic properties?

We have been told that the combinatorial analysis employs the strategy of independence of accompaniment: a property F is intrinsic iff the following four cases are all possible: a lonely thing has F, a lonely thing lacks F, an accompanied thing has F, and an accompanied thing lacks F. Cameron argues that this strategy cannot succeed unless there are no necessary connections between contingent entities, because:

"[O]bviously properties can only be had independently of accompaniment if

8 Cameron (2008), 3. With some revisions.

9 By purely contingent entities, I mean the entities that are themselves contingent and have only contingent entities as their proper parts. This limitation is to permit the existence of entities such as the mereological sum of a contingent entity x and its singleton {x} in those possible worlds *w*.

it is possible that *things* can exist independently of accompaniment to have those properties."[10]

In other words, for intrinsic properties to be possessed by lonely things, it should be ensured beforehand that lonely things *exist*. Conversely, if no contingent entity can be lonely, it is impossible for any properties to be possessed by a lonely thing. Suppose there are no lonely contingent entities (actual and possible) at all, namely, each possible world contains at least two wholly distinct contingent entities, then no property can be possessed or lacked by a lonely thing. Therefore, according to Langton & Lewis (2008), no property is a basic intrinsic property, and any pairs of contingent entities, no matter how arbitrary, are duplicates in a trivial sense.[11] This result is not desirable.

Hence, analyzing intrinsic properties with the strategy of independence of accompaniment can only succeed if we have reasons to deny any necessary connections between contingent entities, especially if we have reasons to believe that contingent entities can be lonely. And we have seen in 3.1 that Lewis ensures the existence of lonely contingent entities by the truth of the *Recombination Principle*. Therefore, for Lewis, the strategy of independence of accompaniment can only be effective if we have been justified beforehand to believe that the *Recombination Principle* is true.

3.3 The Recombination Principle Presupposes Independence of Accompaniment

In 3.1, we have seen that Lewis uses the concept *duplicate* to formulate the *Recombination Principle*. According to that principle, for any contingent entities, there is a possible world in which any positive numbers of each of their duplicates coexist. Especially, for any contingent entity, there is a world in which its duplicate is lonely. But the concept *duplicate* has a deep connection with intrinsic properties.

Roughly speaking, a particular *x* is the same as its duplicate *y*. But we cannot say that *x* and *y* share all their properties, for two things that are the same can inhabit different environments, and thus have different extrinsic properties. Therefore, we should say that *x* and *y* are duplicates of each other iff they share all their intrinsic properties.[12]

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10 Cameron (2008), 4. Emphasis is original.

11 Cameron (2009), 271.

12 Lewis (1983b), 25-6. Page number according to *Papers in Metaphysics and Epistemology.*

Cameron then imagines of the following situation. Suppose a thing *a intrinsically* has a relation R to a contingent entity wholly distinct from *a.* In other words, *a* has the intrinsic property" having relation R to a wholly distinct contingent entity". Then any *a*'s duplicate *b* has this property and is accompanied by a wholly distinct contingent entity. If this property does exist, the *Recombination Principle* is false, because the *Recombination Principle* says *a* has a lonely duplicate.[13] So the truth of the *Recombination Principle* presupposes that this kind of intrinsic properties does not exist, i.e. any intrinsic properties should be independent of accompaniment, and therefore can be possessed by lonely things.

Some people may argue that the property of "having relation R to a wholly distinct contingent entity" cannot be intrinsic in the first place, because a thing *x* does not have this property wholly in virtue of the way *x* is, but partly in virtue of the existence of another contingent entity and its relation to *x*. But this is not a big problem. Let us consider another case. Suppose for an intrinsic property F (e.g. being two kilograms), there is a brute fact that anything having F is necessarily accompanied by at least one wholly distinct contingent entity. Since whether a thing has F depends on the thing itself rather than anything else, we should intuitively accept that F is intrinsic. But in this case, F is not independent of accompaniment. Therefore, any contingent entity having F does not have a lonely duplicate, and the *Recombination Principle* is false.

To clarify, what Cameron argues is that to be justified to believe the *Recombination Principle* we have to be justified beforehand to believe that intrinsic properties are independent of accompaniment. But this does not mean that denying necessary connections between wholly distinct contingent entities presupposes some facts about intrinsic properties. *The Recombination Principle* is just one way to deny necessary connections, and since it employs the concept *duplicate*, its truth epistemically presupposes some facts about intrinsic properties.[14] If we have another way to deny necessary connections whose truth does not presuppose any facts about intrinsic properties, we can avoid this epistemic circularity.

So far I have explained Cameron's challenge to the strategy of

13 Cameron (2008), 5.

14 Ibid, 6-7.

independence of accompaniment. In short, the analysis of intrinsic properties using this strategy can only succeed if intrinsic properties are independent of accompaniment, which implies that any of them can be possessed by something lonely. But the truth of the latter at least presupposes that lonely contingent entities exist, which is implied by the *Recombination Principle*. But Lewis' formulation of the *Recombination Principle* further uses the concept *duplicate*, which has a close connection with intrinsic properties. The truth of the *Recombination Principle* presupposes that intrinsic properties are independent of accompaniment, but the truth of the latter presupposes the truth of the *Recombination Principle* in the other way around. Cameron argues that here we face an epistemic circularity, which makes the truth of both intrinsic properties' independence of accompaniment and the *Recombination Principle* unjustifiable. In order to be justified to believe the former, we should be justified to believe the latter beforehand, and vice versa. This epistemic circularity makes the employment of the strategy of independence of accompaniment suspicious.

4. Some Approaches to Avoid the Circularity

In this section, I will discuss two approaches to save the strategy of independence of accompaniment from the circularity Cameron alleges. But all of them are not satisfactory.

Approach 1: The truth of intrinsic properties' independence of accompaniment does not presuppose the denial of necessary connections between *all* contingent entities. A possible proponent of this attempt can argue that the success of the strategy presupposes the following truth:

The Independence Principle

For any basic intrinsic property F, it is possible for a lonely contingent entity to have F, and it is possible for a lonely contingent entity to lack F, and it is possible for an accompanied contingent entity to have F, and it is possible for an accompanied contingent entity to lack F.

Although this principle denies that all contingent entities are accompanied, it is compatible with the fact that some contingent entities have necessary

connections with each other. Some distributions of all actual and possible contingent entities among all possible worlds are able to make *The Independence Principle* true but maintain some necessary connections between some contingent entities. In other words, we will be going too far in denying necessary connections between *all* contingent entities if we aim to make the *Independence Principle* true. For the *Independence Principle*, the denial of necessary connections between all contingent entities is much too strong a demand.

Comment: Although it is too strong to deny necessary connections between all contingent entities for the sake of the *Independence Principle*, this cannot save the strategy from circularity.

Suppose some contingent entities have necessary connections with other contingent entities. For convenience, let me suppose that two wholly distinct contingent entities *c* and *p* in our actual world necessarily appear together, and any other contingent entities in all possible worlds except duplicates of *c* and *p* are freely combinable. According to Lewis, what we suppose is that all possible duplicates of *c* are accompanied by at least one duplicate of *p*, and vice versa. Is the *Independence Principle* true under this condition? It depends. 1) Suppose that *c* and its duplicates have a unique intrinsic property C (or *p* and its duplicates have a unique intrinsic property P). Then the *Independence Principle* is false, since the intrinsic property C (or P) cannot be possessed by a lonely entity. 2) Suppose that *c*, *p* and their duplicates do not have any unique intrinsic properties. Then any intrinsic property F[15] possessed by *c* or *p* can be possessed by another contingent entity *d* and lacked by another entity *e* (*d* and *e* are neither duplicate of *c* nor *p*). Since neither *d* nor *e* has necessary connections with other wholly distinct contingent entities, there are a lonely duplicate of *d* having F and a lonely duplicate of *e* lacking F. In this situation, the *Independence Principle* is true.

The above discussion shows that when some wholly distinct contingent entities have necessary connections with each other, the truth of the *Independence Principle* should exclude cases like 1). By excluding all contingent entities which have necessary connections with some wholly distinct

15 All intrinsic properties discussed about here are not necessary properties. In terms of the question of whether necessary properties have the intrinsic/extrinsic distinction, see Eddon (2011), Bader (2013), and Hoffman-Kloss (2014).

contingent entities, we have a set S having all the remaining actual and possible contingent entities as its member. (It is obvious that S has more than one member.) *All* members of S do not have any necessary connections with other wholly distinct entities. And for any intrinsic property F, there are at least one member of S having F and at least one lacking F. We call S a complementary recombinatorial set. Then the truth of the *Independence Principle* presupposes the existence of a complementary recombinatorial set, which means that we still need to deny necessary connections between wholly distinct contingent entities in a smaller range, i.e. in the set S. And this is ensured by the following principle:

The Restricted Recombination Principle

For any wholly distinct contingent entities $x_1, x_2, x_3, \cdots, x_n$ in a set S, there is a world *w* containing any positive number of duplicates of each, and containing no purely contingent entities which does not overlap any of those duplicates, size and space permitting.

This principle uses the concept *duplicate* again, and thus its truth still presupposes that intrinsic properties are independent of accompaniment.[16]

Approach 2: The truth of intrinsic properties' independence of accompaniment needs not presuppose the *Recombination Principle* or the *Restricted Recombination Principle,* thus faces no circularity. That is, there are other conditions than the two principles under which the *Independence Principle* can be true.

Let us consider the following case. Suppose all lonely contingent entities have no duplicates. Then both the *Recombination Principle* and the *Restricted Recombination Principle* are false. But for any intrinsic property F, there is at least one lonely contingent entity having F and at least one lacking F, which partly warrants the truth of the *Independence Principle*. Is this case possible?

For convenience, let us suppose that some intrinsic properties are

16 Further, since we have no direct approach to the knowledge about distribution of entities in possible worlds, we do not know which principle is true. But at least the *Recombination Principle* seems more natural than the *Restricted Recombination Principle*, for no direct evidence can tell us why some special wholly distinct contingent entities have necessary connections with each other. If so, the belief that all wholly distinct contingent entities have no necessary connections with each other seems more likely to be true.

fundamental intrinsic properties. The distribution of all other intrinsic properties supervenes on the distribution of fundamental intrinsic properties. We call a set compatible set when its members are fundamental intrinsic properties and all of them can be possessed by one and the same particular, size and space permitting. Suppose the largest compatible set is $\{F_1, F_2, \cdots, F_n\}$. Then the conjunctive property $F_1 \wedge F_2 \wedge \cdots \wedge F_n$ is intrinsic. *The Independence Principle* demands that there are both a lonely contingent entity *a* and an accompanied entity *b* having $F_1 \wedge F_2 \wedge \cdots \wedge F_n$. As long as *a* and *b* both have this property, they cannot differ from each other in respect to any intrinsic properties,[17] and thus become duplicates of each other. But according to our original supposition, no lonely entities have duplicates. Therefore, the condition mentioned in the last paragraph can only be possible when there is no largest compatible set of fundamental intrinsic properties.

Then the *Independence Principle* can be true under the following conditions: i) all lonely contingent entities do not have duplicates; ii) for any intrinsic property F, there is a lonely contingent entity having F and a lonely contingent entity lacking F; iii) the largest compatible set of fundamental intrinsic properties does not exist. But then both the *Recombination Principle* and the *Restricted Recombination Principle* are false. Therefore, we have shown that the truth of the *Independence Principle* does not need to presuppose these principle.

Comment: Although the conditions above indeed make the *Independence Principle* true without presupposing the *Recombination Principle* or the *Restricted Recombination Principle,* this case still cannot bring us out of the circularity. That is because it is not enough to have a *conceivable* case that makes the *Independence Principle* true. We need further to *be justified to believe* that case is true, and the relevant reasons should not include the *Independence Principle* or its parts. But condition ii) is obviously a part of the *Independence Principle*, so we can only be justified to believe that case holds when we have been justified to believe that the *Independence Principle* is true. The circularity remains.

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17 *a* and *b* cannot differ from each other in respect to intrinsic properties unless they differ in respect to at least one fundament intrinsic properties. Since both *a* and *b* have $F_1, F_2, \cdots, F_n$, they can only differ when one of them has a new fundamental intrinsic property F_{n+1}. But that is impossible, since $\{F_1, F_2, \cdots, F_n\}$ is already the largest compatible set.

From the discussions above, we find that the existence of lonely contingent entities alone is not enough to justify the *Independence Principle*. To make the principle true, the distribution of intrinsic properties among these lonely contingent entities should satisfy the demands of the principle. That is why all the approaches above presuppose the *Independence Principle*. Therefore, it is very likely that all attempts to justify the *Independence Principle* by appealing to the belief about ways of distribution of entities in possible worlds will eventually fail. So we need to search for some *direct* reasons to justify the belief that intrinsic properties are independent of accompaniment.

The key point of Cameron's argument is that there is no direct evidence for this belief. He thinks that our pre-theoretical understanding of intrinsic properties cannot decide whether they can be possessed by lonely entities or not. In other words, our ordinary grasp of the concept of intrinsic property contains no contents about whether intrinsic properties are independent of accompaniment or not.[18] If it is the case, then any versions of combinatorial analyses of intrinsic properties are doomed. However, according to our ordinary understanding of intrinsicality, the idea of intrinsic properties' independence of accompaniment does seem to be intuitively attractive. One may claim that if there are entities and properties in possible worlds, and whether a contingent entity has an intrinsic property is *independent of* other wholly distinct entities, then it is very likely to be true that there are lonely entities having or lacking an intrinsic property. This way of reasoning is possible to be valid because we can interpret the expression of "independent of" in a non-modal way, that is, a thing does not have an intrinsic property in virtue of the ways other things are, which follows the second understanding mentioned in the Introduction. Since how other wholly distinct things are has no determinative or explanatory relations to a thing's having an intrinsic property or not, it is more reasonable to believe that lonely entities can have or lack intrinsic properties.

Inspired by the reasoning above, I am going to propose a sketch for a direct argument for intrinsic properties' independence of accompaniment. In that argument, I understand the concept of intrinsicality in an *in-virtue-of* way, and propose to ground the distribution of intrinsic properties among possible worlds on the distribution of fundamental properties among possible worlds.

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18 Cameron (2008), 6.

5. The Grounding Analyses and Intrinsic-fundamental Supervenience

Recall that there is another notion of intrinsic properties: 2) a thing has an intrinsic property F wholly in virtue of the way that thing is. As the combinatorial approach is facing more and more difficulties, analyzing intrinsic properties along this line is gaining popularity, with advocators including Bader (2013) and Witmer (2014). Call these analyses the grounding analyses. A typical grounding approach goes like follows:

Step 1: A thing *a* has the property F intrinsically iff *a*'s being F is wholly grounded in i) *a*'s having some fundamental properties, or ii) *a*'s parts' having some fundamental properties or standing in some fundamental relations to each other.

Step 2: A property G is intrinsic iff i) it is fundamental, or ii) it is necessary that if an entity x has G, it has G intrinsically.

Here I shall explain the concept of grounding and fundamentality. When we say that *p* is grounded in *q*, we claim that *q* provides a non-causal metaphysical explanation to the obtaining of *p*. For example, since the existence of Socrates provides the metaphysical explanation to the existence of the singleton {Socrates}, we say that the latter is grounded in the former. In particular, we call a property (or relation) a fundamental one iff the fact that a particular (or some particulars) instantiates it or the fact that a particular (or some particulars) does not instantiate it is not grounded in anything. We also call those states of affairs without groundings fundamental states. Roughly speaking, this approach clarifies intrinsic properties as those whose instantiations are necessarily wholly grounded in the fundamental states of their instances.

This approach has several advantages over the combinatorial one.[19] But here I want to focus on its ability to explain why intrinsic properties are independent of accompaniment. The outline of the argument goes as follows:

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19 For one thing, it will take necessary properties like being such that 1+1=2 to be extrinsic. For more discussions, see Eddon (2011). And for arguments against analyzing intrinsic properties using hyperintensional tools, see Hoffmann-Kolss (2010).

(P1) If the obtaining of a state has no explanation and it is possible not to obtain, then by subtracting it from a possible world, we have another possible world where all the states wholly unrelated to the former one remain the same.

(P2) The obtaining of a fundamental state has no explanation.

(C1) Fundamental states are independent of accompaniment, that is, it is possible for a fundamental state to obtain in a world with or without other fundamental states, as long as the world is not incoherent.

(P3) The distribution of intrinsic properties among actual and possible things supervenes on the distribution of fundamental states solely of their instances (or the instances' parts).

(C2) Intrinsic properties are independent of accompaniment.

The intuition behind P1 is that since the obtaining of a state has no explanation, it is not constrained by any conditions, and thus it is possible that this state simply does not obtain, leaving the other wholly unrelated states unaffected. By "wholly unrelated", I roughly mean that the states stand in no substantive relations to each other, be them logical, metaphysical, or mereological.

C1 follows from P1 and P2. In other words, possible worlds can be viewed as the recombination of fundamental states without contradictions, and in particular, it is possible that only one fundamental state obtains while others do not obtain. [20]

P3 holds in virtue of our analysis of intrinsic properties above. For example, if F is a non-fundamental intrinsic property, then wherever a thing *a* is F, one of the fundamental states that wholly ground *a*'s being F must hold, and the state is either *a*'s having some fundamental properties (e. g. *a*'s being G) or *a*'s parts' having some fundamental properties or standing in some fundamental relations.

And finally, by combining C1 and P3 we have C2. Since there is a possible world where a lonely thing *a* is G, there can be a lonely thing instantiating F.

If the explanation above were successful, we would have a direct reason to favor the *Independence Principle* with no circularity. But is this good news for the proponents of the combinatorial analyses? Not totally. By supporting the *Independence Principle* in this way, we would have a new reason to favor the grounding approach over the combinatorial one, for the former is more

20 For an elaboration of the idea behind P1 and C1, see Dasgupta (2021), 137-9.

fundamental in analyzing the nature of intrinsic properties. By "fundamental", I mean that the former can explain the truth of an important presupposition of the latter, i. e. the *Independence Principle*. But the combinatorial analyses hardly have any theoretical resources to explain it. This means that the facts that intrinsic properties are independent of accompaniment, to which the combinatorial analyses appeal, can be explained in principle by other facts, and are thus less fundamental. So the combinatorial analyses only employ a non-fundamental fact in analyzing intrinsic properties.

6. Conclusion

Cameron argues that in order to be justified to believe that intrinsic properties can be possessed by a lonely contingent entity, we should be justified to believe that lonely contingent entities exist beforehand, namely, wholly distinct contingent entities have no necessary connections between each other. If we further spell out this denial of necessary connections by the *Recombination Principle*, we will face an epistemic circularity. The reason is that, to be justified to believe in the *Recombination Principle*, we are supposed to be justified to believe that intrinsic properties are independent of accompaniment, which brings us back to our starting point. Cameron thinks the root of this circularity lies in the fact that we lack any pre-theoretical intuition about whether intrinsic properties are independent of accompaniment or not. I proposed an outline of an argument for intrinsic properties' independence of accompaniment by appealing to the grounding analyses of intrinsic properties. Were it successful, it would rather show that a combinatorial analysis is not a fundamental approach to elaborate our understanding of intrinsic properties.

Acknowledgements

Many thanks to SHI Lingzhi, Christopher Sun, and other participants of the colloquium in Tsinghua University (SACO). Especially, I would like to thank Asher Jiang and Benjamin Schnieder for their detailed and inspiring comments. I would also like to thank ZENG Lu who carefully checked my manuscript for

typos and infelicities.

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