Partial Explanation

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Much of philosophy concerns itself with explaining phenomena and concepts in more fundamental terms (knowledge, personal identity, gender, &c). There are at least two prevalent ways in which we do so. We may, firstly, explain *why* something is so. Such an explanation picks out the truth in virtue of which the explanandum is true. (Why is the ball is coloured? Because it is red.) We may secondly explain *what* something is. Roughly, such an explanation picks out the properties of an entity in virtue of which it is what it is. (We explain what water is by reference to its chemical composition—water *is* H2O). These explanatory modes correlate with two notions that have seen a resurgence of interest in recent years: *ground* and *essence*.

Essence (What?)

- Q: *What* is water?
  A: Water *is* H20

- Essentialist explanations pick out properties of an item in virtue of which it is what it is.

- Essence can be understood as constitutive necessary condition.

Ground (Why?)

Q: *Why* is the apple coloured?
A: *Because* it is red.

Ground explanations pick out the fact in virtue of which the explanandum obtains.

Ground can be understood as constitutive sufficient condition.

Objectual and Predicational Essence

- Statements of *predicational essence* pick out the essences of predicates – knowing, believing, &c.
  - 'It is essential to b's accelerating that b is moving.'

- Statements of *objectual essence* pick out the essences of objects.
  - 'It is essential to Socrates that he is human.'

Essence as Predicational and Generic

- Predicational essence cannot be understood in terms of objectual essence.
  - Explanandum and explanans are uniform in the predicational mode, non-uniform in objectual mode.

- Objectual essence *can* be understood in terms of predicational essence.
  - Interpret 'what is S?' as 'what is it for x to be S?'
  - Eg. 'Socrates is essentially human' ➡ 'It is essential to x's being Socrates that x is human.'

- Thus, every essentialist statement is equivalent to one of the following form:

(E) $F(x) \sqsubset G(x)$ (It is essential to x's being G that x is F)

- By incorporating the identity relation in our understanding of objectual essence, this formulation captures nicely the intuition that an essential property of an object is one that it must have *for it to be what it is.*

- Notice that the objects in a statement of predicational essence are *arbitrary* objects of a given kind. Thus, predicational essence is *generic*.

Generic Ground

- Ground is typically formulated as a relation or operation on particular facts. Given that we are now understanding essence as generic, it is natural to look for a corresponding generic notion of ground. Such a notion has been developed by Richardson (2020), and it is the one we will consider. Statements of generic ground are of the form $F(x) \lessdot G(x)$, read *an x is G in virtue of being F.*
  - Eg. An act is right in virtue of maximizing happiness.
  - Eg. A body is accelerating in virtue of having a changing speed.

Are (Full) Essences Unique?

Only some essentialist explanations count as 'full' explanations.
  (i) Water is H20. ✔
  (ii) Socrates is Human ✖

Why is (i) a full explanation, but not (ii)?
———— A natural answer: (i) is full because being H20 is peculiar to water; (ii) is merely partial because being human is not peculiar to Socrates.

Df An essentialist statement $F(x) \sqsubset G(x)$ is **full** if $F(x)$ suffices for $G(x)$. In this case, we write $F(x) \sqsubseteq G(x)$.

While this definition is intuitive, it has a surprising consequence – it implies that we can provide distinct full essentialist explanations. Consider the 'origin essentialism' of Kripke [1980]. Presumably, my origin individuates me – nothing else shares it. And moreover, for Kripke, it is essential to me. Thus, by our definition, the essentialist explanation 'to be Alec is to have Alec's origin' is full. And yet, one can provide distinct partial essentialist explanations of what I am. Part of what it is to be me is to be human. Part of what it is to be me is to be an object, as opposed to a property or a relation. Thus, given our definition, full essences are not unique.

## Partial Essence and Partial Ground – Preliminary Definitions

We tend to think of partial explanations as parts of full explanations. In this spirit, consider the following definitions of partial ground and partial essence in terms of their full counterparts. The symbols $\lessdot$ and $<$ are used for partial and full ground, respectively; $\sqsubset$ and $\sqsubseteq$ are used for partial and full essence.

Partial Ground 1 $F(x) \lessdot G(x) \Leftrightarrow \exists \Delta (F(x), \Delta(x) < G(x))$

Partial Essence 1 $F(x) \sqsubset G(x) \Leftrightarrow \exists \Delta (F(x), \Delta(x) \sqsubseteq G(x))$

An Analogy with Mereology

Philosophers tend to think of the concepts we set out to explain as 'molecules'. In providing an explanation, we are breaking these molecules into their atomic 'parts'. For us, these 'parts' are essences, and an explanation aims to find some collection of parts (essences) which form a whole (ground). (We have seen that there may, in principle, be multiple ways of doing so). This analogy explains our current definitions of partial essence and partial ground. The expectation that partial explanations be part of full explanations corresponds to the following mereological principle: *If A is a proper part of B, then there is some leftover part C of B that does not overlap with A.* This principle, called 'weak supplementation' (WS), is
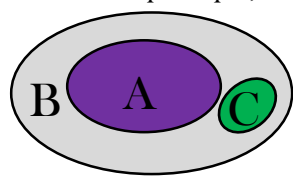
immensely intuitive – so much so that some philosophers have argued that it is analytic. However, what goes for mereology needn't go for explanations...

A Disanalogy with Mereology – Strictly Partial Explanation

Df An explanation (a statement of ground or essence) is **strictly partial** if it is a partial explanation that is not part of any full explanation.

As we have defined partial ground and partial essence, there are no strictly partial explanations. The rest of our work will be to carve out a place for strictly partial explanation, casting doubt on the necessity of our definitions.

Strict partial essence: The analogue of weak supplementation for essence is immensely implausible. Take the statement of partial essence *Alec is essentially mammalian.* Imagine if, in assenting to this, one assented to the existence of a full essence of Alec, of which 'mammalian' was a part.

More generally, the reason WS is implausible for essence is that partial essences are necessary conditions, and necessary conditions have no business, in general, being parts of sufficient conditions.

Given that we have reason to deny WS for partial essence, we have reason to deny the necessity of our preliminary definition of partial essence. Partial essentialist explanations needn't be parts of full explanations!

Connections between Partial Essence and Partial Ground

Our strategy now is to use the failure of WS for partial essence to argue against WS for partial ground. We can achieve this by showing how partial essentialist explanations determine partial ground explanations.

Partial essences determine partial grounds: Socrates is essentially human. Thus, if we are to inquire into why Socrates is what he is, we may say it is in part because he is human. In other words, the essentialist truth that Socrates is essentially human seems to determine a corresponding grounding truth, namely, that part of why Socrates is what he is is because he is human. I think this is an instance of a general principle:

EG $F(x) \sqsubset G(x) \Rightarrow F(x) \lessdot G(x)$

Note that the converse of **EG** does not hold. Part of why my wine is coloured is because it is red. But surely this does not imply that it is essential to my wine being coloured that it be red. So, essentialist explanations seem to determine corresponding grounding explanations, but not *vice versa.*

We will also need the fact that the 'mereological character' of the explanation is preserved. That is,

$$F(x) \sqsubseteq G(x) \Rightarrow F(x) < G(x)$$

and

$$F(x) \not\sqsubseteq G(x) \Rightarrow F(x) \not< G(x)$$

The reason this helps is that now we know strictly partial essentialist explanations determine strictly partial ground explanations. Thus, since there are strictly partial essences, there are strictly partial grounds! We have cast doubt on the prominent way of thinking of partial explanation. Partial explanations, whether essentialist or grounding, needn't be parts of full explanations.

Open Questions

Open questions remain. The most obvious is that, given that we have denied that partial explanatory modes can be defined in terms of their full counterparts, we should look for definitions of these full explanatory modes in terms of their partial counterparts. We have already done this for essence. But it proves more difficult in the case of ground. I do *not* have such a proposed definition. (Trogdon [2020] suggests that a full ground explanation is a partial ground explanation for which the explanandum is 'nothing over and above' the explanans.)

Another open question is that, given that we have said that partial essences determine partial grounds (**EG**), but have denied the converse, it is natural to look for an extra condition on a statement of ground to ensure that it determines a statement of essence. I *do* have a proposed answer here, but not enough space to defend it.

GE $[F(x) \lessdot G(x)] \& [H(x) \lessdot G(x) \Rightarrow [H(x) \lessdot F(x)] \vee F(x) \lessdot H(x)] \Rightarrow F(x) \sqsubset G(x)$

GE states that if $F(x)$ is a partial ground of $G(x)$ which is part of the sole chain of grounds of $G(x)$, then $F(x)$ is a partial essence of $G(x)$.

References

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