

A Dormitive Virtue Puzzle.

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Abstract

In Molière’s comedy *The Imaginary Invalid* a doctor “explains” that opium reliably induces sleep because it has a “dormitive virtue.” Molière intended this to be a satirical play on the use of opaque scholastic concepts in medicine, and since then the phrase “dormitive virtue” has become a byword for explanatory failure. However, contemporary work on the metaphysics of grounding and dispositions appears to permit explanations with a strikingly similar structure. In this paper I explore competing verdicts on dormitive virtue explanation, using a model of explanation I call “Contextualist Pluralist Non-Realist Backing”, or CPN Backing. I show that CPN Backing illuminates the puzzle about dormitive virtue explanation, shows what is required for a resolution, and makes sense of conflicting responses to this case.

Keywords: Explanation, Dispositions, Dormitive Virtue

BACHELIERUS

*Mihi a docto doctore
Domandatur causam et rationem quare
Opium facit dormire.
A quoi respondeo,
Quia est in eo
Vertus dormitiva,
Cujus eat natura
Sensus assoupire.*

“I am asked by the learned doctor for the cause and reason that opium makes one sleep. To this I reply that there is a dormitive virtue in it, whose nature it is to make the senses drowsy.”

CHORUS

*Bene, bene, bene, bene respondere.
Dignus, dignus est intrare
In nostro docto corpore.*

"Very, very, well answered. The worthy [candidate] deserved to join our learned body."¹

¹ Latin quotes from Molière, Jean Baptiste (1926) Vol 8 pg 328. English translation given by Hutchison in Hutchison, Keith (1991) pg 245

1. Introduction

In a rambunctious scene in Molière’s 1673 comedy *The Imaginary Invalid* the performers pantomime a medical student’s qualifying examination. At a key comedic moment the doctors ask the student to explain why opium induces sleep, and the student replies that opium has a “dormitive virtue.” The doctors break into applause and admit the candidate to the medical profession.² Molière framed this scene as a satirical play on the use of opaque scholastic concepts in medicine, and since then the phrase “dormitive virtue” has become a byword for explanatory failure.

Opinions differ as to why the dormitive virtue explanation is so bad.³ As we will see, some cite its apparent circularity, others its mysteriousness, and others its lack of causal detail. From the early modern period to the present day, however, a majority of philosophers agree that the dormitive virtue explanation fails and that if a philosophical position permits explanations like this, then that is a *prima facie* count against the view. However, as I will discuss in Section 3, contemporary work on the metaphysics of grounding and dispositions appears to permit explanations in which dispositions explain patterns in events, with a structure strikingly similar to the dormitive virtue case. Furthermore, if we consider this case away from its early-modern comedic context we may find ourselves wondering what is so bad about this attempt at explanation. Does it not give us *something* useful in pointing to the opium rather than to the sleepers, or to their surroundings? Does it not at least tell us *where* to look for an explanation? Anyone who takes the pragmatic

² The “medical student” in this scene is the hypochondriac of the play’s title, making the pantomime examination even more absurd.

³ For ease of expression I will refer to the “dormitive virtue explanation” and “dormitive virtue case” as co-extensive, although though part of what is at issue is whether or not this case involves a genuine explanation. I will also take “virtue”, “power”, “faculty”, and “disposition” to be co-extensive.

aspects of explanation seriously is likely to find such considerations familiar and compelling. Viewed from these different perspectives – metaphysics on the one hand, and pragmatist philosophy of science on the other – the dormitive virtue case does not look so bad after all.

There are good historical reasons for conflicting responses to this case. According to some interpretations many prominent thinkers of Molière’s period defined themselves in opposition to the scholastic era, rejecting the apparatus of medieval metaphysics that included reified powers. Contemporary metaphysics, on the other hand, has embraced the neo-Aristotelian resources central to medieval thought.⁴ However, I am interested in focusing on this case independently of these issues about historical interpretation. Examined in isolation from its history the dormitive virtue explanation presents a puzzle: on the one hand it appears to be an obvious explanatory failure, while on the other it looks like a perfectly adequate explanation.

In this paper I will address this puzzle. My first goal is to articulate and motivate the puzzle, in making more precise the nature of dormitive virtue explanation, the considerations driving positive and negative verdicts on this case, and what is at stake in searching for a resolution. Then I sketch a view of explanation that illuminates the puzzle, shows what is required for a resolution, and makes sense of conflicting responses to this case. I call this approach Contextualist Pluralist Non-Realist Backing, or CPN Backing. Showing that this view offers useful resources for addressing the dormitive virtue puzzle will not constitute an argument for CPN Backing, but will illustrate some of its attractive features as a model of explanation. In particular, I will show that CPN Backing is unusual in taking connections between explanation and metaphysics seriously

⁴ For example, see Tahko, Tuomas, E. (ed.) (2011)

while also prioritizing contextual and pragmatic aspects of explanation, and that this combination offers a helpful approach to the dormitive virtue case. The end result will be an improved understanding of dormitive virtue explanation and of how to resolve the dormitive virtue puzzle, and an illustration of the advantageous features of CPN Backing as an approach to explanation.

2. Dormitive virtue explanation and its discontents

Those who raise concerns about dormitive virtue explanations tend to focus on this version:

DV: Opium reliably induces sleep because it has a dormitive virtue.

This can be generalized to other cases:

DV General: F reliably ϕ s because F has a ϕ -ing virtue.

There are other explanations of apparently similar structure that cite virtues. For example:

L: Laura fell asleep because she ingested opium, which has a dormitive virtue.

Alternatively:

LS: Laura fell asleep more quickly than Sarah because Laura ingested opium, which has a dormitive virtue, while Sarah did not.

However, most controversy about the dormitive virtue explanation focuses on DV and explanation with the structure DV General, rather than individual or contrastive cases like L and LS. This is perhaps because DV and DV General are comparatively less plausible as explanations, while L and LS are more acceptable. For example, Vetter holds that dispositions can play a central role in contrastive explanations like LS, while some causal theories of

explanation permit L as at least a partial causal explanation.⁵ And, although faithfulness to Molière's words is typically not prioritized in these discussions, DV roughly captures the explanation offered in the original play.

In Molière's time many authors were troubled by the prospect of DV and explanations of the form DV General. For example, Glanvill discussed the claim that fire burns in virtue of its heat and described it as "an empty dry return to the Question", and, "no better account than we might expect of a Rustick."⁶ Locke raised a similar worry about the explanatory pointlessness of faculties when he wrote, "For *faculty*, *ability*, and *power*, I think, are but different names of the same things: which ways of speaking, when put into more intelligible words, will, I think, amount to thus much: That digestion is performed by something that is able to digest, motion by something able to move, and understanding by something able to understand."⁷ Malebranche was concerned about a tendency he observed among philosophers to, on encountering some new effect, posit an entity responsible for that effect. As he put it, "Fire heats things - therefore there is something in fire that produces this effect, something different from the matter of which fire is composed. And because fire is capable of several different effects (such as disintegrating bodies, ... drying them, hardening them, softening them, enlarging them, ... and so on), they liberally bestow on fire as many faculties or real qualities as effects it is capable of producing."⁸ A number

⁵ See discussion in Vetter, Barbara (2015) pg 87-89. Causal accounts of explanation that permit L as at least partial explanation include those defended in Lewis, David (1986) and Skow, Bradford (2014). An interventionist approach might also admit L in so far as the opium functions as a difference-maker. See Woodward, James (2003)

⁶ Glanvill, Joseph (1665) pg 143. This section is discussed by Ott in Ott, Walter (2009) pg 11 ff.

⁷ Locke, John (1689) 2.21.20.

⁸ Malebranche, Nicolas translated by Olscamp, Paul J. (1997) pg 242. This section is discussed by Hutchison in Hutchison, Keith (1991)

of other authors from this time, including Leibniz and Newton, raised concerns about explanations of this form.⁹

Many contemporary authors have also raised worries about the prospect of dormitive virtue explanation. For example, when discussing the commitments of the simple realist, Thomasson argues, “Not only does the simple realist not need to appeal to explanatory power or the like to justify her acceptance of the relevant entities, she cannot do so. Any attempt to do so would yield only a dormitive virtue explanation...”¹⁰ When considering the explanatory role of symmetry considerations, French notes, “One could of course suggest that white dwarf stars have a disposition to behave in such a way under gravitational collapse but that sails awfully close to a ‘dormitive virtue’ scenario.”¹¹ While discussing evolutionary explanations that appeal to the notion of fitness, Sober argues that fitness cannot explain certain outcomes (even if it causes those outcomes) because this would amount to a dormitive virtue explanation.¹² In these cases we can see authors using the prospect of dormitive virtue explanation as a count against a view, such that if a philosophical strategy permits DV or DV General explanation, then that strategy must be abandoned. More directly engaging with the case, Strevens points out that his kairetic account of explanation does not permit dormitive-virtue-style explanations because they do not display sufficient causal detail, or “depth”, for explanation.¹³ McKittrick, when discussing the prospect of bare dispositions, unfavorably compares DV with an explanation that gives information about the causal mechanism through which opium induces sleep.¹⁴

⁹ See discussion in Hutchison, Keith (1991)

¹⁰ Thomasson, Amie (2015) pg 156

¹¹ French, Steven (2019) pg 26

¹² Sober, Elliott (1984) pg 77-8

¹³ Strevens, Michael (2008) pg 131-3

¹⁴ McKittrick, Jennifer (2003) pg 349

As we can see from these extracts, there are a number of distinct concerns about DV and DV General explanations.

An initial worry is that the dormitive virtue explanation displays insufficient “explanatory distance.”¹⁵ Canonically explanation is irreflexive, so whatever the relata of explanation are – propositions, facts, sentences – they must be distinct. On this line of thought the dormitive virtue case fails to meet this standard because the fact that “opium reliably induces sleep” is the same as the fact that “opium has a dormitive virtue”, in that the dormitive virtue is nothing beyond the pattern in events. This complaint about DV lies at the heart of many historical and contemporary concerns about it. For example, the idea that explanation by virtue or faculty is pointless, or as Glanvill put it, a “return to the question”, indicates that the problem with the attempt at explanation is its circularity.¹⁶ Furthermore, this worry about distance makes sense specifically of empiricist concerns about this case because a certain kind of empiricist can only countenance virtues as patterns in events, rather than as unobservable entities posited to explain such patterns.

Let us imagine that the proponent of the dormitive virtue explanation pushes back against this concern about irreflexivity. They argue that the explanation is not circular because the dormitive virtue is not merely a pattern in events but is instead a distinct entity, a virtue, that explains those events and is responsible for them. The circularity worry is straightforwardly avoided because the fact that opium has a dormitive virtue is distinct from the fact that opium reliably induces sleep. However, this leads us to the next complaint about the dormitive virtue explanation, which is

¹⁵ The author coins this phrase and discusses this concern about DV in Taylor, Elanor (2023)

¹⁶ Glanvill, Joseph (1665) pg 143.

that the entity it posits and the resulting explanation is *mysterious*. Following this line of thought, Goodman included dispositions on a list including “counterfactual assertions... angels, devils and classes” as entities that are “inacceptable without explanation.”¹⁷ In the early modern period the term “occult power” was used pejoratively to express the idea that such powers are unobservable, that their nature is inscrutable, and that there is no empirical basis for belief in their existence beyond the patterns in events they are posited to explain.¹⁸ If powers are mysterious, then not only are they metaphysically troubling, but the purported explanation they support also does not provide the understanding or illumination we might expect from explanation. These two objections work together as a dove-tailing package: either the dormitive virtue explanation is circular, or else it is worryingly mysterious.

A third set of worries about explanations of this kind are generated by concerns about causation. There are a number of different objections here, but I will group them together as causal problems, oriented around the idea that DV displays some deviant connection between the dormitive virtue, the explanation, and the causal information relevant to the explanandum.

One such worry is that virtues are causally, and hence explanatorily, excluded by their categorical bases. On this line of thought DV is not a genuine explanation because it does not give us information about the real explanatory action which takes place in the categorical base of the dormitive virtue.¹⁹ The dormitive virtue explanation is a placeholder for the causal-mechanical detail that explains the pattern in events, and renders talk of the dormitive virtue

¹⁷ Goodman, Nelson (1983) pg 33

¹⁸ See discussion in Ott, Walter (2009) Chapter 5

¹⁹ This line of thought is evident in Prior, Elizabeth W., Pargetter, Robert & Jackson, Frank (1982) pg 255

explanatorily redundant. However, we need not endorse such a strong exclusion principle to think that these explanations do not target the right level of causal detail. For example, as mentioned earlier, Strevens discusses DV and holds that explanations of this form lack the requisite causal detail to explain because they are pitched at too high a level of abstraction, rather than because they are excluded by an explanation given in categorical terms.²⁰ The idea that there is an appropriate level for causal explanation, whether of detail, of abstraction, or of scientific theory, has been taken up in conversation about levels of explanation across contemporary philosophy of science and metaphysics, including in Sections II and III of this volume.

Other causal considerations arise in the literature on dispositions. For instance, in response to the view that dispositions neither cause nor explain their instances, Sober & Shapiro argue that even if a disposition does not explain its instances it may still cause them, because they reject the background view linking explanation to causation and so can countenance a cause that does not explain.²¹ But all parties to the conversation agree that, regardless of what is going on causally, DV General explanation fails.

A final concern applies to DV but not necessarily to all explanations of the form DV General. This is the worry that the dormitive virtue is too specific, coarse, or non-fundamental to play a central role in explanation, though other powers may play such roles. Some historical commentators have attributed this concern to Newton, who permitted some powers to play

²⁰ Strevens, Michael (2008) pg 131-3

²¹ Shapiro, Larry, and Sober, Elliott (2007) pg 19. Lange also discusses this extract in Lange, Marc (2017) pg 425

fundamental explanatory roles, but not powers as specific as the dormitive virtue.²² This is an interesting worry because it hones in on something specifically wrong with the dormitive virtue case rather than something amiss with all DV General explanations. However, for this reason this is probably the most peripheral concern about the dormitive virtue case. Negative verdicts on the dormitive virtue case tend to be driven by more general, and generalizable, concerns about DV General explanation.

These four sets of objections may not exhaust the history of complaints about dormitive virtue explanation. Nor are they exclusive; for instance, a version of the causal exclusion worry can be motivated by considerations about explanatory distance. But overall, considerations about distance, mystery, causation, and specificity drive most of the historical and contemporary objections to DV and DV General explanation.

3. Contemporary dormitive virtue explanation

In Section 2 we saw the negative side: a range of commentators raising concerns about DV and DV General and arguing that if a view permits DV General explanation, then that is a count against the view. In this section we will see the positive side: contemporary work in metaphysics, particularly on grounding and dispositions, that appears to permit DV General explanation.

First, however, a note on pragmatism. Most pragmatists about explanation resist offering general accounts of explanation, beyond schematic ideas such as Van Fraassen's claim that explanations

²² For example, see discussion in Hutchison, Keith (1991)

offer answers to why-questions, or Achinstein's view that explaining is a certain kind of speech-act.²³ Pragmatists will often warn against asking whether an explanation is legitimate in general, holding that it is only within a particular context that such questions can be meaningfully addressed. Accordingly, a pragmatist may have no difficulty with the idea that a certain explanation is both good and bad, and will simply say that it is good in some contexts and bad in others. On this approach the mere fact that the dormitive virtue explanation appears to be both bad and good does not raise any challenge or puzzle.

Pragmatism therefore offers a straightforward solution to a puzzle of this form, in which an explanation appears to be both bad and good. However, part of what makes the dormitive virtue case interesting is that some of its bad features appear to preclude it from *ever* explaining, not just failing to explain in a particular context. For example, even committed pragmatists struggle to accommodate absolute circularity in explanation, and one of the primary concerns about the dormitive virtue is that it may be circular.²⁴ So, although embracing pragmatism will go some way towards resolving the dormitive virtue puzzle, it will not do so perfectly. Furthermore, an interesting aspect of this puzzle is that positive verdicts on DV General explanation come not only from pragmatist philosophy of science, but also from literatures that are not motivated by pragmatism and that take connections between explanation and metaphysics seriously, including work on grounding and the metaphysics of dispositions. As we will see, one important task in resolving the dormitive virtue puzzle is to clarify the metaphysics at work in this case.

Accordingly, I am interested in exploring responses to this puzzle that are not purely funded by

²³ In Achinstein, Peter (1983), Van Fraassen, Bas (1980). For a discussion of concerns about general theories of explanation, see Díez, José, Khalifa, Kareem & Leuridan, Bert (2013)

²⁴ For instance, even for Van Fraassen an answer to a why-question cannot be content of the question itself.

pragmatism about explanation, although, as we will see, one of the benefits of the approach I will eventually recommend is that it can accommodate some central pragmatist insights.

Let us now turn to contemporary views that appear to permit DV General explanations. One source is dispositional essentialism, the position that (at least) fundamental properties are essentially dispositional.²⁵ Dispositional essentialists hold that these fundamental dispositions are the basis of natural modality and explain the laws of nature.²⁶ On this approach the explanatory work we may traditionally expect to be performed by the laws of nature is performed instead by these essentially dispositional properties, which provide a metaphysical and explanatory foundation for modality. The dispositions have no further categorical basis, as they are metaphysically and explanatorily fundamental. As Bird puts it in his preferred language of “potencies”, “... the existence of regularities in nature, the truth of counterfactuals, and the possibility of explanation are explained by potencies.”²⁷

Consider a concrete example. Bird discusses Reichenbach’s famous comparison between the accidental fact that there is no ten-ton sphere of gold and the non-accidental fact that there is no ten-ton sphere of uranium. According to Bird, the latter is entailed and explained by uranium’s dispositions to chain-react and explode before it reaches that weight.²⁸ Here we can see an explanation of the structure of DV General:

²⁵ For example see Bird, Alexander (2007) and Ellis, Brian (2001) The “at least” is in parentheses because dispositional essentialists differ over whether all properties are essentially dispositional (monism, Bird’s position) or only certain properties.

²⁶ I say “natural modality”, but for Bird the laws of nature are metaphysically necessary so acknowledges no distinction between natural and metaphysical modality.

²⁷ Bird, Alexander (2007) pg 200

²⁸ Bird, Alexander (2005) pg 357. Some have argued that permitting DV General explanation is a problem for dispositional essentialism. For example, Kimpton-Nye argues that a canonical version of dispositional essentialism permits DV General explanation, and defends an alternative version that does not, in Kimpton-Nye, Samuel (2021)

DV General: F reliably ϕ s because F has a ϕ -ing virtue.

Uranium: Uranium chain-reacts and explodes before it reaches a ten-ton weight because it has a disposition to chain-react and explode before it reaches that weight.

Some regard these dispositional explanations as causal explanations. However, others have framed the explanatory relationship between fundamental dispositions and the patterns in events that they explain in terms of grounding.²⁹ This leads to another contemporary source of DV General explanation. Proponents of grounding take grounding to be either a form of explanation, in its *unionist* variety, or a relationship between facts that supports, or *backs* explanation, in its *separatist* variety.³⁰ On either version wherever we have grounding, we have explanation, and that connection between grounding and explanation is one of its characteristic features. To stick with dispositional essentialism for the moment, most accounts of grounding can accommodate grounding between fundamental dispositions and patterns in events or laws of nature. Furthermore, because grounding explanations need not take us to the most fundamental explanatory basis for the explanandum in order to explain, we need not endorse dispositional essentialism to permit patterns in events to be grounded and hence explained by dispositions. Dispositions may have categorical bases and still feature in grounding explanations, and some grounding theorists explicitly discuss cases in which grounding occurs between facts about dispositions and facts about patterns in events. For example, Rosen discusses the idea that the fact that a ball is blue may be grounded in, and hence explained by, the ball's dispositions to

²⁹ For example, Jaag frames dispositional essentialism in terms of grounding in Jaag, Siegfried (2014). Note that the grounding literature was in a nascent stage at the time when many dispositional essentialists were developing their views.

³⁰ This way of describing the distinction comes from Raven, Michael (2015)

reflect light in certain ways such that it appears blue.³¹ Grounding explanations are notable for being extremely fine-grained such that the relata of a grounding explanation can be very close, as is evident in examples such as the grounding and hence explanation of the fact that the paint is red by the fact that the paint is scarlet, or the grounding and hence explanation of the fact that a person is a bachelor by the fact that they are an unmarried man. Accordingly, the apparently very close relationship between the dormitive virtue and opium's effects need be no barrier to a grounding explanation in this case. Furthermore, grounding explanations are non-causal, so the concern that virtues do not cause their manifestations does not apply here.³²

Not all grounding theorists and not all of those who endorse a theory of dispositions endorse DV General explanations. However, many do, and in light of the worries raised in Section 2 these cases generate a puzzle. It seems obvious that DV and DV General explanations are problematic. But theories of grounding and dispositional essentialism provide good precedent for taking DV General explanation to be legitimate. Accordingly, the dormitive virtue case pulls us in two directions, and raises troubling questions. If we take the negative considerations against DV General explanations seriously, should we reject grounding and dispositional essentialism? Alternatively, if we take grounding and dispositional essentialism seriously, should we reject Molière's sarcastic verdict on this case?

This puzzle is not just an interesting puzzle about a single case, but asks us more generally to consider *how we think about explanation*. What role should intuitive responses to particular cases play

³¹ Rosen, Gideon (2010) pg 126

³²At least on a standard understanding of "causation". Wilson argues that grounding is a distinctively metaphysical form of causation in Wilson, Alastair (2018). On this approach DV-General explanations may be legitimate, but they do not function as ordinary causal explanations.

when building a theory of explanation? Does it make sense to develop a theory of explanation and apply it top-down to cases, regardless of the counterintuitive implications for some of those cases? What is the appropriate level of back-and-forth between a theory of explanation and explanatory practice? To what extent should we take pragmatics seriously? How should connections between explanation and metaphysics play into decisions about the viability or otherwise of explanations?

In what follows I will recommend an approach to the dormitive virtue case that is illuminating and offers sensible answers to at least some of these questions.

4. A view of explanation: CPN Backing

Contextualist Pluralist Non-Realist Backing (hereafter *CPN Backing*) is a backing model of explanation.³³

The central insight of backing models is that explanations are supported by underlying *backing relations* (or *backers*), and that we explain by reporting on these relations. On this approach explanation itself is a relation between propositions (or sentences), divided into two parts, an explanans and explanandum. For the explanation to succeed, the explanans must give information about something standing in a backing relation to whatever is described in the explanandum. Take a simple causal explanation as an example, in which I explain a car crash by giving information about the brake failure that caused it:

The car crashed because the brakes failed.

³³ This section discusses a view of explanation developed by the author in Taylor, Elanor (2018), (2020), and (2023). For articulation and defence of backing models see Audi, Paul (2015), Jaegwon Kim in a range of venues including Kim, Jaegwon (2005), Ruben, David-Hillel (1990), Jonathan Schaffer in a range of venues including Schaffer, Jonathan (2015), and Wilhelm, Isaac (2021)

We can divide this into two parts:

Explanandum: The car crashed.

Explanans: The brakes failed.

The explanandum gives information about the event that needs explained, and the explanans gives information about a cause of the event described in the explanandum. The explanation succeeds, at least in part, because the explanation is supported by and gives information about the backing relation of causation which obtains between the event described in the explanans and the event described in the explanandum.

Backing models vary on a range of different aspects, some of which will be significant for this discussion. These include the number, character, and unification of the backers, the extent to which the model accommodates contextual and pragmatic aspects of explanation, whether explanation reports on the relata of the backing relation or the relation itself, and the relationship between the structural and formal features of backers and the structural and formal features of explanation.

CPN Backing builds on this rough sketch of a backing model, but differs from extant backing models on a number of dimensions. I will sketch the central features of CPN Backing as a series of principles:

1. Explanation is a relation between two (sets of) propositions, the explanans and explanandum.
2. Explanations are backed by dependence relations that are not themselves explanations, but that can support explanation.

3. The explanans of a successful explanation gives information about whatever what is described in the explanandum depends on.
4. There are many different backers including causation, grounding, mereological relations, conceptual relations, mathematical relations, logical relations, and motivational relations.
5. There is some mirroring between the structural and formal features of backers and of explanation.
6. Context determines which backers, and hence which explanations, are explanatorily appropriate. Features of context include the needs of the audience for the explanation, the activity at hand, and the background information available to those involved.
7. Some backers, such as causation and grounding, are mind-independent, which means that the relation in general does not rely for its existence on human thought. Other backers, such as conceptual dependence, are mind-dependent, in that the relation in general does rely for its existence on human thought.

A primary, and controversial, difference between CPN Backing and more traditional backing models is the wider range of backers. Many backing models are pluralist in that they permit more than one backer, but typically these are restricted to causation and grounding. CPN Backing permits a variety of backers, including causation and grounding as well as conceptual relations, motivational relations, and mathematical relations. On traditional backing models the backers are highly unified, and for some this unification is reflected in the fact that the structure of backing is captured by the formalism of structural equation models.³⁴ CPN-Backing does not posit a unified formalism for backing, and overall I endorse looser connections between

³⁴ As in Schaffer, Jonathan (2015), Wilhelm, Isaac (2021), and Wilson, Alastair (2018)

explanation and backers than are posited by extant models. A further distinctive feature of CPN Backing pertaining to the unification or otherwise of backers is the non-realism. Backing models tend to be realist, in that backing relations are all mind-independent, worldly forms of metaphysical determination. This makes sense of the standard restriction to causation and grounding, as these are canonical forms of metaphysical determination. CPN Backing permits these worldly, metaphysical backers but also permits backers that are mind-dependent, including conceptual dependence, motivational dependence, logical relations on a conventionalist view of logic, and so on.³⁵ The non-realist aspect of CPN Backing is less significant for the dormitive virtue puzzle than some other features. but overall, this view permits a wider range of backers than is standard in backing models.

A further distinctive aspect of CPN Backing is the contextualism. Traditionally backing theorists tend to endorse a robustly metaphysical approach to explanation, and leave aside issues about context and the pragmatics of explanation. This is not to say that backing theorists reject the idea that there *are* pragmatic and contextual aspects to explanation, but rather that they do not build these into their model of explanation. CPN Backing, on the other hand, places these issues at the heart of the view. A variety of different dependence relations may serve as backers, and context will determine which it is reasonable to cite in an explanation. For example, a metaphysics seminar room will be a more appropriate place to offer an explanation backed by grounding than almost any other context. Alternatively, the kind of information we desire from an explanation will be determined by factors such as whether we want to explain an event from an engineering perspective, or to forensically assign blame, and so on.

³⁵ For further discussion of this aspect see Taylor, Elanor (2020)

I will leave a few important issues aside here. These include the formal features of backers. As stated above, on this model the formal features of backers reflect features of explanation and vice-versa, which include irreflexivity, asymmetry, and hyperintensionality. However, unlike traditional backing theorists I take this mirroring between explanation and backing to obtain only at the level of instances that support specific explanations. On this approach, for instance, the combination of explanation's irreflexivity and causation backing explanations does not preclude the possibility of reflexive causation, so long as those instances of causation do not back explanations. I will also leave aside questions about the nature and extent of the unification of backers, beyond noting that I reject the view that the unification of backers is reflected in their subsumption under the formalism of structural equation models.

5. Taking on the dormitive virtue puzzle

The dormitive virtue puzzle is generated by competing positive and negative considerations about dormitive virtue explanation, and other explanations of the form DV General. On the negative side these explanations seem bad for a number of reasons, surveyed in Section 2. On the positive side, from a pragmatic perspective DV General explanations seem to give us at least some useful explanatory information, and, as surveyed in Section 3, well-motivated views of grounding and dispositions appear to permit explanations with this structure.

CPN Backing does not offer a definitive solution to this puzzle in that it does not provide a verdict on whether the dormitive virtue explanation is good or bad. This is because, as we will see, the dormitive virtue puzzle is generated by substantive questions about metaphysics and about explanatory context which an account of explanation alone cannot, and ought not, settle.

But CPN Backing offers a useful diagnostic approach in that it clarifies what questions must be addressed in order to solve the puzzle, and accommodates and contextualizes a range of positive and negative responses to the case.

CPN-Backing provides two criteria for explanation that are particularly salient to the dormitive virtue puzzle. The first is that an explanation must report on an instance of *dependence* - the backer. The second is that the dependence reported upon must be *contextually appropriate*. The first takes us to questions about the metaphysics operative in each case of explanation. The second takes us to considerations about the pragmatics of explanation.

Let us apply these criteria to the original case:

DV: Opium reliably induces sleep because it has a dormitive virtue.

We must ask whether this explanation reports on an instance of dependence, and if so, whether that form of dependence is contextually salient. The first question cannot be settled by an account of explanation alone, because it is a substantive metaphysical issue. For example, if there is a power in which the pattern in opium's effects is grounded and DV reports on this grounding, then the first criterion is met. If there is no such power, and the dormitive virtue simply is the pattern in opium's effects, then the appropriate dependence does not obtain and the attempt at explanation fails. However, an instance of grounding is not the only way in which the dependence criterion can be met. An instance of causal dependence, such that the pattern is caused by the dormitive virtue, or an instance of conceptual dependence, such that there is a conceptual relationship like analysis or explication between the concept "dormitive virtue" and

“reliably inducing sleep”, can also meet the dependence requirement.³⁶ As before whether these dependence relations obtain is a matter of background metaphysics.³⁷ If there is no dependence, then there is no explanation in this case.

The second criterion becomes relevant once we have established that at least one dependence relation is cited by the explanation. Then we must turn to the context of the request for explanation and ask whether the dependence cited is appropriate to that context. This contextual aspect provides insight into how, even if the dependence criterion is met, the dormitive virtue puzzle may still arise. Putting issues about the pantomime aspect of the scene in Molière’s play aside, DV arises in a *clinical* context. Typically, in clinical contexts the explanations we seek of regularities are causal explanations that give information about the mechanism through which the effect is reliably obtained. McKitrick reflects on this fact when she says, “More ought to be said about why opium causes sleep, and in fact, we can say more: opium contains alkaloids such as morphine which, being structurally similar to the body’s naturally occurring peptides, bind to opiate receptors in the brain, causing sleep.”³⁸ Causal-mechanical explanations are not the only explanations appropriate to clinical contexts, but they are paradigm clinical explanations, not least because they facilitate causal-mechanical interventions. Accordingly, even if DV meets the dependence criterion, it may for good reason not meet the criterion of contextual appropriateness.

³⁶ As mentioned in the exposition of CPN Backing in Section 4, permitting backers of this non-realist, conceptual sort is a more controversial aspect of CPN Backing, and it would be rejected by more traditional realist backing theorists. See discussion in Taylor, Elanor (2020). However, those who endorse CPN Backing need not endorse the view that there are such conceptual explanations, or that DV is one.

³⁷ For ease of expression I have characterized the work of identifying dependence relations as “metaphysics”, but this is not perfectly accurate given that CPN Backing permits non-realist backing.

³⁸ McKitrick, Jennifer (2003) pg 349

However, part of the puzzle was dealing with *contrasting* intuitions about this case. CPN Backing tells us that if we are looking for a clinical explanation, DV might meet the dependence criterion while still failing for contextual reasons. But then what do we do with the competing judgment that DV is ok after all, and that commitment to grounding and dispositional essentialism commits us to DV General explanation? Here the contextual aspect of CPN Backing can again play a useful role. The positive verdicts on DV and DV General explanations came from metaphysics, a distinctive explanatory context in which explanations in terms of ground and power are regarded not only as legitimate, but also as deeper and more complete than practical alternatives such as causal-mechanical explanations.³⁹ Even if DV does report on dependence, we can accommodate both negative and positive responses to the case by acknowledging that the dependence it reports on may not be explanatorily appropriate in its original clinical context (a source of negative verdicts), even if it is appropriate in the metaphysics seminar room (a source of positive verdicts).

Paying attention to these contextual factors also provides some insight into the comedic aspect of Molière's scene. There is a long history in comedy of getting laugh moments out of strictly adequate but contextually inappropriate explanations. For example, consider this explanation given in an episode of 1980's sitcom *Police Squad*:

(Detective Frank Drebin and forensic scientist Ted Olsen examine a rock that was thrown through a window.)

Drebin: Where'd it come from?

³⁹ Consider Fine's claim that grounding is the "ultimate form of explanation" in Fine, Kit (2001) pg 16, or the dispositional essentialist idea that dispositions are metaphysically and explanatorily fundamental.

Olsen: It's very interesting. I have a theory about that. As you know, Frank, billions of years ago our Earth was a molten mass. But for some reason, not understood by scientists, the Earth cooled, forming a crust, a hard igneous shell. What we scientists call 'rock'.⁴⁰

This is an excellent explanation in a way but pragmatically disastrous, hence its comedic impact. And something similar may be true of DV, even if it meets the dependence criterion.

Let us now consider how to address the dormitive virtue puzzle from a particular perspective.

Say that I am a dispositional essentialist and I permit facts about patterns in events to be grounded in and hence explained by facts about dispositions, but I also have reservations about Molière's original case. How should I reconcile these competing views? I have a range of options. The first is to claim that Molière and others were wrong about DV, and that it is not a bad explanation after all. On this approach I reject the long-standing negative verdict as misguided, rather than trying to understand why so many people endorsed it and laughed along with Molière. Another option is to argue that despite apparent similarities the structure of Molière's explanation does not mirror the structure of the explanation countenanced by the dispositional essentialist. For example, I could follow some early modern commentators in arguing that only a few fundamental powers can play this explanatory role, and so that nothing at the coarse-grained level of the dormitive virtue could do this work. However, I am then left with further worries about explanations with DV General structure that do cite fundamental powers, which are permitted by my view. A third, and better, option is to make use of the contextualist and pluralist resources of CPN Backing. I may, as described above, judge that Molière's explanation was a fine explanation metaphysically-speaking because it reports on a dependence relation, but that it

⁴⁰ *Police Squad* Season 1 Episode 5, IMDB: <https://www.imdb.com/title/tt0676271/>

was not appropriate for a clinical context. CPN Backing provides resources to justify laughing at Molière's medical student for giving the wrong kind of explanation rather than for failing to give an explanation at all, which seems like a good option for the dispositional essentialist who still wants to enjoy the fun.

Let us now return to the concerns identified in Section 2 about distance, mystery, and causation. The worry about distance is straightforwardly addressed by the dependence criterion for explanation. If DV reports on a dependence relation, then according to CPN Backing there is enough distance for explanation. The other concerns, about mystery and causation, are not so straightforwardly addressed by CPN Backing, which is appropriate because they are generated by substantive questions about metaphysics. CPN Backing tells us about how these metaphysical issues factor into the legitimacy of the explanation, but does not resolve the metaphysical issues themselves. Consider the worry that the dormitive virtue is mysterious. This points to broad questions about scientific realism in that it requires us to consider when, if ever, it makes sense to posit unobservable entities in order to explain patterns in events. The third set of concerns about causation will also depend on the background metaphysics, so CPN Backing does not offer a straightforward solution but does issue some desiderata for an explanation. The explanation must cite a dependence relation, so if causal exclusion precludes this then the attempt at explanation will fail. Furthermore, on CPN Backing it does not follow from the fact that some causes can back explanations that all causes do, so this approach can make space for views such as the idea discussed by Sober and Shapiro that there may be a cause in this case without an explanation.⁴¹

⁴¹ Shapiro, Larry, and Sober, Elliott (2007) pg 19

Overall, CPN Backing tells us what is required from the metaphysics for the explanation to succeed, without inappropriately generating verdicts on the metaphysics.

6. Reflections and implications

The dormitive virtue puzzle is that there are good, well-motivated reasons for thinking that dormitive virtue explanation is good, and that there are good, well-motivated reasons for thinking that that dormitive virtue explanation is bad. I have discussed some considerations in favour of each side and shown that a particular approach to explanation, CPN Backing, can help us to steer through this puzzle. CPN Backing offers a straightforward set of criteria for resolving this puzzle, and ways to accommodate lingering positive and negative intuitions about the case.

Applying CPN Backing to the case of the dormitive virtue reveals a variety of different responses to the puzzle generated by this case. However, CPN Backing does not tell us which view to adopt. Does this mean that CPN Backing has failed to resolve the puzzle? In short, no. Of course, one can take any account of explanation and impose it top-down onto the dormitive virtue case. For instance, I could adopt a strictly causal view of explanation and resolve the puzzle by deciding whether the dormitive virtue explanation meets the criteria given in my account, ignoring further considerations about the intuitive pull of one consideration over another. However, although this is a pleasingly simple way to proceed and generates a straightforward verdict, this kind of approach risks over-simplifying this complex, historic case. The dormitive virtue explanation is rich in metaphysical and contextual detail, and requires an approach that takes both seriously. CPN Backing displays the attention to context characteristic of pragmatism about explanation, but without the anti-realism also characteristic of pragmatism about

explanation, which denies robust, systematic connections between explanation and metaphysics. By combining the idea that explanation is often importantly tied to metaphysics with attention to the contextual aspect of explanation, CPN Backing offers resources to help us to take metaphysics and pragmatics equally seriously when forming judgments about this case. In doing so, CPN Backing offers a range of resources for not only arriving at a verdict about the case, but also for dealing with residual responses to and intuitions about dormitive virtue explanation.

We began with the puzzle that dormitive virtue explanation seems laughably bad, but also appears to be permitted by contemporary theories of grounding and dispositions. Resolving this puzzle required us to examine connections between explanation and metaphysics, and explanatory context. CPN Backing is an approach to explanation that takes both of these aspects seriously, and shows that the dormitive virtue case is not so puzzling after all.⁴²

⁴² With thanks to Michael Della Rocca, Katie Robertson, Alastair Wilson, and two anonymous referees for helpful comments. Particular thanks to my mother, Valerie Kaye, for her patience as I wrote this chapter in her apartment during a lengthy pandemic quarantine.

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