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How to Activate a Power

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According to most views of dispositions or powers, they have “triggers” or activation conditions. Fragile things break *when they are struck*; explosive things explode *when ignited*. The notion of an activation event, or “trigger,” is central to the notion of a disposition. Dispositions are defined not only by their manifestations, but also by their triggers. Not everyone who grumbles and complains counts as irritable—just those who do so with little inducement. Not everything that can be broken counts as fragile—just things that can be broken with relatively little force. The idea that triggers are part of the identity conditions of powers is evident in conditional analyses of powers, and even in the claim that certain conditionals are typically true of things with certain powers. The antecedent of the conditional corresponds to a trigger of that power: “If it’s struck, it will break” is true of a fragile thing, and “being struck” is the trigger.

In this chapter, I explore the nature of activation events and their relation to the powers they activate. In particular, I will consider what triggers would look like if all properties were powers, as the dispositional monist or pandispositionalist tells us they are. While many have expressed worries about *manifestations* involving instantiations of only dispositional properties, it is also worth noting that, on a pandispositionalist scenario, the activation event must be equally dispositional. If all properties are powers, it seems that a triggering event must be an acquisition of a power. But how does something acquiring a power activate another power to produce its manifestation? I suggest and evaluate possible answers. I will argue that, as with the case of manifestations, a vicious regress threatens the pandispositionalist picture of power activation. I go on to consider several possible pandispositionalist responses.

1. Triggers

The kind of thing I’m talking about goes by various names, such as “trigger,” “stimulus,” “circumstances of manifestation,” “activation conditions,” and “activation event.” I suspect that any distinction one might draw between the stimulus and the background conditions is a matter of pragmatics. What counts as the

stimulus as opposed to the background depends on what's salient to an audience in a context. In some contexts, a spark is a trigger for flammability. In other contexts, the availability of oxygen might be. Perhaps it's best to think of the total set of circumstances necessary for the activation of a power as the "circumstances of manifestation" or "activation conditions," and the "trigger" or "stimulus" as a salient part of those conditions singled out for discussion. However, for simplicity, I'm going to use the expression "trigger" indiscriminately as a name for any part or whole of the circumstances of manifestation, and "activate" as a verb describing what a trigger does. In short, a trigger activates a power.

You might say triggering a power *produces* its manifestation. So, if one wanted to analyze the relation between a power and its manifestation, one might do well to offer an analysis of production. But seeing as all parties to the debates that I am considering agree that powers produce their manifestations, I do not think that the nature of production is central to this discussion, and I will not attempt to analyze it here. My concern in this chapter is not so much the relation between a power and its manifestation, but rather the relation between a trigger and the power it activates. Since the existence of the power typically pre-dates its trigger, I do not think the relation between these two is one of production.

What kind of thing is a trigger? Examples such as "dropping a glass" or "striking a match" suggest that they are events. When a power is activated, a certain event occurs which activates that power. This event is what I'm calling the power's "trigger." When one says that a power has a trigger, one usually means that a certain type of event tends to activate that kind of power. I am not assuming any particular account of events. Thinking of events as property exemplifications¹ is helpful, but not essential, to what I have to say about triggers. I am merely assuming that the occurrence of an event somehow involves the instantiation of some property. I'll start with the assumption that when a trigger occurs, a new property is acquired, but also consider the possibility that merely having a property may be sufficient to activate a power.

Do powers necessarily have triggers? One might think that it's part of the concept of a power that it has a trigger. According to Andreas Hüttemann, "A dispositional property is a property that, if instantiated by an object, is manifest under specific conditions only."² This suggests that a dispositional property must have a trigger. However, he goes on to say, "A categorical property by contrast is a property that, if instantiated by an object, is manifest under all conditions. So, according to this distinction categorical properties are limiting cases of dispositional properties."³ This suggests that categorical properties are powers that are activated by anything and everything. But one could equally say that such pow-

1. Kim, Jaegwon (1976) "Events as Property Exemplifications," in M. Brand and D. Walton, eds., *Action Theory*, Dordrecht: Reidel, pp. 159-177.

2. Hüttemann, Andreas (2009) "Dispositions in Physics," in Gregor Damschen, Robert Schnepf, and Karsten R. Stuber, eds., *Debating Dispositions: Issues in Metaphysics, Epistemology and Philosophy of Mind*, Berlin: Walter de Gruyter, p. 3.

3. Hüttemann (2009), p. 3.

ers do not need to be activated at all. If a power is constantly manifesting, there is no need for a trigger to activate that power. So, it seems reasonable to think of constantly manifesting powers as “trigger-less” powers. Notice, however, that to say that a power is constantly manifesting is not to say that it is constantly possessed, nor that the power is essential to objects that have it. Rather, it is just to say that an object manifests that power whenever it has that power. So an object could gain or lose a constantly manifesting power.

Another possible trigger-less power is a spontaneously manifesting power. One might say that uranium has a disposition to decay, but no event activates that power; it just happens spontaneously. But even if there are powers that have no triggers, there may be some that do. These are the ones I’m going to focus on. But perhaps, in the end, the pandispositionalist will need powers without triggers.⁴

2. Triggers for the Pandispositionalist (take one)

The idea that all properties are powers has received a lot of recent attention.⁵ A noted implication of pandispositionalism is that the manifestations of powers consist of acquisitions of further powers. Some have regarded this implication as problematic, leading to some sort of vicious regress.⁶ Similar worries apply to triggers as well. If powers *producing* nothing but powers is problematic, one would expect that powers *being activated by* nothing but powers to be problematic, too. Consider the following implications:

- T1. A power’s trigger is an event.
- T2. Events essentially involve something acquiring a property.
- T3. Therefore, a power’s trigger essentially involves something acquiring a property.
- T4. According to pandispositionalism, all properties are powers.
- T5. Therefore, according to pandispositionalism, a power’s trigger essentially involves something acquiring a power.

4. Stephen Mumford and Rani L. Anjum (2011) *Getting Causes from Powers*, and Barbara Vetter “Dispositions without Conditionals” (forthcoming) suggest that dispositions do not have triggers. Though they have independent motivations, perhaps this chapter will give them further reason to think that dispositions are not triggered by events.

5. For example, see Bird, Alexander (2007) *Nature’s Metaphysics*, Oxford: Oxford Univ. Press.

6. For regress arguments against pandispositionalism, see Armstrong, David (1997) *A World of States of Affairs*, Cambridge: Cambridge Univ. Press; Swinburne, Richard (1980) “Properties, causation, and projectibility: Reply to Shoemaker,” in L. J. Cohen and M. Hesse, eds., *Applications of Inductive Logic*, Oxford: Oxford Univ. Press, pp. 313-20. For replies, see Molnar, George (2003) *Powers: A Study in Metaphysics*, Stephen Mumford, ed. Oxford: Oxford Univ. Press; Bird, Alexander (2007) “The Regress of Pure Powers?” *The Philosophical Quarterly* 57, pp. 513-34; Mumford, Stephen (2009) “Passing Powers Around,” *The Monist* 92, pp. 94-111; and McKittrick, Jennifer (2010) “Manifestations as Effects,” in Anna Marmodoro, ed., *The Metaphysics of Powers: Their Grounding and their Manifestations*, New York: Routledge, pp. 73-83.

So, a power being activated, resulting in its manifestation, is, on this view, a matter of something acquiring a power, thereby activating the first power to make something acquire yet another power. Putting things this way might already strike those without pandispositionalist sympathies as unattractive. But I think there are deeper worries.

Let me introduce some terminology in order to try to avoid confusion. I'll call the power to be activated the "target power" and the manifestation of the target power the "target manifestation." I'll call the power the acquisition of which activates the target power the "triggering power." So, the view in question is that the target power is activated by something acquiring a triggering power, resulting in the target manifestation. If "power A" is the triggering power, and "power B" is the target power, power B is triggered by something acquiring power A, resulting in the manifestation of B, or the target manifestation.

Let me try to further clarify the picture of power activation that I think is emerging. Suppose the target power is the flammability of some gasoline. One trigger for this power is striking a match close to the gasoline. If that event is a matter of something acquiring a power, perhaps the match acquires a power when it activates the flammability of the gasoline, resulting in a fire. But what power does the match acquire? If the gasoline's flammability is "power B" in this case, what is "power A"?

Perhaps the triggering power is the flammability of the match? Note that the match and the gasoline are both flammable. They have the same type of power but different tokens. The suggestion is that the gasoline's token flammability is the target power and the match's flammability is the triggering power. Casting some doubt on this suggestion is the fact that the match's flammability is not a newly acquired power, but one that the match had prior to the occurrence of the trigger.

Another possibility is that the triggering power is the match's power to ignite gasoline. But even if we want to allow for such powers, this also seems like a power that the match already had; not a new power, just a newly activated power. Perhaps it would help to make a distinction between having a power A and having a power to acquire power A. I suppose one could say that the match did not, strictly speaking, have the power to ignite the gasoline prior to being struck, but that it had the power to acquire the power to ignite the gasoline. Now "the power to ignite the gasoline" is a newly acquired power, and can perhaps play the role of triggering power.

Note that whether a property is considered (a) a triggering power, (b) a target power, or (c) a power of the target manifestation, is a relative matter. "The power to ignite gasoline" is: (a) a triggering power, relative to the flammability of the gasoline; (b) a target power, relative to the power of the striking surface to light matches; and (c) a power of the target manifestation, relative to the match's power to acquire the power to ignite gasoline. To consider a different example, "being magnetic" could be (a) a triggering power, relative to the dispositions of things that are attracted to magnets, (b) a target power of magnetic things that can be activated by the proximity of metal objects, and (c) a manifestation of magnetizability – the disposition to become magnetic.

So, according to the suggestion under consideration, the match starts off with flammability (or perhaps the power to acquire the power to ignite the gasoline) and then the match is struck, thereby acquiring the power to ignite the gasoline. The acquisition of this power is the trigger which activates the target power (the gasoline's flammability) resulting in the target manifestation (the gasoline burning). This strikes me as a *prima facie* plausible account of power activation for the pandispositionalist.

However, I think trouble arises for the pandispositionalist when one asks: Is it possible for something to acquire a triggering power without manifesting it? Is it possible for the match to possess the power to ignite the gasoline without activating the gasoline's flammability and starting a fire? If this power is acquired merely by the match being struck, it seems that it can be possessed without manifesting. A match can burn without igniting some gasoline, for all sorts of reasons. *Perhaps* if the power to ignite the gasoline is acquired only in ideal conditions—that is, conditions ideal for igniting gasoline—the power cannot fail to manifest. But I am not sure that we want to say that when a trigger occurs, something acquires a sure-fire power to activate another power, and that the match's power cannot fail to activate the gasoline's flammability, resulting in combustion. Sometimes a trigger occurs, but something such as a gust of wind interferes with the target power being activated. Perhaps we could say that the struck match is just part of a potential circumstance of manifestation, and we need all the other factors to come together to produce the target manifestation. However, given a seemingly infinite number of possible defeaters, it does not look like there is any set of circumstances that will guarantee the occurrence of a manifestation.

So, it looks like it is more plausible to say that the triggering power might be latent, or dormant. (The distinction between an active and dormant power is simply this: an *active* power is currently manifesting, whereas a *dormant* power is not currently exhibiting its manifestation, though it could possibly exhibit its manifestation at some other time. For example, while the switch is off, the power of the light bulb to illuminate is dormant, not manifesting; when the switch is turned on, the bulb lights up, its power to illuminate is active and manifest.) If a trigger is a matter of something acquiring a power to activate a target power, even when the triggering power is acquired, it might be dormant. So even after the match acquires the power to ignite gasoline, it could fail to light the gasoline on fire. This suggests that, if A is the triggering power and B is the target power, merely acquiring power A is not sufficient for activating power B: Power A must be manifest.

As for igniting the gasoline, we might cite additional conditions such as the air being sufficiently oxygenated, the gasoline being nearby and accessible, lack of strong winds or rainstorms, etc. But recall that, on the view under consideration, every feature of the activation conditions is a matter of something acquiring a power. Perhaps the air being sufficiently oxygenated can be construed as the possession of a power, but I am not sure how to think of the proximity of the gasoline, or the absence of wind and rain, as the possession of powers.

3. The Regress

The intuition that some properties do not seem like powers is nothing new. What is more problematic is that the triggering power must not only be acquired, it must be manifest. It may be puzzling to think that acquiring one power can activate another power to manifest. It is utterly mysterious how the acquisition of a latent power could do the job. So, the triggering power must itself be manifest. Now, if the triggering power must be activated in order to manifest and activate the target power, there is a regress in the making. The trigger of the triggering power is itself an event. According to the view under consideration, this event is itself a matter of something acquiring a power. By the same reasoning, in order for this power to activate the triggering power, it must itself be activated. This regress can be employed in a *reductio* against pan-dispositionalism as follows:

- R1. Suppose that, in order for a power to be activated, something must acquire a triggering power.
- R2. Suppose that, in order for a triggering power to activate a target power, the triggering power must be activated.
- R3. It follows that something must acquire another triggering power in order to activate the first triggering power.
- R4. Furthermore, in order for this second triggering power to be activated, something must acquire a third triggering power, and so on.
- R5. Consequently, in order for a power to be activated, infinitely many triggering powers must be acquired and activated.
- R6. That is absurd.
- R7. Therefore, our suppositions must be rejected.

It follows from the suppositions of the argument (R1 and R2) that, for any power B, in order for B to be activated, some power A must be activated. Plug that principle in to power A's activation, and the regress begins. Consider the sequence of events that must occur in order to activate the gasoline's flammability. Suppose striking a match is the trigger. The striking occurs at t_1 , and the gasoline catches on fire at t_n . On the view under consideration, in order to activate the gasoline's flammability, the striking must involve something acquiring a power. Perhaps the match acquires the power to ignite the gasoline at t_1 . In order for that power to activate the gasoline's flammability, it cannot be latent—it must itself be activated. The activation of the match's power to ignite the gasoline is itself an event, which must occur after the triggering power is acquired at t_1 . So the triggering power is itself activated at t_2 , say. On the view under consideration, this second trigger must also be a matter of something acquiring a power. I do not know what object acquires what power in this scenario, but in any case, the problem is that it seems like this power must also be activated. Therefore, there must be a trigger which occurs at some t_3 , and this trigger is itself the acquisition of a power, which itself must be activated, necessitating another trigger, and so on.

4. Possible Replies

An initial reaction one may have to this regress is that the pandispositionalist shares it with anyone who thinks that all causes have causes. If A causes B, and A is itself an effect, then A must have a cause as well, and that cause must have a cause, and so on. While one may wonder about the possibility of a chain of causes and effects stretching infinitely back into the past, this type of regress does not seem especially vicious. But even if it were, it would not put the pandispositionalist in “any worse position than anyone else who believes in a universal causal principle.

This response would be fair if the regress I was worried about was that something having a power is itself the manifestation of an earlier power. So, if power B were the manifestation of power A, and power A were itself a manifestation of an earlier power, etc., there would be a chain of manifestations and the powers they were manifestations of stretching back into the past. Like the causal regress, such a regress may be harmless.

However, the pandispositionalist picture of power activation I described differs from an innocent causal regress in several ways. Suppose that, in order for power B to manifest, a trigger must occur, and this event essentially involves something acquiring a power, call it power A. The acquisition of power A is the trigger for power B to manifest. It is not the case that power A brings about power B, or that power B is the manifestation of power A. Power B was already there, dominant. Something acquiring A is the event that activates power B to produce its manifestation. The question is not “where did power A come from?” but “how did it activate power B?” In other words, how does something acquiring a triggering power result in something manifesting a target power? What is puzzling to me is not what comes before the trigger, but the process that is supposed to commence upon the acquisition of the triggering power.

The regress is not a matter of powers being activated by powers that were activated by powers. Rather, it is a matter of infinitely many triggers needing to occur in order to bring about the manifestation, with the result that we never seem to get there. The problem is not that there are potentially infinitely many triggering events before the striking at t_1 . It is that we seem to need infinitely many triggering events between the striking at t_1 and the gasoline fire at t_n . To see this, note that the striking is the acquisition of the triggering power at t_1 . Since a power cannot be activated until it is acquired, the activation of the triggering power must occur between t_1 and t_n . Let's call that time t_2 . If the activation of the triggering power is the acquisition of power that must be activated, this activation must occur sometime t_3 which is after t_2 , but before the target manifestation at t_n . (t_3 cannot occur before t_2 . t_2 is the time that the first triggering power is activated, that is, when the second triggering power is acquired. t_3 is the time that the second triggering power is activated. A power cannot be activated before it is acquired. Therefore, t_3 cannot occur before t_2 .) If the activation of the second triggering power happens at t_3 , that is an acquisition of a power that must be activated sometime between t_3 and t_n and so on.

One way to break out of this regress is to deny (R1)—that a trigger is the acquisition of a power. The pandispositionalist cannot say that a trigger is an acqui-

sition of some nondispositional property, but perhaps he can say that an activation event is a matter of continuing to have a power. If an event merely involves an object *having* a property at a time, a trigger can occur without something *acquiring* a new property. Does this help?

Let us reconsider the activation of the gasoline's flammability. Let us suppose that this does not have to be a matter of the match acquiring a new property; it is acceptable if the triggering power is a power that the match had all along. However, if this power needs to be activated, there needs to be another trigger. In accordance with the current suggestion, this trigger could also be a matter of something maintaining one of its powers. However, if this power must also be activated, the regress still looms. Whether a trigger is a matter of acquiring a power or maintaining one does not seem to matter.

There is further reason to reject the idea that a trigger is a matter of maintaining a power, rather than acquiring one. If merely having the power were enough to activate a target power, there is no clear reason why the target manifestation did not occur as soon as the triggering power was acquired. In our example, if the match retaining some power that it had prior to t_1 was an event that could activate the gasoline's flammability, then it is not clear why the gasoline did not catch on fire prior to t_1 . It seems that even if the triggering power is not newly acquired, it at least needs to be newly activated. And again, if this second trigger is a matter of something having a power that needs to be activated, we have a regress.

But, one may wonder, do we still have the same kind of regress? Perhaps if the triggering power only needs to be activated, then the regress looks more like the innocent causal regress discussed above.⁷ Suppose again that the trigger occurs at t_1 and the target manifestation occurs at t_n . The present suggestion is that the triggering power was instantiated prior to t_1 but that it was recently activated. The principle that a power must be acquired before it can be activated no longer mandates that the activation of the triggering power occurred after t_1 . So while there may be an endless chain of triggering events, it is no longer the case that they must occur between t_1 and t_n , and the picture looks like powers that were activated by previously triggered triggering powers, back into the past, which looks innocent enough.

In response, consider when is the activation of the triggering power supposed to occur? If it occurs after t_1 , the situation is essentially the same as it would be for a newly acquired power. If it occurs prior to t_1 , then there is an unexplained delay between the activation of the triggering power and the occurrence of the target manifestation. If it occurs at t_1 , then something activates the triggering power at the same moment that the triggering power activates the target power. And "that something" activating the triggering power is a matter of something activating another power, which of course must be activated as well. The result would be that a triggering event would require infinitely many powers being activated simultaneously.

What seems to be causing the problem, then, is not whether the triggering power is newly acquired; it is the triggering power's need for its own trigger.

7. Thanks to Landon Hedrick for this point.

This suggests that the way for the pandispositionalist to escape the regress is to deny (R2)—that a triggering power needs to be activated. So, according to this suggestion, what happens when the target power is activated is that something instantiates a triggering power, and without itself being activated, this triggering power activates the target power to exhibit its manifestation.

In other words, the suggestion is that the triggering power is what we called earlier a “trigger-less power.” Recall that there seem to be two kinds of trigger-less powers: spontaneously manifesting and constantly manifesting. Perhaps there are some cases where a trigger is a matter of something acquiring a spontaneously manifesting power. So, when a trigger occurs in certain circumstances, even if they are ideal, it is a stochastic matter whether the triggering power will manifest and activate the target power. But if determinism is true, or if there are some sure-fire dispositions that always manifest when activated in ideal circumstances, power activation would still be problematic for the pandispositionalist in those cases. However, the pandispositionalist can appeal to the other possible kind of trigger-less powers—constantly manifesting powers. A triggering power could be a power that does not need its own trigger because it is constantly manifesting.

Now, the issue of whether a trigger involves acquiring a power or maintaining a power arises again. If a trigger can be a matter of maintaining a power, and that power is constantly manifesting, then, again, there is no explanation of the time lapse between the acquisition of the trigger power and the target manifestation. So, we are back to the view that a trigger must be a matter of *acquiring* a power, with the new stipulation that it must be a constantly manifesting power, so no additional triggers are needed in order to bring about the target manifestation.

But recall what this means in terms of our original example. We already noted how a match can acquire a power to ignite gasoline without that power ever being manifest without the gasoline catching on fire. So, if the match acquires some constantly manifesting power, it cannot be the power to ignite the gasoline—that power might not manifest at all. So, if the match acquires some constantly manifesting power, it must be some other power. (Recall that an object can gain or lose a constantly manifesting power.) What power could it be?

In the case of the match, an important property the match acquires is *being on fire*. Being on fire is often considered an occurrent property—something that is happening to the match now, not a matter of what it would do in certain circumstances. But recall Hüttemann’s view—that there is no real difference between a constantly manifesting power and a categorical property. So perhaps we can think of “being on fire” as a constantly manifesting power that is acquired when the match is struck.

Note that the manifestation of the triggering power is not the same as the manifestation of the target power—the match being on fire is not the same event as the gasoline being on fire. This suggests that even after the triggering power is manifest, its work is not done, as far as bringing about the target manifestation is concerned. However, as we have seen, we do not want to say we need another

trigger to bring about the target manifestation. So we need a different account of how the triggering power helps to bring about the target manifestation.

5. Triggers for the Pandispositionalist (take two)

One alternative, which I think will be a welcome suggestion to some, is that the constantly manifesting triggering power *contributes* to the target manifestation. The other factors, such as the oxygenation of the air, the proximity of the gasoline, are not to be construed as triggers, but as co-contributors. We had been talking about the acquisition of the triggering power as the triggering event, but since it is the triggering power that contributes to the manifestation, perhaps it would be better to think of the power itself as the trigger. The picture that is now emerging is that when there is a confluence of a target power, a triggering power, and certain powers in their environment, they all jointly contribute to the manifestation. This picture now resembles Heil's view according to which dispositions have mutual manifestation partners.⁸ When a disposition stands in the right relation to its partner(s), the manifestation ensues.

Notice that, in this picture, there is little to distinguish a trigger from other powers that are needed for the manifestation. We have already seen that distinguishing a trigger from the total circumstances of manifestation seems to be a matter of pragmatics: We usually count the match's power as the trigger, but the atmosphere's being oxygenated is an equally qualified candidate. And we've already noted that the same power can be a triggering power relative to one power, and a target power relative to another: Recall that the power of the match to ignite the gasoline was a triggering power relative to the flammability of the gasoline and a target power relative to the power of the striking surface to light matches. Moreover, if powers are mutual manifestation partners, there is no principled reason to call one power a target and the other power a trigger. Which power counts as being targeted and which power counts as doing the triggering is an interest-relative matter. We have been supposing that the match's power triggers the gasoline's flammability. But we could equally say that gasoline's flammability triggers the match's power to ignite flammable substances, or the atmosphere's power to fuel fires, for that matter.

So, if all properties are powers, what do triggers look like? Well, not surprisingly, they look like powers. Triggers cease to be a category of much metaphysical interest, above and beyond that of powers in general. A triggering power is just one of the powers which interact with other powers to produce a manifestation. I do not know if there is any significance to the concept of "interaction" on this view, other than to say that certain combinations and arrangements of powers result in the occurrence of the manifestation. There are all sorts of pragmatic reasons why one power might be singled out as a trigger. If a power is part of

8. Heil, J. (2005) "Dispositions," *Synthese* 144: 343-56. On the view I am describing, however, there will typically be more than two contributing powers. See also Mumford and Anjum (2011).

normal background conditions, its contribution to a manifestation might be taken for granted rather than noted as salient. Such is usually the case with local gravitational fields or typical atmospheric conditions. However, if a power is newly introduced into a situation, it is more apt to be considered a trigger. Moreover, if a power is the last power acquired before the assembled powers culminate in a manifestation, that power is likely to be called a trigger.⁹ But the fact that a power is new, or the final contribution to the manifestation, does not mean that it is a different kind of thing than any of the other powers that contribute to the manifestation. The answer to the question “how does a pandispositionalist activate a power?” is: He brings it together with all its mutual manifestation partners.

To summarize, the possibility that survived the regress discussion was that triggers must be trigger-less. In particular, they must be constantly manifesting. This suggestion raised the question as to how these constantly manifesting triggering powers can be active, and yet not guarantee the occurrence of the target manifestation. The answer to that question is the view currently under consideration, that the triggering power needs its mutual manifestation partners in order for the target manifestation to occur. On this metaphysical picture, even a relative distinction between triggering powers and target powers is merely pragmatic.

6. Remaining Doubts

The picture according to which a trigger is one of the powers which gets together with other powers to produce a manifestation suggests there is no real role for activation. Powers are inherently active, making their contributions, and all one needs to do is to combine them to get a manifestation. But is there ever a sense in which powers are *inactive*, in addition to being insufficient for a certain effect? Perhaps the flammability of the gasoline that is just lying on the ground in a puddle is not making any contribution towards a fire yet. The sulfur on the tip of the match that is tucked away in a match book—its power seems dormant too. The idea that both of these powers are making their small contribution to the fire before the match is even struck seems odd. The fragility of the intact glass, the dark light bulb’s power to illuminate, the soporiferousness of the sleeping pill still in its bottle—these all seem like dormant powers.

Remember, dispositional monism is the view that all properties are powers, not necessarily that all properties are *active* powers. On some views, the possibility of not manifesting, or being manifest in certain circumstances only, is what distinguished dispositions from other properties. If there is no clear difference between a categorical property and a constantly manifesting power, there is no clear difference between the view that all properties are constantly manifesting powers and the view that all properties are categorical properties. If dispositional monism is a real alternative to categorical monism, it should allow for dormant powers.

9. Here, I am following Mumford and Anjum (2011), p. 37.

If powers jointly produce manifestations, these powers need to be active. The question of how to activate a power does not arise for powers that are already active. But it seems possible that some powers are sometimes dormant. And a dormant power cannot contribute anything to a manifestation unless it is activated. But how does that happen? The answer under consideration seems to be that we add its co-contributors to the mix. But if an inactive power cannot contribute, it is not a contributor, and therefore has no co-contributors. More to the point, positing contributing powers does not explain how a dormant power becomes active.

7. Triggers for the Pandispositionalist (take three?)

There is another option for the pandispositionalist. The view that “powers contribute to manifestations” should be distinguished from another view, associated with Molnar, Cartwright, and others.¹⁰ Such views note that most events are not manifestations of a single power, but are instead the result of complex interactions between multiple powers. According to Molnar, a power is one thing, its contribution is another thing, and the actual effect is yet a third. Accordingly, we should distinguish between a power, its manifestation, and the effect that occurs. In a similar vein, Cartwright favors a tripartite distinction between a capacity, its exercise, and the manifest result. For example, perhaps the manifestation of “gravitational mass” is “gravitational force,” and that force contributes to the movements of bodies, along with all of the other forces present in any particular set of circumstances. On these views, it is not the power that contributes to an effect; rather, the capacity’s exercise, or the power’s manifestation, is the contribution. In what follows, I’ll adhere to Molnar’s terminology, according to which “powers” have “manifestations” that contribute to “effects.”

Where are triggers in this picture? A trigger is no longer one of the powers that contribute to an effect, since it is the power’s manifestation, not the power itself, which contributes to the effect. Perhaps one of the powers whose manifestation contributes to the effect could still be called a trigger. Keeping with an earlier suggestion, perhaps the power whose manifestation is the final contribution to the effect is apt to be considered a trigger (the only difference from the earlier view being that the power is distinguished from the contribution it makes). This picture is slightly more complicated, but the role for the triggering power is essentially the same. While the triggering power does not contribute to the effect directly, its manifestation does.

10. See Molnar (2003) and Mumford (2009) for defense of the view that manifestations are contributions to effects rather than effects themselves. See McKittrick (2010) for criticism. See also Cartwright and Corry in Handfield, T. (2009) *Dispositions and Causes*, Oxford: Oxford University Press. I am not saying that these views about exercising powers are offered in service of pandispositionalism, but that they can be put to that end.

However, there is still the issue of the relationship between a power and its manifestation (keeping in mind that a power's manifestation is something that contributes to an effect, rather than being an effect itself). Some powers might manifest constantly, as is perhaps the case with massive objects which constantly exert gravitational force. Some powers manifest spontaneously. But perhaps there are some powers that are such that, not only do they have certain effects in certain circumstances, but they only manifest in certain circumstances. If so, there are times at which such powers are not manifesting, and need to be activated to produce their manifestations.

So, this third take on power activation for the pandispositionalist is subject to essentially the same worries expressed about the second take. If powers are always manifesting, while combining those manifestations to get a resultant effect is surely an intriguing and at times complex process, there is no need for activation. However, if any powers are ever dormant, any story about combining manifestations will not explain how they get activated. This suggests that when such a power has a manifestation that contributes to an effect, there is another element of this scenario—a trigger. Are we any closer to understanding the nature of this trigger?

8. Conclusion

A power must be active in order to contribute to an effect, or to have a manifestation that contributes to an effect. While a power is dormant, it contributes nothing, and has no manifestation to contribute. If any powers are ever dormant, either (a) they stay that way, (b) they manifest spontaneously, or c) something happens that activates them, i.e. a trigger occurs. Before such a trigger occurs, the target power is a dormant power. We have discussed a sense in which any power that contributes to an effect can be considered a target power. But on second thought, there is no need to activate powers that are already active and making their contributions. I submit that there is a more central sense of power activation, according to which a target power must be a dormant power.

So let us return to the view that, when a trigger occurs, something acquires a property, and for the pandispositionalist, this property must be a power. And it must be manifest. If the triggering power were dormant like the target power, it is not clear now it could do any triggering.¹¹ Furthermore, if the triggering power were dormant, the triggering power would need its own trigger, and would itself be a target power, and of course, a vicious regress looms. So it looks like insofar as a power is playing the role of triggering power, it must be active.

11. I suppose it is possible that a manifestation could result from two latent powers coming together. Perhaps a manifestation results from the collusion of two dormant powers in accordance with some law of nature. I see two difficulties for the possibility. This explanation of power activation may interfere with another desiderata of the powers theorist—reduction of laws to powers. And relatedly, it is not clear why these properties should be thought of as powers rather than categorical properties governed by laws. Thanks to Luke Elwonger for this suggestion.

So now we *do* have a metaphysical distinction between a target power and a triggering power: When a power is a target power, it is latent, dormant, not manifesting; when a power is a triggering power, it must be active, exercising, manifesting. And so there is no unexplained delay between the trigger and the manifestation, the triggering power must be recently acquired or recently activated. We do not want to say that all triggering powers are activated just prior to the occurrence of the target manifestation, if that means they needed triggers, due to by now familiar regress concerns. I think, also, we do not want to say that the triggering power manifests spontaneously because (a) we do not want to presuppose indeterminism, and (b) our own abilities to activate powers (light matches, remove stains, make phone calls, etc.) are too reliable to be purely chancy affairs. So, it looks like the best account of triggers for the pandispositionalist is that they are a matter of acquiring constantly manifesting powers not far in advance of the occurrence of the target manifestation.

One might wonder if another regress looms. If the power is newly acquired, what caused it to be acquired? Was yet another power needed to bring about the instantiation of the triggering power? But if there is a regress here, I think it is akin to the innocent causal regress discussed earlier. In a pandispositionalist scenario, the instantiation of a triggering power is a manifestation of another power that was activated previously, just as the cause of an effect is itself an effect that was caused by an earlier cause.

There was also concern over the fact that a triggering power does not guarantee the occurrence of the target manifestation, even when the triggering power is itself manifest. And if something else is needed, it had better not be another trigger. But perhaps there are aspects of the views considered that we can retain and make use of. The activation circumstances might be multi-faceted, involving several different triggering powers. The presence of one constantly manifesting power might not be sufficient, and other powers are needed to contribute and activate the target power.

Or, it might be that the triggering power has successfully activated the target power, and the target power is now contributing its manifestation, but the presence of co-contributing manifestations is insufficient to produce the expected effect. Note that when employing the Cartwright/Molnar tripartite distinction, we must watch for ambiguous references to "manifestations." The triggering power may be constantly manifesting, and it might get the target power to manifest, but they might fail to jointly result in what we have been calling the "target manifestation" if that is, in fact, an effect that would result from the complex interaction of multiple contributions.

If there are dormant powers that do not manifest spontaneously, they need triggers. And to avoid a regress, they need triggers that do not need triggers themselves. So, I suggest, the pandispositionalist needs constantly manifesting powers to trigger dormant powers. But is there any difference between a constantly manifesting power and a categorical property? It would be ironic if the

only way a pandispositionalist can activate a power is by positing what is effectively a categorical property. If the pandispositionalist accepts my solution, has he in effect compromised his pandispositionalism?

Again, I think it depends on what we mean by “manifestation.” If there were such a thing as a constantly manifesting power to be cubicle, for example, I would be hard pressed to explain how that is any different than the categorical property of being cubicle. But what if a manifestation is not a state of affairs like being cubicle, but something less tangible, like the force of gravity? What if constantly manifesting powers have manifestations that are forces, not effects? It is not clear that there is any place for such a constantly manifesting power in a categorical monist ontology. Its manifestation seems insufficiently categorical. So, if pandispositionalism is true, even if a trigger of a power is a constantly manifesting power, it will be distinguishable from a categorical property, since the manifestation is itself the instantiation of a power.

In sum, I have considered several accounts of triggers for the pandispositionalist: acquisitions of dormant powers, activations of dormant powers, acquisitions of spontaneously manifesting powers, acquisitions of constantly manifesting powers, powers that contribute to a manifestation, and powers whose manifestations contribute to effects. I have noted what I take to be drawbacks to each approach. While I tend to favor thinking of triggers as acquisitions of constantly manifesting powers, I leave it to the pandispositionalists to determine which approach works best in their ontology, and to live with or overcome the drawbacks I have highlighted, or to present an alternative account of activation I have yet to consider.