

The Nature of Properties: Causal Essentialism and Quidditism

Jennifer Wang
Philosophy Compass

Abstract: Properties seem to play an important role in causal relations. But philosophers disagree over whether properties or not play their causal or nomic roles essentially. Causal essentialists say that they do, while quidditists deny it. This article surveys these two views, as well as views that try to find a middle ground.

It is widely held that properties contribute to the causal powers of their bearers—the objects that instantiate them—whether on their own or in conjunction with the laws of nature. An electron, which is negatively charged, is thereby repelled by other negatively charged particles. One main question that divides views on the nature of properties is this: Is the relation between properties and the causal powers they confer upon their bearers necessary or contingent? One camp holds that the relation is necessary, with the most popular view being *causal essentialism*. On this view, properties play their causal or nomic roles essentially. It is necessarily the case that a negatively charged particle is repelled by other negatively charged particles—this follows from the nature or essence of the property of being negatively charged. The other camp holds that the relation is contingent, with the most popular view being *quidditism*. On this view, the property of being negatively charged could play a different causal or nomic role than the one it actually plays. Some philosophers have advocated mixed views according to which either (i) both kinds of properties exist; or (ii) properties are in some sense both powerful and quiddistic. This discussion is restricted to fundamental or sparse properties, and it is intended to be neutral between realism and nominalism about universals.

1. Causal essentialism

1.1 Varieties of causal essentialism

The causal essentialist holds that properties play their causal or nomic roles essentially. The *causal role* of *P* is a specification of its potential causes and effects. The *nomic role* of *P* is its role in the laws of nature. It is a substantive question whether these roles ‘line up’. If the roles are distinct, then there are two distinct versions of causal essentialism, the thesis that properties play their causal or nomic roles essentially. Terminology varies widely across defenders of causal essentialism, and it is not always clear whether a given author means to appeal to causal roles, nomic roles, or both.

On a version of causal essentialism that appeals to causal roles, properties are what underlie powers for certain manifestations (or alternatively: properties just are causal powers). Shoemaker (1980a) develops this view, citing as his inspiration Locke (1689) on powers. What makes a property the property that it is—what ‘individuates’ that property—is its potential for contributing to the causal powers of its bearers, or its potential for causing such-and-such. For example, the property of being knife-shaped, when combined with certain other properties (e.g. being made of steel) in the same thing, confers upon that thing the power of cutting butter, cheese, and wood when appropriately applied

to them. The knife-shaped object thus has a *conditional power*: the power to cut butter, cheese, and wood when appropriately applied to them, conditional upon being knife-sized and being made of steel.¹

What Shoemaker calls *causal potentialities* are arguably what others call *dispositions*. Dispositions have traditionally been associated with counterfactual conditionals that specify their stimulus and manifestations conditions, where dispositional properties are those properties that underlie dispositions.² Given that dispositionality is a causal notion, it may be that dispositional properties just are the causal essentialist's properties. In any case, it is clear that a view on which all properties are essentially dispositional is like causal essentialism in spirit, if not in letter. This view is called *dispositional monism* or *pandispositionalism* in the literature; the term *dispositional essentialism* more frequently refers to views on which at least some properties are essentially dispositional.

Hawthorne (2001) discusses another version of causal essentialism, one that explicitly appeals to a property's role in the laws of nature. He follows Armstrong (1983) in representing the laws of nature as causal necessitation relations (' \mathcal{N} ') between universals, or for our purposes, properties. To characterize the nomic roles of properties, Hawthorne makes use of the Ramsey-Lewis method for defining theoretical terms³: Conjoin all the laws that appear in the 'lawbook' of a world to form one sentence. The *Ramsified lawbook* is the existential generalization of this sentence over all properties that appear in the lawbook, along with distinctness and 'that's all' clauses for each, which will be ignored below. The nomic role of a given property in this world is the result of removing the existential quantifier corresponding to it from the Ramsified lawbook.

As an example, suppose the lawbook contains these four laws:

$A\mathcal{N}B, A\mathcal{N}C, B\mathcal{N}D,$ and $D\mathcal{N}E$

The resulting Ramsified lawbook is:

$\exists F_1\exists F_2\exists F_3\exists F_4\exists F_5(F_1\mathcal{N}F_2 \& F_1\mathcal{N}F_3 \& F_2\mathcal{N}F_4 \& F_4\mathcal{N}F_5)$

And the causal role played by property A is:

$\exists F_2\exists F_3\exists F_4\exists F_5(F_1\mathcal{N}F_2 \& F_1\mathcal{N}F_3 \& F_2\mathcal{N}F_4 \& F_4\mathcal{N}F_5)$ ⁴

The line between causal and nomic versions of causal essentialism is not precise. As such, moving forward, all such accounts will fall under the name 'causal essentialism' and will only be distinguished where necessary.

¹ Defenders of similar views include Bird (2005, 2006, 2007a, 2012b), Eagle (2009), Harre (1970), Harre and Madden (1975), Martin (1993), Shoemaker (1980a, 1980b, 1998), and Whittle (2009). Mumford (1998, 2004) holds something like causal essentialism—including the acceptance of causal powers—but rejects the ideology of essence; see Mumford (2005).

² See Bird (2012a) for an overview.

³ This is due to Lewis (1970) and Ramsey (1931).

⁴ The following may be construed as defending nomic versions of causal essentialism: Kistler (2002), Mellor and Oliver (1997), Swoyer (1982), and Tweedale (1982).

Defenders of causal essentialism typically think that the laws of nature are metaphysically necessary; if properties play their causal roles essentially, then the laws governing those properties cannot differ. But there is conceptual room for thinking that the laws of nature are contingent. If alien properties—properties that do not actually exist—are possible, then the laws governing them may not exist. Causal essentialism motivates at least a weak necessitarianism about the laws of nature that is compatible with the possibility of non-actual laws, given the possibility of alien properties. Strong necessitarianism denies the possibility of alien properties: necessarily, the laws of nature are necessary.⁵

1.2 Arguments in favor of causal essentialism

One main motivation for causal essentialism stems from epistemological considerations. The starting picture, as described in Shoemaker (1980a), is this. We interact with properties in the world by directly or indirectly observing the effects of causal powers. The observation is direct if the property itself causes some sensory state in the observer, and indirect if the observer infers the existence of the property from some other properties that directly cause some sensory state in the observer. In general, we are able to (i) detect properties by their causal effects, (ii) recognize cases of property-sharing, and (iii) recognize properties across time.

But these apparent abilities are threatened if causal essentialism is false. Consider the following scenarios:

Isolation: There are causally isolated properties.

Symmetry: Two properties play exactly the same causal or nomic role.

Change: A property plays different causal or nomic roles at different times.

Each of these scenarios is a skeptical scenario: if the scenario were actual, we would be ignorant of whether we were in that scenario. Furthermore, consider the following pair of scenarios:

Mere Difference: Two scenarios differ only in which property plays which causal or nomic role.⁶

The causal essentialist holds that there is no good reason to think these scenarios are distinct possibilities. But those who reject causal essentialism seem committed to the skeptical conclusion.

Hawthorne (2001) holds that the best argument in favor of causal essentialism is methodological: “Don’t invoke what you don’t need.” The methodological argument proceeds via the observation that it is scientifically unnecessary to posit the existence of properties that do not play their causal or nomic roles essentially. Given this, we ought to accept only the causal essentialist’s properties. But Hawthorne cautions (369): “[O]ne should be aware of a trade off: Perhaps science doesn’t need a robust conception of causation and can get by with thinking of causal laws in a Humean way, as the simplest

⁵ Reasons in favor of strong necessitarianism are discussed in Bird (2007a: section 3.2).

⁶ See Black (2000).

generalizations over the mosaic. If so, it seems that one needs an independent characterization of the mosaic's pixels. It hardly seems plausible to be a deflationary Humean about causation and yet a causal structuralist about properties. To eschew quiddities on the basis of considerations of scientific economy may serve to saddle us with a view of causality that is far from economical."

1.3 Arguments against causal essentialism

Causal essentialism faces several objections. The first objection targets views like Shoemaker's: causal essentialism is problematically circular, since it appeals to the notion of *property* in the identity conditions of properties. After all, causal powers are powers for certain manifestations, which involve the instantiation of other properties. Put another way, this account of properties appeals to powers, and vice versa. Shoemaker's response is that the circularity only precludes the possibility of a reductive analysis of either notion. This is not a problematic circularity, for the notions of *property* and *power* are part of a system of interrelated notions, which also on his view include the notions of *similarity* and *persisting substance*. Hawthorne introduces the Ramsey-Lewis method of characterizing nomic roles precisely in order to get around a similar circularity worry about the definitions of particular properties.

A second objection to causal essentialism targets Shoemaker's main reason for holding his view: it is only on a theory according to which we know properties through their effects that we can have knowledge of properties at all. There is then a regress, since effects can only be recognized if properties can be recognized.⁷ Shoemaker replies (1980b) that recognizing properties by recognizing their effects is only one of the ways of knowing a property by its effects; another involves a direct causal connection between a property instantiation and the sensory states of the observer. Bird (2007b) offers a different reply, one that parallels the epistemological move of denying that knowledge requires knowledge of knowledge. Applied to this case, an observer may know that a property is instantiated without knowing that she knows that it is instantiated. This may happen, for instance, if a reliable process brings about the relevant mental state.⁸

A third objection to causal essentialism appeals to the apparent possibility of symmetric causal roles.⁹ Consider the following plurality of laws on which there are exactly four properties, *A*, *B*, *C*, and *D*:

$$A\mathcal{N}C, B\mathcal{N}C, (A\&B)\mathcal{N}D$$

A and *B* play the same role:

$$\exists Y \exists Z \exists W (X\mathcal{N}Z \& Y\mathcal{N}Z \& (X\&Y)\mathcal{N}W)$$

Yet they must be distinct properties, because it is only their joint instantiation that brings about *D*. Causal essentialism must rule out a seemingly possible set of laws.

⁷ See Swinburne (1980).

⁸ Bird (2007a, 2007b) also distinguishes and replies to two other versions of the regress argument.

⁹ See Armstrong (1999: 28-9) and Hawthorne (2001: 373-5).

In response, the causal essentialist may endorse a weaker version of her theory.¹⁰ Instead of identifying distinct properties by their causal roles, she may appeal to the notion of the *causal profile* of a world, which is a complete description of the causal structure of the world. On Hawthorne’s version of causal essentialism, the causal profile of a world just is its Ramsified lawbook. The weak causal essentialist claims only that the causal profile of a world exhausts facts about which properties play which causal roles. In possible worlds language, this means that there cannot be two possible worlds that have the same causal profile, but differ in which property plays which causal role. This allows for the possibility of symmetric causal roles within the same world.¹¹

A final objection to causal essentialism specifically targets versions of causal essentialism that appeal to Ramsified lawbooks. The objection focuses on the privileged role that causation plays in such views. Why existentially generalize away from all properties and relations *except* causation? If we generalize away from causation as well, we end up with what Hawthorne (2001) calls ‘hyperstructuralism’. For example, consider the Ramsified lawbook from above:

$$\exists F_1 \exists F_2 \exists F_3 \exists F_4 \exists F_5 (F_1 \mathcal{N} F_2 \ \& \ F_1 \mathcal{N} F_3 \ \& \ F_2 \mathcal{N} F_4 \ \& \ F_4 \mathcal{N} F_5)$$

On hyperstructuralism, the true lawbook of this world looks like this:

$$\exists F_1 \exists F_2 \exists F_3 \exists F_4 \exists F_5 \exists R (F_1 R F_2 \ \& \ F_1 R F_3 \ \& \ F_2 R F_4 \ \& \ F_4 R F_5)$$

This is intuitively the wrong result, for this lawbook says only that there exist five properties that are related to each other by some relation in a certain way.

2. Quidditism

2.1 Versions of quidditism

Quidditism is typically characterized in opposition to causal essentialism. According to quidditism, properties do not play their causal roles essentially. This is often combined with the claim that properties have primitive identities, trivial essences, or ‘float free’ of their causal roles.

The claim that properties do not play their causal roles essentially is consistent with a variety of more moderate claims. The quidditist may appeal to an analogue Lewis’s (1986) distinction between *haecceitism* and the view that there are *haecceities*. Haecceities are said to be the non-qualitative ‘thisnesses’ of objects. They are properties that individuate a particular object, so the object exists iff its haecceity is instantiated. Haecceitism, on the other hand, is the view that non-qualitative facts do not supervene on qualitative facts. In possible worlds language, this says that there may be two possible worlds that are exactly alike qualitatively, but which differ in some non-qualitative fact. Haecceitism does not require haecceities, nor vice versa.

Analogously, the quidditist may endorse one or both of the following views. First, she may endorse the existence of *quiddities*, which are the ‘thisnesses’ or ‘suchnesses’ of

¹⁰ See Hawthorne (2001: 374-5).

¹¹ See 2.1 for the quiddistic analogue of weak causal essentialism.

properties. Second, she may deny that facts about which properties play which causal role supervene upon the causal profile of a world. In possible worlds language, there may be two possible worlds that are exactly alike with respect to causal facts, but which differ in which properties play which causal roles. The most well-known version of quidditism is that on which there are quiddities, as defended in Lewis (1986, 2009), Schaffer (2005), and Armstrong (1999). For quidditism without quiddities, see Locke (2012) and Robinson (1993). Quidditists often take the laws of nature to be contingent, but this is not an essential part of their view.

2.2 Arguments in favor of quidditism

The main argument in favor of quidditism assumes a principle of recombination according to which possibility is preserved under recombination of fundamental elements. In the case of properties, this tells us that any recombination of properties in some possible distribution of properties yields a possible distribution of properties. Many quidditists, like Lewis (1986: 163 and section 1.8) and Schaffer (2005: 10, 12), accept the principle of recombination. But it is incompatible with causal essentialism. Suppose it is a law that $A_N C$, and that accordingly, instances of A are always followed by instances of C . The principle of recombination yields a possibility in which an instance of A is not followed by an instance of C .

Hawthorne (2001) suggests a modification of the principle of recombination that is compatible with causal essentialism. The strategy is to replace recombination of properties with recombination of Ramsified lawbooks: Any logically consistent Ramsified lawbook yields a possible set of properties. This allows the causal essentialist to retain the spirit behind the principle of recombination without committing to quidditism.

2.3 Arguments against quidditism

The epistemological argument against quidditism just is the epistemological argument for causal essentialism, discussed in 1.2. Rather than take these considerations as a *reductio* against quidditism, Lewis (2009) accepts what he terms ‘Ramseyan Humility’, attributing the thesis to Langton (1998) in her treatment of Kant. Ramseyan Humility is the acceptance of the possibility of skeptical scenarios like *Isolation*, *Symmetry*, *Change*, and *Mere Difference* along with the attitude that we in fact cannot know whether we are in a skeptical scenario.¹²

Hawthorne (2001) and Schaffer (2005) respond that the skeptical scenarios are versions of skepticism about the external world. After all, it just is a form of an ‘unlucky world’ scenario—one in which unbeknownst to us, there are two properties playing the same causal role, etc. The various strategies that people have replied to the latter may be applied to the former. However, Kelly (2013) argues that Lewis’s point is stronger: we cannot even grasp any proposition about which properties play which causal roles. To grasp the relevant proposition, one must be able to evaluate it without indexical reference to the actual world. But on quidditism, there is no way to identify an actual property in another possible world without indexical reference to the actual world.

3. Mixed views

¹² See also Locke (2009).

The rejection of causal essentialism does not entail quidditism. There are a number of ‘mixed views’ that lie between them. These come in two forms: (i) pluralism and (ii) views on which properties are in some sense both powerful and quiddistic. Many authors contrast powers with ‘qualities’. I will use the term ‘quiddities’ in place of ‘qualities’, as these two terms are often contrasted with each other.

3.1 Pluralism

The first kind of mixed view rejects that all properties play their causal or nomic role essentially. According to *pluralism*, some properties are essentially causal, and others are not; that is, there are both powers and quiddities. Ellis and Lierse (1994) accept the existence of powers for the same sorts of reasons detailed in section 1.2. But they also accept the existence of certain quiddities: namely, spatiotemporal structures and numbers. Molnar (2003) defends a similar view, on which powers are ‘location-sensitive’.

Ellis holds that causal processes involve both powers and categorical properties, which are quiddities. Hence, quiddities have a place in the causal roles of powers.¹³ He denies that the epistemological argument against quidditism works; we do have knowledge of properties like size, shape, and orientation. This knowledge is mediated by the causal powers of the objects that have these properties.

Armstrong (2005: 313) objects to pluralism by questioning the role of quiddistic properties in causal explanation. He starts with the claim that quiddities must make a causal contribution to the operation of powers. If they did not, they would be epiphenomenal. But on the assumption that they do, it is difficult to spell out what role they play without ‘playing havoc’ with the idea that causality is to be explained in terms of powers. For instance, take the law of gravitation:

$$F = G \frac{m_1 m_2}{r^2}$$

Armstrong argues that if distance r is to play a role in the causal explanation of two gravitational bodies acting on each other, the bodies must be ‘sensitive’ to the distances; but sensitivity is a causal notion.

3.2 Powerful quiddities

Another kind of mixed view denies that properties have purely causal essences or purely quiddistic essences. Martin (1993) is an early defender of such a view. On the *double-aspect view* of properties, properties have both quiddistic and powerful aspects. No property is only ‘pure act’ or ‘pure capacity’ (2007: 64). Martin puts his view of properties to work in accounting for mental phenomenon, and in particular intentionality—‘mental directedness’. The latter is explained by the ‘directedness’ of dispositional (that is, powerful) states of nonmental entities.

Armstrong (2005: 314-5) objects to this view by posing a dilemma. Is the relation between the two aspects of a property necessary or contingent? If it is contingent, then there is a possible world in which the power and quiddity are not associated with each other. As for why this is objectionable, Armstrong only writes: “This [is] just the sort of

¹³ See Ellis (1999, 2001, 2010, 2012).

'possibility' (these are sneer quotes) that power theorists pride themselves on rejecting as not really possibilities. It would certainly be a very unattractive way to spell out a power theory." But to say that the aspects are necessarily connected would be an *ad hoc* move.

The *identity view*, which Martin (2007) later adopts (calling it the 'limit view'), modifies the double-aspect view so that it escapes Armstrong's objection.¹⁴ It is not that the quiddistic and the powerful are distinct aspects of properties—this sounds too much like saying they are two distinct second-order properties of properties. Rather, the powerful and the quiddistic are only found at the 'limits of abstraction'. Abstraction is a mental act that we may perform upon reflecting on the nature of properties. When we do so, we find both the quiddistic and the powerful; we can conceive of them as distinct only insofar as we can abstract one away from the other. The underlying metaphysics is intended to explain this phenomenon: the quiddistic just is identical to the powerful. That is, a property just is a quiddity, and it also just is a power.

Jacobs (2011) defends a modification of the identity view that he calls the *truthmaker view*. Properties are *thick quiddities*, and are also (part of) the truthmaker for certain counterfactuals. Thick quiddities are properties with non-trivial yet quiddistic essences. Following Armstrong (1989), Jacobs claims that we are directly acquainted with them. These very quiddities are the truthmaker for counterfactuals describing how their bearers will act in various situations. The truthmaking relation is that relation that holds between a truth and the entity in the world whose existence suffices for its truth. One might wonder why it is that some particular thick quiddity is also the truthmaker for some particular counterfactuals. Jacobs' response is that the mere identities of the thick quiddity and the counterfactual are enough to fix the truthmaking relation, since the truthmaking relation is internal.

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¹⁴ See also Engelhard (2010), Jacobs (2011), Heil (2003, 2005, 2010), Martin and Heil (1998, 1999), Schroer (2013), Strawson (2008), and Taylor (2013).

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