ORIGINAL RESEARCH

Why the qua Problem has not Been Dissolved: Reply to Deutsch

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Abstract

In a recent paper, Max Deutsch argues that there is no "qua problem" for purely causal theories of reference, according to which the extensions of some expressions are grounded in causal relations to members of their extensions during dubbing acts. The qua problem is the difficulty in specifying the facts in virtue of which the reference of "elephant" is grounded by causal contact with something *qua* elephant and not *qua* its other properties. If no such specification can be given, reference remains unacceptably indeterminate. This has led many to abandon purely causal reference grounding.

Deutsch's argument for the dissolution of the problem goes as follows: we usually agree that an event can cause its effect *qua* some of its properties and not *qua* others. For example, a hot acidic solution causes a glass beaker to break due to its heat and not due to its acidity. Given this assumption, we can simply say that an event caused a dubbing act *qua* the causally relevant property and not *qua* the causally irrelevant properties, thus grounding the reference of the term; the qua problem has vanished.

I will argue that causal mechanisms, and in particular the facts about causal relevance appealed to by Deutsch, are insufficient to dissolve the qua problem. It is not generally the case that a *unique* property is causally relevant in purely physical cases of causation; but this is precisely what is required to avoid the referential indeterminacy highlighted by the qua problem. I will demonstrate that if we rely on causal relevance to dissolve the qua problem, there is no way to respect the uniqueness requirement: there are too many properties that are causally relevant to the occurrence of any single dubbing act, including the intentional states of the dubber.

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1 Introduction

In his paper "Is There a "*Qua* Problem" for a Purely Causal Account of Reference Grounding?" (2023), Max Deutsch aims to dissolve one of the most persistent and serious problems faced by causal theories of reference: the qua problem. The qua problem arises in connection to the proposed mechanism for reference grounding, namely the "baptism" or "dubbing" event at which a new object or property is named for the first time. Roughly speaking, causal theorists argue that during the act of dubbing, reference is grounded in the causal relation between a speaker and an object or one of its properties (the details of how this happens vary between theories). However, it is difficult to determine which one of the many objects present during the dubbing, or which one of the properties instantiated by an event, is the one that grounds the reference of a newly introduced term. For example, if I try to dub one of my cat's properties by saying "I dub this a 'mammal,'" what makes it the case that I dubbed the property of being a mammal?[1] After all, I am in causal contact with many of my cat's properties at once – she is not only a mammal, but a feline, soft, orange, and so on. The same goes for the introduction of proper names. If I am dubbing a new-born kitten – "I dub you 'Felix'" – there seem to be many candidates for the bearer of the name (a time-slice of the cat, the cat minus its hair, a space-time worm and so on). The qua problem can be stated as follows: if reference is grounded by causal contact with something, there is a difficulty in specifying *in virtue of what* a new term is grounded in a specific property or object rather than in another.[2]

Deutsch (2023) engages with the qua problem as it concerns kind terms. He argues that, at least in the case of the introduction of kind terms, the qua problem is illusory. Causes cause their effects in virtue of some properties and not others, and so reference is grounded in a specific property in virtue of the dubbing act being caused by that very property; and a dubbing act is caused by a specific property because that's how causation works. There is no mystery here, as there is no mystery in the case where a glass beaker breaks due to the heat of the liquid being poured in it and not due to its acidity.

If the qua problem can truly be dissolved, causal theories come much closer to being viable. This would be good news for those who hope reference might ultimately be naturalised: if reference is grounded purely in causal mechanisms in *some* cases, then there is hope that all reference could be ultimately explained by these cases. The dissolution of the qua problem removes one of the obstacles to this attempt at naturalisation.

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[1] Imagining, of course, that this is a novel dubbing act, or perhaps even the original act at which the English word "mammal" was introduced.

[2] The qua problem as it was originally introduced in Sterelny's, 1983 paper "Natural Kind Terms" is posed at three different points: first, nothing seems to determine whether a dubber is dubbing a property or an individual. Secondly, if the dubbing is of an individual, nothing seems to determine which of the individual-candidates is the referent (this is also known as the problem of the many). Lastly, if the dubbing is of a property, nothing seems to determine which one of the properties causally related to the speaker is the extension of the newly introduced kind-term. However, the variant of the qua problem that is relevant to Deutsch's discussion is the one that is relative to kinds.

Another reason causal theories of reference are attractive is that they can avoid some problems faced by descriptivist theories of reference, such as successful referring in cases of ignorance and error. Intuitively, a speaker can successfully introduce a new term even when the descriptions they associate with the referent are lacking or deeply mistaken. For example, we can imagine a person introducing the term "platypus" for a kind of animal without knowing any of its distinguishing or essential properties, or even while being mistaken about them (e.g., believing them not to be mammals). But if one assumes that descriptions are required for the grounding of reference, there is no way of doing justice to this intuition. These issues are precisely the ones that motivated early outlines of causal theories such as the ones found in Donnellan (1972), Putnam (1975), and Kripke (1980). If the purely causal reference grounding of kind terms truly is possible, as Deutsch aims to demonstrate, that allows for *any* amount of error or ignorance; this means that even if we are radically mistaken about something – e.g., we believe kangaroos to be animals, but they turn out to be angels – we can still successfully refer to them with the term "kangaroo." While there is some disagreement regarding the possibility of successfully referring while being radically mistaken (see, for example, Miller, 1992: p. 428 and Thomasson, 2007: pp. 49–51), Deutsch believes it to be plausible that we can do so, and purely causal reference grounding can accommodate this intuition.

Despite the attractiveness of causal theories, the persistence of the qua problem has led many to conclude that purely causal reference fixing is not possible, including Devitt and Sterelny, whose joint work popularized the issue (1987). Both philosophers, like many others, resorted to a hybrid causal theory as a solution to the qua problem: they argued that *some* descriptive content in the mind of dubbers is needed for an adequate grounding of reference.[3] A dubber needs to have the intention to dub a *kind of thing* for reference fixing to succeed. For example, I might utter "I dub this a 'cat'" in front of a cat while intending to dub *a species of animal*; this excludes other properties from being possible candidates for the reference grounding (e.g. its softness, orange-ness, its being a carnivore and so on). The descriptive content does not need to be uniquely satisfied by the dubbed object or property; some of the work is done by the fact that speaker and object/property are in causal contact.

It is not surprising that hybrid causal theories are sometimes a bitter compromise for their proponents. First, hybrid theories renounce the possibility of purely causal reference grounding, which in turn implies closing off the possibility of naturalising reference via this route. Secondly, the need for speakers to have a description in mind while dubbing reintroduces the issue of understanding successful referring in conditions of ignorance and error that motivated the most pointed criticisms of descriptive theories. It is unsurprising that some philosophers wish to defend the possibility of purely causal reference grounding, and doing so requires dealing with the qua problem.

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[3] The hybrid solution has been sketched by Devitt and Sterelny in *Language and Reality* (1999). As mentioned by Deutsch, Amie Thomasson also resorts to a hybrid theory in order to respond to the qua problem (Thomasson, 2007: 38–40). There are other examples of philosophers resorting to hybrid theories for the same reason, such as Stanford's and Kitcher's 2000 paper "Refining the Causal Theory of Reference", and it generally seems as if the qua problem has pushed away many from the initial enthusiasm generated by the idea of purely causal reference grounding.

Deutsch's proposed dissolution of the qua problem, while it presents a novel and interesting approach, ultimately fails. To demonstrate why this is the case, I will first briefly describe his argument. I will also set up some minimal background assumptions regarding how causation and causal relevance should be understood. Under these minimal assumptions, Deutsch's dissolution of the qua problem can be shown to be faulty; causal mechanisms cannot deliver the desired referential determinacy.

2 Deutsch's Argument for Purely Causal Reference Grounding

To argue that the qua problem does not arise, Deutsch relies on some of the general characteristics of causal relations and proposes that these general characteristics are sufficient to explain the qua problem away. The example he uses is that of hot acid being poured in a glass beaker, causing the beaker to break. In this case, it seems unproblematic that the liquid broke the glass *qua* hot thing and not *qua* acidic thing (2023: p. 1811).[4] Now imagine a dubbing event of some sort: Adam is walking through a forest and sees a strange large creature. He says "I dub this an 'elephant.'" In virtue of what is the newly introduced term's reference grounded in the object *qua* elephant and not, for example, *qua* mammal, or *qua* loud thing, or *qua* gray thing? Deutsch says that the answer is simple: the dubbing event was caused by the sample *qua* elephant and not by the sample *qua* mammal. No further story is needed, as in the beaker case. The dubbing event can be seen as analogous to any other physical event that involves causation.

In short, Deutsch argues that "elephant" refers to elephants because it is the fact that the thing in front of Adam is an elephant that *causes* him to say "I dub this an 'elephant'" (2023: p. 1811). The thing's nature *qua* elephant is what causes him to speak and behave as he does. This analysis of the dubbing event, he argues, rests upon an uncontroversial fact about causation: that causes cause their effects in virtue of some properties and not others.

The key to Deutsch's dissolution of the qua problem is the idea that "some features of a sample (its elephant-ness, e.g.) can be causally relevant with respect to an act of reference grounding even when others of its features (its loud-ness, e.g.) are not" (2023: p. 1813). This is the mechanism that supports the idea that the liquid's heat is causally relevant to the glass beaker breaking, while the liquid's acidity is causally irrelevant to the glass beaker breaking.

While Deutsch states that the assumptions he makes about causation are uncontroversial, this is not entirely accurate. The assumption that "causation is *qua* certain properties and not *qua* others" (2023: p. 1812) commits Deutsch to a theory of causation that allows for a certain level of fine-grainedness of the causal relata. Davidson's (1967) view, for example, in which the causal relata are events understood as individuals existing at a particular time, would not be suitable for this; Davidsonian events do not seem to single out anything that could plausibly be *the* property *causing* the dubbing event in any single grounding of reference. Another view, the one that takes causal relata to be *facts*, also seems to be incompatible with properties being causes;

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[4] This example is due to Miller (1992), whose paper inspired Deutsch's.

facts are not usually thought of as composed of properties (they might be composed of *concepts*, or they might *exemplify* properties, but they do not involve properties directly). Kim's (1976) theory of events, which defines them as being instantiations of properties by objects at times, is better suited to Deutsch's approach. To ensure some level of precision and clarity in this discussion, we can minimally assume that the causal relata are events, and that these events are instantiations of properties which may or may not be causally relevant. However, my argument does not depend on the truth of this specific view on the metaphysics of causation. The only requirement I need is the same one Deutsch needs: that properties may be understood, within the theory of causation of our choice, as causally relevant or irrelevant to an effect.

3 Why Deutsch's Dissolution does not Work

3.1 Causal Relevance and Uniqueness Requirements

Deutsch's assumption that some properties are causally relevant while others are not needs to be paired with an account of what differentiates the causally relevant from the causally irrelevant properties. Though Deutsch does not provide an account of causal relevance, he cites Braun (1995: 450), Miller (1992: p. 429), and Maddy (1984: p. 465), who all discuss (in slightly different ways) counterfactual accounts of the distinction between causally relevant and causally irrelevant properties.[5] Deutsch is also explicitly inspired (2023: pp. 1808, 1811, 1814) by Miller's (1992) argument, which is given in terms of a counterfactual analysis of causal relevance. Although Deutsch discusses the differences between his and Miller's argument (2023: pp. 1814-6), he does not seem to believe that they differ in the treatment of causal relevance. Given all this, it can be reasonably assumed that he would accept an analysis of causal relevance in counterfactual terms.

A simplified way of characterizing the distinction between causal relevance and irrelevance in counterfactuals terms can be summed up as follows:

Causal relevance of a property F: c which is F causes e which is G; and

had c not been F, e would not have been G,

Causal irrelevance of a property F: c which is F causes e which is G; and

had c not been F, e would still have been G,

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[5] It should be noted that while Braun describes counterfactual approaches as the "natural" way of understanding causal relevance (1995: p. 449), he later goes on to criticise them and propose his own, essentialist analysis of causal relevance. His novel proposal is that a property is causally relevant to an effect iff it is an essential property of the cause (p. 453). An essentialist analysis of causal relevance cannot work for Deutsch's dissolution of the qua problem – there are too many essential properties of any given cause, and if the causally relevant properties are the essential ones, that does not restrict the number of referential candidates to a sufficient degree. Because of this, I believe it is charitable to assume that Deutsch did not have an essentialist analysis of causal relevance in mind when citing Braun. I want to thank one of the anonymous reviewers for this journal, who raised this issue in their comments.

where *c* and *e* are events, and F and G are properties instantiated by those events.[6]

In the case of the glass beaker, the causal irrelevance of the acidity and the causal relevance of the heat is supported by the presumed truth of the following two counterfactuals:

Relevance of heat Had the liquid in the beaker been cold, it would not have broken the glass.

Irrelevance of Acidity Had the liquid in the beaker been non-acidic, the glass would still have broken.

In the case of the glass beaker, this counterfactual account of causal relevance delivers the right result, i.e. that it was the heat and not the acidity that "made a difference" in causing the effect of the glass breaking. According to Deutsch, the truth of these counterfactuals is supported by additional physical facts about the nature of the substances involved, e.g. the glass's breaking point with respect to a certain temperature and other such physical properties (2023: p. 1813). While the above counterfactuals support the relevance of one property and the irrelevance of another property, they do not tell us that the heat is *the unique cause* of the breakage; there are additional causally relevant properties here – properties without which the effect would not have occurred.

In the case of reference grounding, however, a newly introduced term must refer to a unique property for reference to be determinate. Deutsch suggests that referential determinacy can be explained by causal relevance. If Deutsch were to use the account of causal relevance we have assumed in a dubbing example, he might argue that the referential determinacy of the introduced terms is grounded in causal facts that support the following counterfactuals:

Relevance of elephant [**elephant**]: Had the thing not been an elephant, Adam would not have uttered "I will dub this an 'elephant.'".

Irrelevance of loudness [**loudness**]: Had the thing not been loud, Adam would still have uttered "I will dub this an 'elephant.'".

If these two counterfactuals are true, they support the conclusion that it was the thing's property of being an elephant, and not loudness, that caused the utterance "I will dub this an 'elephant.'".

It should be noted here that, just as in the case of purely physical causation, these counterfactuals do not support the conclusion that *only* the property of being an elephant caused the dubbing utterance; and that is precisely what we need to avoid the referential indeterminacy presented by the qua problem. As will be shown soon, there is always a multiplicity of causally relevant properties in dubbing cases, as in any other case. Causal relevance does not provide us with the uniqueness we require to solve (or dissolve) the qua problem.

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[6] These counterfactuals are not supported in cases of overdetermination, such as those in which two causes acting simultaneously would have independently caused one and the same effect (think of two snipers aiming and shooting at a single target). Since there is not reason to think that dubbing acts are generally overdetermined, and since overdetermination is a rare occurrence, it can be set aside for now.

3.2 The Cause

The issue with purely causal reference grounding was the indeterminacy that resulted from multiple properties being equally good candidates for reference. The difficulty was singling out *a unique* property that would cause a dubbing event, thereby grounding reference in that property and not in others. What is needed for determinate reference in this framework, then, is the causal irrelevance of all but one property.

In cases of purely physical causation such as the beaker example, it is implausible that a unique property is causally relevant. While the heat of the liquid is causally relevant to the breaking of the beaker, so too is the beaker's shape, the thickness of the glass, the pressure in the room, and many other conditions *sine qua* the beaker would not have broken. Deutsch is right that nothing like the qua problem occurs in typical cases of causation, but this is simply a consequence of the fact that we do not require effects to be caused by a unique property. Saying that a basketball bounced both due to its shape and due to its density does not lead to any kind of indeterminacy. In contrast, if one wants to defend the possibility of purely causal reference grounding, there needs to be some causal mechanism that supports the singling out of a unique property that will ground reference. Otherwise, reference remains indeterminate. Deutsch's analogy with the beaker suggests that he believes that causal relevance will do the trick; however, causal relevance does not seem to deliver the uniqueness that is needed for referential determinacy.

Deutsch mentions that there might be issues with singling out *the* cause in cases of causal overdetermination – i.e., in cases where we have multiple distinct and individually sufficient causes of one and the same effect. He also states that these are issues that concern the metaphysics of causation more generally which have little to do with the specifics of reference. However, the cases we have been considering here are not cases of overdetermination; the basketball's shape *alone* is not sufficient to cause the ball's bouncing, nor is its material. Having multiple causally relevant properties is not the same as having multiple distinctly sufficient causes.

One might respond that there is something akin to a unique causally relevant property in the cases of straightforward causation: it's what we would call "the cause" as opposed to "the background conditions." For example, most people would say that in the case of a house fire, the cause was some triggering event, such as a candle tipping over, rather than some background condition, such as the presence of oxygen in the room, even though there wouldn't have been a fire in the absence of either. However, there are two reasons why this cannot help Deutsch's case. First, there are many cases of causation in which background conditions are contrasted with *the causes* and not *the cause* of an event, and as such, do not supply the uniqueness that is necessary in the case of reference. Second, it is generally accepted that the distinction between *the* cause(s) and the background conditions is dependent on context, and thus not a matter of objective fact. In other words, what is the cause and what are the background conditions shifts based on the interest of the observer or, more generally, pragmatic reasons (Lewis, 1973, Frisch 2022, Schaffer, 2005). This is not sufficient to supply an objective causal ground for determinate reference.

3.3 Too Many Causally Relevant Properties

Having established that we have no reason to believe events have a single cause as determined by what is causally relevant to them, we can show why that's also the case for dubbing events specifically. In other words, it can be shown that for any single dubbing event, there will be many properties that are causally relevant to its occurrence. A first and obvious example is that all intermediate links in the causal chain that connects the elephant encounter and the utterance are causally relevant to the dubbing event. For the sake of argument, let's assume that [**elephant**] is true, i.e., that the property of being an elephant is causally relevant to the occurrence of the dubbing event in question. There are a number of intermediate causal steps between the encounter with the elephant and the dubber's utterance. For instance, the elephant must be *perceived* by the dubber, requiring the appropriate functioning of intricate perceptual and cognitive mechanisms, along with the necessary sound-producing machinery that enables speech and thus the dubbing utterance, etc.[7] What this means, in short, is that there are many links in this causal chain without which the dubbing act would not have occurred. Each of these intermediate causes is causally relevant:

Relevance of Perception Had Adam not perceived the thing in front of him, he would not have uttered "I dub this an 'elephant.'".

Many other properties are plausibly causally relevant to this dubbing event. There seems to be no way of excluding these intermediate steps from what is causally relevant to the dubbing act. There is no single cause of the dubbing act, and so no way of securing determinate reference through purely causal reference grounding.

One possible objection to this argument goes as follows. While there are many intermediate causes between Adam's encounter with the elephant and his utterance, these have little to do with relevant sample in front of Adam. In other words, should we not limit ourselves to considering properties of the relevant sample only? [8]

Assuming that there is no issue with the individuation of *the sample* – in our case, the particular elephant Adam is confronted with – is akin to assuming that a large part of the qua problem has already been resolved. In virtue of what does Adam's ostension pick out exactly the kind of thing we want "elephant" to refer to? If we are to give a *purely* causal account of the introduction of the term "elephant," as Deutsch is attempting to do, we cannot appeal to descriptions in the dubber's mind (e.g. "the gray, large, loud thing") that the sample should satisfy. We have no justification that "that" (in the utterance "I dub that an 'elephant'") picks out the exact sample we'd like to be in the extension of the term "elephant." For Deutsch's dissolution to work, and for purely causal reference fixing to be possible, it must be possible for refer-

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[7] In this particular example we are assuming that the dubbing act occurred via an utterance. Of course, speech is not *generally* necessary to dub; a person may dub in written form, for example. However, these contingencies do not impact the overall argument that leads to this problem; there will always be intermediate steps between the cause and the effect in the cases under consideration.

[8] I am grateful to one of the anonymous reviewers for this journal for bringing this issue to my attention.

ence to be grounded exclusively in causal relations; and those causal relations do not determinately provide us with the sample that is picked out by a dubbing utterance.

Having said that, there are properties *of the sample* in question that are causally relevant to the dubbing event, but which should not be part of what grounds the reference of the newly introduced term. For example, spatiotemporal properties of the elephant, such as the fact that it is located in front of Adam and not on the other side of the globe, are causally relevant to the dubbing act; had the elephant not been within a perceivable distance from Adam, the dubbing act would not have occurred. The size of the sample is also causally relevant; had the elephant been microscopic, the dubbing act would not have occurred. However, it does not seem plausible that that individual elephant's size or location within time and space should be part of what determines the reference of "elephant." However we go about restricting the pool of causally relevant properties, there are simply too many of them.

3.4 The Causal Relevance of Intentions

In addition to the fact that causal relevance does not deliver the uniqueness we need in the dubbing case, it is questionable whether [**elephant**] and [**loudness**] are true. Is it true that, had the thing in front of Adam not been an elephant, Adam would not have uttered "I will dub this an 'elephant'"? Maybe, maybe not; this clearly depends on facts about the content of Adam's intentions. For example, we can easily imagine that Adam previously intended to name the next animal he saw "elephant," regardless of what it was. If this were case, the counterfactual would be false; had the object Adam encountered not been an elephant (but, for example, a mouse), Adam would still have dubbed it "elephant" due to his intention to name *a kind of animal* "elephant." Whether or not [**elephant**] and [**loudness**] are the case varies with the intentional states of the dubber.

Additionally, any explanation of why [**elephant**] and [**loudness**] are true requires us to invoke intentional states, unless we wish to say that causal relations are mysteriously brute. As Deutsch himself notes, it is not enough to simply state that there is a cause of the dubbing act; there needs to be a fuller story to account for *why* and *how* one specific property turns out to cause the dubbing act (2023: p. 1813). Deutsch's proposed solution for "filling in" the causal story in the case of dubbing invokes some intentional states, including wanting and trying to dub, for example (2023: pp. 1813-4). However, Deutsch insists that the *content* of these intentions is completely irrelevant to the grounding of the reference of the newly introduced term. In other words, Deutsch argues that the relationship between a dubbing act and a property that caused it is not brute because the dubber has some sort of intention, and we can use facts about the dubber's state to explain why and how this occurs. However, "no particular intentional state or descriptive conception is *required* for securing determinate reference" in a metaphysical sense (2023: p. 1814).

However, it is implausible that the content of the dubber's intention is irrelevant to the grounding of reference. If Adam never intended *to dub* elephants, but simply intended *to hunt* them, no dubbing act would have occurred. The content of these intentions, then, matters not only in an explanatory sense, but in a metaphysical sense: there would not have been a dubbing act without there being an intention *to dub*.

Moreover, even if [**elephant**] and [**loudness**] were true, it can easily be shown that the content of the dubber's intentions is also causally relevant. For the sake of argument, assume that [**elephant**] is true. In this case, it seems as if Adam's mental state is also causally relevant:

Relevance of Intention Had Adam not intended to dub something, then Adam would not have uttered "I will dub this an 'elephant.'".

It is very plausible that a dubbing act would not have occurred had the dubber lacked the intention to dub a thing. If we only have causal relevance to go by, there seems to be no way of excluding intentional states and their descriptive content from the set of causally relevant properties. Consequently, we have no way of excluding them from what grounds reference within Deutsch's framework.

There are several distinct issues for Deutsch's proposed dissolution of the qua problem here. First, the causal relevance of intentional states further severs the analogy between dubbing cases and purely physical cases of causation, since no intentional states need be causally relevant in purely physical cases. Second, the relevance of the dubber's intentional state demonstrates that there is *at least* one other property in addition to the property of being an elephant that is causally relevant to the dubbing event. This means that, once again, there is no unique causally relevant property that would allow for the grounding of determinate reference in purely causal terms. The last difficulty presented by the relevance of intentions is that, once we've seen that causal relevance does not deliver a unique property that would ensure determinate reference, intentional states start looking like the best way out of this problem. If we already grant that intentions are causally relevant to the grounding of reference, why not grant that it is the content of these intentions that metaphysically ensures determinate reference? In other words, why not amend the framework and adopt a hybrid theory?

4 Conclusion

Deutsch argues that reference is grounded in *the* property that is causally relevant to the dubbing act. However, as has been shown here, multiple properties are causally relevant to bringing about a dubbing act. If causal relevance determines what grounds reference, all these properties should somehow determine what "elephant" refers to; but this is unacceptable if we are to honour our most basic assumptions about what "elephant" should refer to.

Nothing like the qua problem arises in purely physical cases of causation because, unlike in reference-grounding scenarios, there is no general need to ensure that a unique cause caused an effect. It is precisely the requirement of uniqueness, which is characteristic of attempts at securing determinate reference, that generates the qua problem for causal theories. Contrary to Deutsch's hopes, causal relevance is insufficient to secure such uniqueness; there is simply too much that is plausibly causally relevant to any given dubbing act. A particular difficulty is presented by the fact that it seems impossible to exclude the content of speaker's intentions from what is causally

relevant to dubbing acts. This leaves Deutsch and other defenders of purely causal theories of reference in a position where they need to find additional causal mechanisms that would, on one hand, exclude intentions and their contents from what grounds reference, and on the other, be sufficient to ensure determinate reference. It is difficult to say what these mechanisms might be. The qua problem for purely causal reference grounding persists.

Declarations

Conflict of Interest The author declares that there is no actual or potential conflict of interest relevant to this article.

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