

## Abstract Objects, Causal Efficacy, and Causal Exclusion

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### 1. Introduction

A distinction is usually made in the philosophy of art between singular and multiple artworks. Singular artworks admit of only one instance, such as paintings and carved sculptures, while multiple artworks allow many instances of a single work, such as works of music, film, and literature. Platonism is a standard way of explaining the repeatability of multiple artworks; a work of music is identified with some abstract object, and specific concrete performances of the work are its tokens or instances.

<sup>1</sup> Platonist accounts of multiple artworks face a number of problems explaining certain intuitive properties of works. For example, it is usually thought that musical works can both be heard, and created and destroyed, but abstract objects are standardly taken to be causally inert, so if musical works are abstract objects some explanation of their creatability and audibility is called for.<sup>2</sup>

Despite the standard metaphysical position that abstract objects are causally inert, Julian Dodd, in the context of his platonist account of musical works as abstract types, attributes causal efficacy to abstracta. Dodd rejects the creation and destruction of musical works, instead taking musical works to be eternal and unchanging types, while arguing that abstract objects must be causally efficacious in order to explain the *audibility* of musical works. Because events are standardly taken to be the *relata* of causal relations, in order to show that abstract objects are causally efficacious, Dodd must show that they can participate in events. For Dodd, the causal efficacy of abstracta is explained derivatively by the participation of their *instantiations* in events (2007, 13-16). However, it isn't clear how an abstract object – an entity usually thought to be located outside of space and time – could be causally efficacious *in virtue* of its concrete instances participating in events. In fact, one standard way of making the

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<sup>1</sup> For example, see Levinson (1990), Kivy (1987), and Dodd (2007).

<sup>2</sup> See, for example, Caplan and Matheson (2004), Davies (2009), Kania (2012), Rossberg (2012), and Thomasson (1999).

abstract/concrete distinction is taking causal inertness, along with lack of spatiotemporal location, to be a necessary condition for an entity's abstractness.<sup>3</sup> However, little more is usually said about why abstract objects cannot be causally efficacious beyond vague claims that non-spatial entities cannot exert causal powers. While abstract objects are standardly taken to be causally inert, often by definition, few arguments are given for this supposition. My aim in this paper is to provide a *principled* argument for their causal inertness. Dodd's position is both interesting and instructive because he is one of the few philosophers who explicitly argue *for* the causal efficacy of abstracta, and so I take his position as my point of departure.

It should be noted that by arguing that abstract objects aren't causally efficacious, I am neither endorsing nor eschewing an ontological commitment to abstracta. Rather, I'm asking whether, if *posited*, abstracta are causally inert or causally efficacious. My understanding of the notion of an abstract object is quite liberal, including such variegated entities as sets, numbers, musical works, fictional characters, literary works, classes, kinds, properties, propositions, and types. The reason for this is that if there are abstract objects, then they presumably belong to a single unified ontological category.<sup>4</sup> Thus, any argument for or against the causal efficacy of abstract types should generalize, *mutatis mutandis*, to other cases of abstracta, while the considerations of audibility apply to other putative causal relations.

After introducing Dodd's musical platonism in the next section, I consider – and reject – his arguments for the participation of abstracta in events. There are two main accounts of events, that of Jaegwon Kim and that of Donald Davidson, and Dodd offers respective arguments from each. From there I extend Kim's causal exclusion argument against mental causation to the abstract/concrete distinction. I conclude that the causal contribution of the concrete tokens excludes any causal contribution from the abstract type, and so there is simply no causal work for the abstract type to do, and therefore no reason for abstract objects to be attributed causal efficacy. However, there are several prominent objections to the causal exclusion argument, including Stephen Yablo's notion of "proportionality", Christian List and

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<sup>3</sup> See, for example, Burgess and Rosen (1997, 13-25) and David Lewis (1986, 81-86).

<sup>4</sup> See Dodd (2007, ch. 2) for a discussion of this point.

Peter Menzies' notion of "realization-insensitivity", and Frank Jackson and Philip Pettit's account of "program explanations"; I consider these objections and suggest that they either undermine Dodd's view as much as help it or they support the causal inertness of abstracta. Armed with a principled argument against the causal efficacy of abstracta, I then sketch a way around the initial problem of audibility by analogy with traditional conceptions of universals, and as a result the musical platonist can maintain that musical works are abstract types while accepting the causal inertness of abstracta.

## **2. Dodd's Musical Platonism**

Before turning to Dodd's account of musical works, it would help to clarify the abstract/concrete distinction. As I discuss below, for Dodd an entity is abstract if it is not located in space (2007, 37). With no other criteria this seems to present a necessary but not a sufficient condition for being abstract. On a standard dualist model of the mind there are non-spatial Cartesian souls. However, if these entities exist, they are surely not thought to be abstract. Thus, Dodd's criterion for abstracta is insufficient to actually make the abstract/concrete distinction. David Lewis (1986, 81-86) identifies four 'ways' that the abstract/concrete distinction is traditionally made and Dodd only adopts part of what Lewis calls the "Way of Negation." The four Ways are:

- I. The Way of Example: abstract entities are things like properties, sets, relations, and numbers, while concrete entities are things like rocks, trees, and houses.
- II. The Way of Conflation: the concrete/abstract distinction is just the distinction between individuals and sets or particulars and universals.
- III. The Way of Negation: abstract entities have no spatio-temporal location, nor are they causally efficacious.
- IV. The Way of Abstraction: abstract entities are abstractions from concrete entities that result from subtracting specificity from concrete entities.

Dodd argues that abstract types are eternal, and thus have a temporal location, while using the lack of spatial location as their only distinguishing feature, thereby departing from the Way of Negation. Numbers are the paradigm case of abstract objects, and while we would find it strange to say that the

number two has a spatial location, it seems just as nonsensical to say that the number two can be causally efficacious. John Burgess and Gideon Rosen (1997, 23) take the problem of Cartesian minds to show that the causal inertness criterion is the distinguishing feature of abstracta, and that the Way of Negation is the standard view of abstract objects. Lewis thinks the four Ways conflict with one another,<sup>5</sup> but I believe they provide us with an initial intuitive picture of the abstract/concrete distinction that is sufficiently robust for present purposes. Given that Dodd's criterion for being an abstractum diverges from the standard position codified by Lewis's Way of Negation, the onus is on Dodd to motivate and defend the causal efficacy of abstract objects.

Dodd's aim is to give an account of musical works that explains their repeatability (that they can have many instances) and their audibility (that they can be heard) (2007, 3). Music is a multiple artform because it seems that I can listen to Mozart's *Requiem* in New York while it is simultaneously played in London. Paintings, on the other hand, are the paradigm case of singular artworks: while I can view a copy or a forgery, I can only see the *Mona Lisa* itself if I visit the Louvre. As in the traditional debate over universals, positing some sort of abstract entity seems like a natural way to explain the repeatability of musical works, and attributing causal efficacy neatly explains their audibility. As a result, Dodd takes his position to be the default view for explaining repeatability and audibility (2007, 8). Dodd's position can be summarized as follows: works of music are eternal, unchanging, unstructured, abstract types of sound-sequence events, which are derivatively causally efficacious, but only creatively discoverable, and are just the instantiation conditions for a type's tokens.

For Dodd, a work of music like Mozart's *Requiem* is an abstract type of sound-sequence event. The work, *qua* type, exists eternally, that is, it exists at all times. This entails that Mozart did not *create* the work as we normally conceive of artistic creation. Rather, Mozart creatively *discovered* the particular sound-sequence event-type that is *Requiem* in a similar sense in which Marie Curie discovered radium (2007, 112ff.). Further, that particular sound-sequence event-type is unstructured: it has no spatial or temporal parts. Of course, Dodd allows that tokens of *Requiem* have spatial and temporal parts, but the

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<sup>5</sup> See Lewis (1986, 85).

type itself is unstructured (2007, 48-53). It is also unchanging (modally inflexible): in every possible world where Mozart's *Requiem* exists, it has no different intrinsic properties than it has in the actual world (2007, 53-56).

Types, Dodd argues, are familiar ontological entities. We make reference to types in everyday language. The word-type 'cat' has many tokens, both inscriptions and utterances; there exist polar bears, but each polar bear is a token of the type *the* polar bear. The type itself doesn't exist in space, and this, according to Dodd, is the hallmark of abstract entities (2007, 37): therefore, types are abstracta. Dodd further argues that types are individuated by the conditions an entity must meet in order to be a token of that type, and these conditions are properties (2007, 49). Dodd borrows Wolterstorff's notion of a property-associate to explain type-instantiation and identity. The associate function is an injection from properties to kinds; the identity of the type *K* is determined by *K*'s property-associate *being a k*, so that for an entity to count as a token of *K* that entity must instantiate the property *being a k* (2007, 49, 60). Musical works are norm-types for Dodd, so they allow of correct and incorrect performances. If *K* is a norm-type, then its property-associate is *being a properly formed k if it has features Fa, Fb, Fc . . . Fn*, where the features *Fa . . . Fn* are those features that are normative within the type.<sup>6</sup> Properties are also abstracta for Dodd, since they meet his criterion of lack of spatial location. However, Dodd distinguishes between types and properties on the grounds that properties are intrinsically *of things*, whereas types like *Requiem* are not.<sup>7</sup>

To secure the view that types are eternal (that they exist at all times) Dodd offers the following argument (2007, 60):

- (1) For any type *K* and any time *t*, *K* exists at *t*, if its property-associate, *being a k*, exists at *t*.
- (2) All properties exist at all times.
- (3) Therefore, all types exist at all times.

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<sup>6</sup> This is not Dodd's formulation of the property-associate of norm-kinds. Dodd maintains merely that if *K* is a norm-kind its property-associate is *being a properly formed K* (2007, 49). However, this entails that improperly formed performances do not count as tokens of *K*, so I have reformulated the property-associate.

<sup>7</sup> See Dodd (2007, 42ff.). Wolterstorff, by contrast, takes properties (universals) to be kinds (1970, 235ff.).

Premise (1) is quite plausible given Dodd's account so far. Types are individuated by the conditions their tokens must meet, and those conditions are the type's property-associate. Dodd defends (2) by adopting the following view of properties: "a property *F* exists at *t* if and only if there is some time *t\** such that *t\** is either before, after, or identical with *t*, and at which it is (metaphysically) possible for *F* to be instantiated" (2007, 61). This view is preferable, for Dodd, to David Armstrong's rival account that a property *F* exists at *t* if and only if there is some time *t\** before, after, or identical with *t* at which *F* is instantiated (2007, 62).<sup>8</sup> One's preferred theory of properties depends on one's tolerance for contingently uninstantiated universals.<sup>9</sup> Properties exist at all times, so types exist at all times, and this is necessary if types are to be causally efficacious, since the causal relation *prima facie* requires its *relata* to be in time.<sup>10</sup>

### 3. The Causal Efficacy of Abstract Objects

I noted above that Dodd rejects the creation and destruction of musical works since they exist eternally, and thus are neither creatable nor destructible but are merely *creatively* discoverable. Instead, Dodd argues that abstract types are causally efficacious because they must be audible, since he thinks the work of music *is* the abstract type. For us to hear Mozart's *Requiem* the abstract type must be audible, and therefore be such that it can participate causally in an event so that in hearing a performance of the work, we hear the work itself. Common sense intuitions about works of art support both creation/destruction and audibility, and both are *prima facie* causal relations. It is thus methodologically strange that Dodd argues for the causal efficacy of abstracta only in order to secure the audibility, not the creation and destruction, of musical works.<sup>11</sup>

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<sup>8</sup> See Armstrong (1989, 75-78; 1978, 113).

<sup>9</sup> David Lewis, for example, argues that if there are abstracta, then uninstantiated universals should not be posited, being extremely 'suspect' entities (1986, 83). Notice, however, that on neither account do metaphysically impossible properties like *being a round square* exist, since it isn't possible for them to be instantiated.

<sup>10</sup> See Dodd (2007, 58-59) for further arguments against atemporality.

<sup>11</sup> This is due to Dodd's view of abstracta as eternal, and thus not the sorts of entities that can be created and destroyed, but there remains the question of why we should take the audibility of musical works as a *desideratum*, and not their creation and destruction. See Davies (2009) for discussion.

The conceptual analysis of causation is notoriously thorny. Events, rather than objects, are standardly thought to be the *relata* of causal relations, and thus it isn't objects *per se* that are causally efficacious, but the events that they participate in. For example, 'the throwing of the stone broke the window' involves one event – the throwing of the stone – causing another event – the breaking of the window. In this case the stone, the window, and the person are all objects that participate in these events. One thing is clear from this etiological chain: the objects and the events involved are all uncontentious examples of physical concreta.<sup>12</sup> The onus is on Dodd to offer an account of how an *abstract* object with no spatial location could participate in a *concrete*, spatiotemporally located event, and thereby be causally efficacious. There are two primary approaches to events, that of Jaegwon Kim (1976), and that of Donald Davidson (1969),<sup>13</sup> and Dodd offers respective arguments from Kim's and Davidson's accounts.

Kim's approach takes events as ordered triples of objects, properties, and times. Dodd suggests that there is no conceptual barrier to abstracta being members of an ordered triple of objects, properties, and times if that ordered triple is causally efficacious: "indeed, if, as seems plausible, properties are abstract objects, then Kim himself must accept that *every* event contains an abstract object, namely, a property" (2007, 14-15). This line of reasoning conflates types and tokens. It is clear that concrete tokens of abstract types or concrete instantiations of abstract properties are causally involved in events and Kim is committed to this on his account, but Dodd provides no argument for how properties construed as abstract objects are causally involved in events. Indeed, if the ordered triple is a datable, locatable entity, then it is left quite mysterious how a non-locatable abstract object can be involved in the ordered triple. It is the concrete instantiation of the property that is uncontentiously involved in the event, and thus Dodd hasn't offered any argument for the causal efficacy of abstracta on Kim's account of events.

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<sup>12</sup> See Burgess and Rosen (1997, 25) for discussion.

<sup>13</sup> David Lewis (1986) defends a third account that is sometimes taken to be one of the standard views. On Lewis' account events are properties of space-time regions, where properties are cashed out in terms of sets of possible worlds. Similar considerations apply here as apply to Kim's account. See Dodd (2012) for discussion.

Davidson's theory takes events to be space-time regions which only have spatial and temporal parts that can be described in different ways, which may introduce different objects and properties.<sup>14</sup> From this, Dodd concludes that "the idea that objects count as causes by virtue of *entering into*, or *participating in*, events in a causally relevant way has to be treated metaphorically. Indeed, it seems that all we can say is that an object so participates causally in an event by being *appropriately related* to the said event; and, naturally, just what it is for a candidate relation between an object and an event to count as 'appropriate' is up for grabs" (2007, 15). Dodd suggests that the 'appropriate' relation holds when the object is a type and the event one of its tokens. For example, suppose that a film is screened and a riot ensues. We may say that 'the film caused a riot' (ibid.) and Dodd wants to analyze this as meaning that the film-type caused a riot in virtue of one of its tokens, the screening, causing a riot. As an abstract object, "a work of music, thus construed, can enter into causal relations *derivatively* by virtue of being a type of sound-event: a type whose token events can feature as relata of causal relations" (2007, 16; my italics). Dodd's notion of 'derivative causality' allegedly secures the audibility of musical works as abstract types of sound-sequence events, but it is unclear what derivative causality amounts to.

The idea that an abstract object is causally efficacious *in virtue* of the causal efficacy of its tokens sheds no light on the causal chain under investigation. What does 'derivatively causal' mean? David Davies (2009, 101-105) suggests that the only way to understand Dodd's derivative causation is by attributing causation to types *analogically*, a notion that Dodd borrows from Wolterstorff (2007, 46-47). Analogical predication is a systematic relation between types and tokens that ascribes the same *predicates* to both, but those predicates express different *properties*. That is, to say that the polar bear (-type) has four legs is to say that all correctly formed tokens of the polar bear must have four legs (ibid.). But if this is the sense in which Dodd is attributing causation to types, then it follows that types aren't *literally* causally efficacious (in a substantive metaphysical sense), but only *analogically* causally efficacious, i.e.

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<sup>14</sup> I am generally following Dodd's (2007, 12-16) discussion of Kim's and Davidson's accounts. However, Dodd claims that on Davidson's theory events only consist in temporal durations, and therefore only have times as parts. This can't be right since it has the consequence that anything that happens simultaneously is a single event. Davidson (1969), following Quine, construes events as *space-time* regions.



any token of that type must be causally efficacious. However, Dodd claims that all other predications of musical works are analogical (2007, 83-85). For example, we normally take musical works to have temporal durations and sound-structure (e.g. the second movement of a symphony), but because Dodd maintains that musical works construed as abstract types are unstructured and temporally inflexible, predications of, say, ‘having a long second movement’ to some work *W* must be understood analogically: any correct token-performance of *W* must have the property ‘having a long second movement’. Dodd offers no principled reason for treating attributions of causal efficacy literally while treating all other predications of musical works analogically, but again, if Dodd explains derivative causation by analogical predication then it follows that abstract objects are not, strictly speaking, causally efficacious. While Dodd denies that derivative causation is analogical (2007, 93-94), he offers no further explanation of the derivative causal relation between types and tokens.<sup>15</sup>

The only support offered for this position is that ordinary language allows us to say that films and musical works are causally active in events (2007, 15-16). I will offer a more direct argument against the causal efficacy of abstracta in the next section, but for the moment I want to consider the linguistic data to which Dodd appeals. Consider the sentences

(1) The film caused a riot

(2) Mozart’s *Requiem* made me cry

If works of music and film are abstract types, as Dodd supposes, then these sentences assert that the *Requiem*-type made me cry, and that the film-type caused the riot. Furthermore, Dodd thinks that it is in virtue of their tokens making me cry and causing riots that these types are causally efficacious. Dodd is right that ordinary language allows us to speak of films and musical works as causing things, but from the fact that we *talk* a certain way, it does not follow that things *are* that way. Dodd appears to be relying on a naïve strategy of ‘reading-off’ ontological conclusions from ordinary language, but it isn’t at all clear that things are this straightforward. In developing a theory of universals, Wolterstorff considers whether they can act and offers the following seven sentences (1970, 171; I have numbered them):

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<sup>15</sup> See Davies (2009) for further discussion.

- (3) Immortality has fascinated some and repelled others.
- (4) The predetermined salvation of the elect has depressed many but elated others.
- (5) Poverty often leads to warping of character.
- (6) Envy caused his lashing out at Peter.
- (7) Obesity caused his death.
- (8) Darkness, and with it quietness, descended [*sic*] upon the camp.
- (9) Death eventually overtakes all men.

With respect to (3) and (4) Wolterstorff argues that the verbs ‘to fascinate’, ‘to repel’, and ‘to depress’ do not represent genuine *actions* because immortality, say, is not performing the act of fascinating or repelling someone. Rather, something can fascinate me without that thing performing the act of fascinating me, so it isn’t clear that what is predicated is a genuine action. With respect to (5), (6), and (7) Wolterstorff remarks that in each case where it appears that an action (that is, an attribution of causal efficacy) is predicated, the predication of causal efficacy is attributed to the abstract object’s *instances*. Thus, the instances are doing all the causal work. Wolterstorff treats (8) and (9) as metaphorical, and thereby not genuine predications of an action to an abstract object. That is, darkness and quietness do not literally descend, and neither does death literally overtake people (1970, 172). Therefore, these seven examples divide into three subgroups all of which can be treated in such a way that the abstract object referred to does not do any causal work. The cases of (1) and (2) can be treated the same as (5)-(7); clearly the tokens of the film and of *Requiem* can cause a riot and cause me to cry, but it isn’t clear in what way the types can. The standard position is that abstracta are causally inert, and Dodd has offered no good arguments against this claim.

#### **4. The Causal Exclusion Argument**

I remarked above that Dodd supports his account of the derivative causation of abstract objects by arguing that abstracta can participate in events in a causally relevant way in virtue of their concrete tokens participating in events. The main argument for this position is that ordinary language allows us to make such putative claims. Wolterstorff’s treatment of (5)-(7) gestures toward a more principled argument

against the causal efficacy of abstracta, namely that if the concrete tokens do all the causal work, then there is no explanatory motivation for attributing causal efficacy to the abstract type. This is a more general case of the causal exclusion argument. The causal exclusion argument has been most fully developed and defended by Jaegwon Kim (1993, 1998) as an argument against mental causation. The problem is that, given an account of the mental by a supervenience relation (and multiple realizability) on the physical, it appears that for any action *R* there is both a mental and a physical cause each sufficient for producing *R*. That is, suppose *R* is my action of taking a sip of water from the glass on my desk. It could be said that one cause of *R* is that I'm thirsty and I have a desire for water. Another cause is a complex but complete neurophysiological story explaining the movements of my muscles that originated from some neuronal firings in my brain. Both the mental cause and the physical cause are sufficient causal explanations of *R*. Kim remarks that to accept the mental cause while denying the physical cause violates the principle of the causal closure of the physical domain, while accepting both the mental and physical causes begs the question of what the causal work done by the mental *is*. (1998, 37) Kim concludes that the physical cause excludes the mental from causally contributing to the production of *R*.

Kim identifies six available responses to this problem (1998, 64-65):

- (a) Each is a sufficient cause and the effect is causally overdetermined.
- (b) They are each necessary and are jointly a sufficient cause (each is a partial cause).
- (c) One is part of the other.
- (d) The causes are the same but given under different descriptions.
- (e) One is in some appropriate sense reducible to the other.
- (f) One is a derivative cause with its causal status dependent in some sense on the physical cause.

Kim uses the causal exclusion argument to argue for a reductive materialist account of the mind – option (e). That is, from the premises that the physical does all the causal work, and that the mental doesn't contribute anything to causal explanations of actions, Kim concludes that the mind is physical, since positing a separate supervenient mental entity would be causally and explanatorily redundant.

The causal exclusion argument easily generalizes to the problem of the causal efficacy of abstracta. In its most general formulation, the causal exclusion argument is an argument from parsimony.

If all causal work is done by some kind of entity X, then there is no causal work for some other kind of entity Y to do, and thus no explanatory motivation for attributing causal efficacy to Y, so in order to have the simplest metaphysical theory, Y should be taken to be causally inert. Consider the audibility of Mozart's *Requiem*. On Dodd's account both the sound-event type and the sound-event token are causally efficacious. This entails that my hearing of Mozart's *Requiem* is caused by both the type and the token, analogous to Kim's mental and physical causes, respectively. In principle, we can give a complete physiological description of my hearing of the sound-sequence that is *Requiem*, but if we also posit a causal role for the type, it isn't clear what this contributes to the production of the event that is my hearing of the sound-sequence. As a result, the concrete token of the musical work (or film) excludes the causal contribution of the type.

There seems to be little motivation for (a), since causal overdetermination is explanatorily redundant and thus *prima facie* objectionable in the case of abstract objects (and mental causation). However, it is possible to imagine some rather quotidian scenarios that seem to present cases of causal overdetermination. For example, the standard case of two people who both simultaneously shoot a man and their respective bullets pierce his heart at the exact same moment. It would seem that either bullet was sufficient to cause his death, and thus his death was causally overdetermined. Could Dodd claim that the audibility of a musical work is causally overdetermined by the abstract type and its concrete tokens? In addition to being explanatorily redundant and thus running afoul of demands for parsimony, there is an important disanalogy between the bullet case and the cases of mental or abstract causation. The former case involves two wholly independent concrete physical causes, while the latter cases involve two dependent causes of different kinds – the mental and the physical, and the abstract and the concrete, respectively.<sup>16</sup> In the bullet case, because both causes are concrete events, they are uncontentious examples of causally efficacious entities. While we may be willing to admit overdetermination in cases where the causes are independent by attributing the overdetermination to coincidence or happenstance,

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<sup>16</sup> By dependence I mean that there would be no mental causation without a physical realizer and likewise no auditory experience of a work-type without a concrete token.

the problem of causal exclusion cannot be avoided with respect to distinct *dependent* causes in this way (Kim 1998, 52-53).<sup>17</sup> In the case of mental causation the causal work is exhausted by the physical, so it seems gratuitous to posit a causal role for the mental,<sup>18</sup> while in the case of abstract causation, the causal work appears to be exhausted by the concrete tokens. The onus is on Dodd to defend the overdetermination of the audibility of a work of music. If my hearing of Mozart's *Requiem* is causally exhausted by an explanation of the physiological structure of the human auditory capacity and the behavior of sound waves, then there is nothing left for the abstract type to do. At this point Dodd could argue that the above considerations don't address the problem: if the work of music is identified with the type, then how do we ever hear the work of music (as common sense suggests we do) unless the type itself is audible? But consider what it is to hear a performance of a work; we hear the various instruments, the various movements and parts, and the various notes that comprise those parts as played by those instruments, of a work *W*, as we listen to the duration of the performance. Is there anything left to *hear* that is identifiable as the work when we say we listened to a performance of a work of music? I cannot see what causal work is to be done by attributing causal efficacy to the abstract type. To hear a performance of a work *W* is to hear *W*. I discuss the problem of audibility, and this response to it, further in the final section.

One might ask, as Ted Sider (2003) does, what the problem with overdetermination really amounts to. Addressing an argument by Trenton Merricks (2001) against the existence of non-living macroscopic objects that relies on the rejection of overdetermination, Sider (2003, 721-3) identifies three potential objections motivating the rejection. The metaphysical objection claims that overdetermination is metaphysically incoherent by appeal to a view of causation as a kind of 'juice' that is used up when a potential cause acts to bring about an effect. But as Sider points out, no one holds this view of causation, and there is nothing obviously incoherent about overdetermination. The coincidence objection argues that *systematic* overdetermination would involve a massive, unexplained coincidence between the multiple

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<sup>17</sup> See also Sider (2003).

<sup>18</sup> I am merely reconstructing Kim's argument here, rather than endorsing its conclusion.

putative causes – mental and physical state, type and token, baseball and baseball parts,<sup>19</sup> or what have you.<sup>20</sup> But as I argued above, these are cases of dependent putative causes which cannot be explained by coincidence. Indeed, it isn't a coincidence but a metaphysically necessary truth that a baseball shattering a window in some sense involves the parts of the baseball or that hearing a token performance of a work in some sense involves the abstract type. After rejecting the metaphysical and coincidence objections, Sider considers the epistemic objection, which argues that there is no *reason* to believe in overdetermining entities, and thus by appeal to parsimony only entities sufficient for explaining the effect should be posited. Sider accepts the epistemic objection as reasonable, but recognizes that, as an appeal to theoretical virtue, it has limited force against the existence of causally redundant entities (2003, 724). But the epistemic objection is just what I have been arguing; there is no reason to attribute causal efficacy to abstract objects because all the causal work is done by concreta.

Here it is important to distinguish my argumentative strategy from that of Kim and Merricks. Kim uses the causal exclusion argument and the threat of overdetermination to eliminate mental properties by reductively identifying the mental with the neurological, while Merricks uses a similar argument to eliminate non-living macroscopic objects like baseballs and rocks, arguing that there exist only atomic simples and living organisms.<sup>21</sup> My use of the causal exclusion argument and the threat of overdetermination is only aimed at rejecting the causal efficacy of abstracta by appeal to parsimony. This is not an argument against the existence of abstract objects because there is genuine, non-causal explanatory work that they do, namely explaining repeatability, and thus there are reasons to posit abstracta. Rather, I'm arguing that there are no reasons for positing their causal efficacy, since there is no causal work for them to do.

So much for overdetermination. Given that the concrete token can fully explain the causal process of hearing a work of music, (b) is false. The physical explanation from the concrete token is alone

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<sup>19</sup> This is Merricks' (2001) favourite example.

<sup>20</sup> It is important that the coincidence be systematic and widespread since rare cases of overdetermination may occur, like the two bullets case. See Sider (2003, 722).

<sup>21</sup> Merricks (2001) argues that composition only occurs when there is a living organism. In all other cases composition never occurs.

sufficient to explain audibility, so the causal efficacy of the type is unnecessary. The options presented in (c), (d), and (e) don't seem to be applicable to the case of abstracta. In the case of (c) Kim doesn't elaborate on what he means by 'part', but Dodd views abstract types as unstructured, so the token can't be a part of the type. However, because the abstract type has no spatial location (by definition) it can't be a part of the token. Dodd is similarly precluded from taking the line presented in (d) because he makes an ontological distinction between types and tokens (or abstracta and concreta). He cannot then say that the token-as-cause is identical to, but differently described from, the type-as-cause. Likewise, by making an ontological distinction between types and tokens, Dodd cannot claim along with (e) that types are reducible to tokens (this implies nominalism) or that tokens are reducible to types (this implies idealism). The options in (a)-(e) are therefore unavailable to Dodd.

This leaves (f), and Dodd takes this line with respect to abstract types and their tokens. But as I discussed in the previous section, the notion of derivative causation is unclear, and what arguments Dodd has for it fail. Dodd's account of the causal efficacy of abstract types is therefore subject to the causal exclusion argument. There is simply no causal work for the abstract type to contribute to the audibility of a musical work, so abstracta should be taken to be causally inert.

### **5. Objections to the Causal Exclusion Argument**

There are, however, several well-known objections to the causal exclusion argument as it pertains to mental causation, for example Stephen Yablo (2007), Christian List and Peter Menzies (2009) and Frank Jackson and Philip Pettit (1990), and these may be adapted to try to secure the causal efficacy of abstracta. Someone who endorsed Yablo's (2007) notion of "proportionality" could support the causal efficacy of abstracta by arguing that in some cases the abstract type may be a more proportional cause than the concrete token.<sup>22</sup> It is worth exploring this possibility, as well as the related accounts of List and

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<sup>22</sup> See also Bennett (2003) and Woodward (2015). I don't have space to address every argument against causal exclusion, but the three I canvass are some of the most prominent, so showing that they may support the causal exclusion of abstracta is an important step towards securing that conclusion.

Menzies (2009) and Jackson and Pettit (1990) and seeing whether they undermine the causal inertness of abstracta.

Yablo argues that the causal exclusion argument fails to undermine the causal efficacy of mental events,<sup>23</sup> if the latter are understood as supervening on the physical, because mental events and their physical realizers stand in a determinable/determinate relation and determinates cannot usurp the causal role of their determinables. The determinate/determinable relation holds between both properties and events. For example, *crimson* is a determinate of the determinable *red*, *rectangularity* is a determinate of the determinable *spatially extended*, while *my slamming the door* is a determinate of the determinable event of me *shutting it*. The determinate necessitates the existence of the determinable – the former is a more particularized case of the latter – so if something is crimson it is necessarily red, while something may be red without being crimson (because it is some other shade of red), while red is itself a determinate of being *coloured*.

Yablo (2007, 230-1) argues that the causal exclusion argument delivers unwanted results in cases involving the determination relation. He provides the following example: a pigeon has been trained to peck at red things to the exclusion of all other colours, and a red piece of paper is presented to the pigeon and it pecks. However, imagine that the piece of paper is a particular shade of crimson; it being crimson is causally sufficient for the pigeon's pecking. The causal exclusion principle suggests that the redness of the paper is causally irrelevant to the peck because all causal work is done by the paper being crimson, so the redness contributes nothing to the effect. Clearly something is wrong here, since red seems to be a paradigmatic case of a causally efficacious property. If we were to say that crimson was the cause of the pigeon's peck as opposed to its redness, this would suggest that if the paper was some other non-crimson shade of red the pigeon would not have pecked, but this isn't the case since the pigeon would peck at red things regardless of the shade.

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<sup>23</sup> Yablo shows that the principles he appeals to can be cast in terms of properties or events, so I will use them interchangeably.



Yablo (2007, 242) distinguishes between *causal relevance/sufficiency* and *causation* (or *causal efficacy*). His diagnosis of the above problem is that determinates and determinables do not compete for causal relevance and sufficiency, but they do compete for the role of cause (ibid.). X may be causally relevant to Z, but this doesn't entail that X is sufficient for Z, while Y may be sufficient for Z but Y may include a large amount of causally irrelevant detail. Causation, on the other hand, is commensurate or proportional between cause and effect. That is, causes should include a good amount of detail relevant to their effects, but not too much that is unimportant. Between two alternative putative causes, the more proportional alternative wins the role of cause. In the pigeon case, crimson is causally sufficient for the peck, but is too specific, the paper being coloured is causally relevant to the peck but is not sufficient for it, while the paper being red is just right between sufficiency and relevance, and is thus the cause of the peck.<sup>24</sup>

Yablo's proportionality requirement consists in causes satisfying four conditions (Yablo 2007, 242-4). First, effects are *contingent* on their causes:

(C) If x had not occurred, then y would not have occurred either

Second, causes are *adequate* for their effects:

(A) If x had not occurred, then if it had occurred, y would have occurred as well

Third, causes are *required* for their effects:

(R) For all x' that is determined by x, if x' had occurred without x, then y would not have occurred

Finally, causes are *enough* for their effects if and only if nothing more than x was required for y:

(E) For all x' that determines x, x' was not required for y

When all four conditions are met x is said to be proportional to y. In the pigeon case, the paper being crimson violates (R): in the closest possible world where the paper is red without being crimson (it's some other shade of red) the pigeon still pecks. The paper being crimson isn't *required* for the pigeon to peck. Conversely, the peck isn't *contingent* on the paper being crimson for similar reasons, so (C) is also

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<sup>24</sup> In the case of mental causation Yablo suggests that mental phenomena are frequently the more proportional cause than their physical realizers.

violated. The paper being red satisfies all four conditions, particularly (R) and (E): the redness was required for the pigeon to peck (because it was trained to peck red things) and the redness was enough for the pecking because nothing more (like being crimson) was required. Yablo's claim is that the causal exclusion principle doesn't hold in all cases, particularly those involving the determinate/determinable relationship.

While the type/token relation isn't an instance of the *determination* relation, there is at least an asymmetric *necessitation* relation between them: if a concrete token *k* exists, then the type *K* exists, however, if the type *K* exists, it may not have any tokens, since it may be contingently untokened. But by Dodd's derivative causation one hears the type if and only if one hears the token.<sup>25</sup> There are a variety of paradigmatic causal relations where it might be claimed that the type is a more proportional cause than the token: hearing (music), seeing (film), crying (from hearing *Requiem*), and rioting (from seeing a film screening), to name a few. Consider the following example: a professionally trained musician listens to a performance of Mozart's *Requiem* that displays great virtuosity and the musician cries as a result. To avoid the causal exclusion argument, Dodd must say that hearing the type is the more proportional cause of the crying than hearing the token.

Let *S* be the professionally trained musician, *x* be hearing the token, *x'* be hearing the type, and *y* be *S*'s crying. (C) is satisfied by *x'* since if hearing the type didn't occur neither would hearing the token, and thus the crying would not have occurred. (R) is also satisfied by *x'* because one hears the token if and only if one hears the type, so if *x'* doesn't occur, neither does *x*. That is, the following conditional is always true because it has a necessarily false antecedent: if *x'* occurs without *x*, then *y* would not occur. Thus, hearing the type is required for the crying. But *x'* doesn't satisfy (E) because in the closest relevantly similar possible worlds where *x'* occurs and some other token is heard, call it *x\**, but *x* doesn't occur, *y* doesn't occur either. Why? Because not all tokens of the type will cause *S* to cry. Repeatable

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<sup>25</sup> Dodd's support for this claim rests entirely on an analogy with Quine's notion of 'deferred ostension' (Dodd 2007, 11-16; see also Thomasson 1999 and Wetzel 2009), where we refer to a type by pointing to one of its tokens. There is an important disanalogy here: reference is unique, so any particular act of referring will either be to the type or the token, but never both, whereas Dodd wants to say that we hear a type every time we hear a token.

artworks are norm-types: they admit of correct and incorrect tokens, and their tokens can vary in their properties, e.g. virtuosity, intensity, instrumentation and timbre, score-interpretation, duration, loudness, pitch etc. differ from token to token. Those token performances that display less virtuosity on the violins or those that are performed badly (perhaps the musicians are amateurs), or if *Requiem* is heard over the radio, will not cause S to cry. Yet x' occurs in all those cases, but y doesn't occur. The occurrence of x' isn't *enough* for y because y depends on the occurrence of x specifically, i.e. *that* particular token performance of *Requiem*. More accurately, y depends on the occurrence of a certain subset of the type's tokens, namely those that are relevantly similar such that they will cause the effect to occur; in this case those tokens that display a sufficient level of virtuosity.

Hearing just any performance of *Requiem* isn't enough for the crying. Particularly poor performances, performances that are played too quietly, tokens that are not heard live,<sup>26</sup> performances without the same level of virtuosity or intensity, are not enough for the crying yet the type is still heard. Therefore, hearing the type, and thereby hearing *some* token, doesn't satisfy (E) because even if x' (hearing the type) did occur via some token, y (the crying) may not occur and so hearing the type isn't proportional to the crying.<sup>27</sup> On the other hand, hearing the particular token satisfies all four conditions: the crying is contingent on hearing the token, hearing the token is adequate for the crying, hearing the token is required for the crying, and hearing the token is enough for the crying. As a result, hearing the concrete token is the proportional cause of the crying.

But this only shows that the token is the proportional cause in this particular case. It doesn't appear to rule out all cases of proportional type-causation. In the case where the particular *Requiem*-token causes the crying, the crying is a very "fragile" event, but there may be some effects that will occur regardless of how the type is instantiated. For example, someone may cry from hearing *any* token of

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<sup>26</sup> These are still tokens of the work, just not performance tokens.

<sup>27</sup> Note that where x'=hearing the type, this must be substituted for all instances of 'x' in Yablo's formulation of (E), and similarly where x=hearing the token, this must be substituted for x' in (E).

*Requiem*. In such cases it can be argued that the type is the proportional cause and thus on Yablo's account there is room for type-causation, thus blocking the exclusion conclusion.<sup>28</sup>

The motivation behind Yablo's (2007, 242) account of proportionality is the dictum that causes should make a difference to their effects – the paper being crimson made no difference to the pigeon's peck, whereas the paper being red (whatever the shade) did. In a recent article, Christian List and Peter Menzies (2009) develop a response to the causal exclusion argument that takes causation to be 'difference making' without appeal to the determination relation.<sup>29</sup> List and Menzies argue that the causal exclusion principle depends on how we understand causation. Kim assumes a 'production' account of causation without developing such a view,<sup>30</sup> but if we understand causation as difference-making as Yablo does, then the causal exclusion argument can be resisted in some cases. List and Menzies formulate difference-making in terms of properties as:

The presence of *F* makes a difference to the presence of *G* in the actual world if and only if it is true in the actual world that (i) if *F* is present, then *G* is present; and (ii) if *F* is absent, then *G* is absent (2009, 483).

In Yablo's pigeon case the paper being red satisfies (i) and (ii) while the paper being crimson satisfies (i) but not (ii) since the paper may be some other non-crimson shade of red and the peck still occurs. With respect to mental causation, List and Menzies argue that the mental state or property makes a difference to the effect, but its underlying physical realizer does not (or not always). That is, List and Menzies argue that the mental state is involved in *realization-insensitive* causal relations. In many cases of putative mental causation, the effect will occur *regardless* of how the mental state or property is realized. For example, feeling a pain in my foot will cause me to wince regardless of whether the pain state is realized in one collection of C-fibers over another. Thus, the particular physical realizer of the pain state doesn't make a difference to the wince – the wince would occur no matter how the pain state is realized.

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<sup>28</sup> Note that it can't be claimed that for some effect *e*, *both* the type and token are the proportional causes of *e* because this would reintroduce overdetermination.

<sup>29</sup> Thanks to an anonymous referee for suggesting the relevance of List and Menzies' account here.

<sup>30</sup> See List and Menzies (2009, 489).

This suggests a further response to the causal exclusion argument, in addition to Kim's list (a) to (f), that Dodd could adopt:

(g) Abstract objects are involved in realization-insensitive causal relations, where causation is understood as difference-making.

This response doesn't work in the *Requiem* case, above, because the abstract type is involved in realization-*sensitive* causal relations. That is, the effect depends on (it's sensitive to) how the abstract type is tokened; hearing just any token of the type is not enough to bring about the crying – only tokens that display a certain measure of virtuosity will produce the crying. Understood in terms of events, hearing the type satisfies condition (ii) since if one doesn't hear the type, then one doesn't hear the token, so the crying doesn't occur, but not condition (i) since hearing the type via some tokens may occur without the occurrence of the crying. On the other hand, hearing the particular token satisfies both (i) and (ii).

But again, this response only works in this particular case of crying, because it is an extremely “fragile” event due to its realization-sensitivity. There are some causal relations which are realization-insensitive, so how the type is tokened doesn't matter, the effect will occur regardless. On both Yablo's and List and Menzies' accounts, where the causal relations are realization-sensitive the token is alone proportional to the effect, but where the causal relations are realization-insensitive the type will be the proportional cause. We thus need to distinguish two kinds of cases involving crying (for example):

(A) Cases in which the particular token of the musical work makes me cry, and

(B) Cases in which the musical work-type itself (so to speak) makes me cry, irrespective of the nature of its token.

In cases of type (A) the causal exclusion argument goes through because the token is the proportional cause of the crying (it's realization-sensitive), but in cases of type (B) the *Requiem*-type (or whatever the type is) will be the proportional cause and the causal exclusion argument will fail. The abstract type is successfully excluded from causal contributions in (A) cases, but not in (B) cases. As a result, if Dodd adopts Yablo's notion of proportionality or List's and Menzies' realization-insensitivity – both of which are motivated by the difference-making view of causation – then the causal exclusion argument can be resisted in some cases, and thus there is room for the causal efficacy of abstract types. Blocking this

conclusion requires denying the difference-making principle of causation, which is, unfortunately, beyond the scope of this paper. Therefore, Dodd can plausibly resist the causal exclusion argument, but it requires adopting the difference-making principle of causation, and this only holds in the (B) cases; cases of the (A) kind still identify the concrete token as the cause. Dodd's view isn't completely safe, since he wishes to say that the abstract type is *always* causally efficacious when it's tokened, so that we hear the musical work (the abstract type) whenever we hear one of its tokens.

Despite the difference-making counterargument to causal exclusion, there are alternative responses to causal exclusion that don't deliver the same result in the abstract/concrete case. That is, we can say that the abstract type still plays a role in explanations without being causally efficacious because, as Frank Jackson and Philip Pettit (1990) have argued, the type can be causally *relevant* to an effect without being causally *efficacious* in the production of that effect.<sup>31</sup> Jackson and Pettit have developed what they call 'program explanations', which, like Yablo, allows them to distinguish between causal relevance and efficacy. They argue that causal efficacy is not the only way of being causally relevant – some properties are causally relevant in virtue of 'programming'<sup>32</sup> the presence of the causally efficacious property, but are not themselves causally efficacious.

Program explanations can be used in putative cases of mental causation to ensure an explanatory role for mental states or properties without attributions of causal efficacy, and thus provide genuine explanatory motivations for positing mental entities. The mental property ensures the existence of a causally efficacious physical property, but the mental property, while causally relevant, is not itself causally efficacious. Jackson and Pettit give the following example to illustrate program explanations: "I try and fail to fit a square peg in a round hole of diameter equal to the side of the square. Why did it not go through? First answer: because of the squareness of the peg. Second answer: because of the impenetrability of this overlapping part of the peg" (Jackson and Pettit 1990, 110). The overlap-impenetrability is sufficient for the blocking, so it would seem to preempt or exclude the causal efficacy

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<sup>31</sup> Thanks to an anonymous referee for suggesting the relevance of Jackson and Pettit's account here.

<sup>32</sup> The analogy is with computer programs: programs ensure that certain things occur, but the occurrence of those things is produced at a lower, mechanical level (Jackson and Pettit 1990, 114).

of the squareness. Instead of rejecting the causal relevance of the squareness, we can say that while the impenetrability was causally efficacious in producing the blocking, the squareness of the peg was causally relevant for the effect by ‘programming’ for the presence of that impenetrable part of the peg: “the squareness of the (impenetrable) peg ensures, as a matter of elementary geometry, that there will be an impenetrable part of the square end to obstruct its passage through the hole and again it may be this part or that which provides the obstruction” (Jackson and Pettit 1990, 115). Thus, we can give two kinds of explanations: ‘process’ explanations, which provide causally efficacious properties and ‘program’ explanations which provide causally relevant properties. The latter ensure the existence of the causally efficacious properties involved in the causal process, and are thus relevant to the occurrence of the effect while being causally inert.<sup>33</sup>

In the case of abstracta, we can say that the abstract type programs for the presence of the concrete token. The existence of the type allows for the existence of tokens which are involved in causal processes in virtue of the asymmetric dependence of tokens on types. While the type isn’t causally *efficacious*, it is causally *relevant* for the presence of the causally efficacious token in producing the effect. With respect to the problem of audibility, the type is causally relevant in hearing the work because it programs for the existence of concrete tokens that can be heard. We can account for the role of the abstract type in explanations (crying when hearing a performance of *Requiem*, for example) while maintaining that the type is causally inert.<sup>34</sup> Program explanations apply to both (A) and (B) type cases, since the abstract type programs for the presence of the concrete tokens regardless of whether the causal relations are realization-sensitive or -insensitive. That is, the distinction between the (A) and (B) cases doesn’t need to be made on the Jackson and Pettit account, since they aren’t committed to causation as difference-making.<sup>35</sup> Therefore, Jackson and Pettit’s response to causal exclusion can be used in the

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<sup>33</sup> Again, talk of ‘properties’ here can be replaced by talk of events.

<sup>34</sup> Jackson and Pettit’s program explanations seem to be what we would call in neo-Aristotelian terms a *formal* cause. Dodd can take this route, so long as he recognizes that I am arguing that types cannot be what Aristotle calls *efficient* causes. However, I think the explanation given by the squareness of the peg and the abstract type is better understood as non-causal explanation in the programming sense.

<sup>35</sup> Although they may happen to accept the difference-making principle.

abstract/concrete case to support the causal inertness of abstracta without denying their explanatory role in causal production. While this is far from giving an argument against the difference-making principle adopted by Yablo and List and Menzies, it does show that their approaches don't foreclose on the causal exclusion argument against Dodd.

That is, Yablo and List and Menzies adopt the difference-making principle of causation in order to respond to the causal exclusion argument, while Jackson and Pettit distinguish between causal relevance and causal efficacy in order to do the same. Dodd can avail himself of either response in order to secure the role of the abstract type in causal explanations. However, given that Dodd's aim is to account for our intuitions that we hear both the musical work itself and the same work of music when listening to different performances, the Yablo and List and Menzies' response to my causal exclusion argument is inferior since it only allows Dodd to say that we hear the musical work in (B) cases. In those cases where the effect is realization-sensitive, we only hear the token, not the type, which doesn't allow Dodd to say that we all hear the same musical work when we hear one of its performances. By contrast, Jackson and Pettit's program explanations offer a more general response to the causal exclusion argument: the abstract type is always causally relevant for explaining how an effect was produced in virtue of its programming role. That is, if Dodd adopts Jackson and Pettit's response to causal exclusion, he can say that the abstract type programs for the presence of every token-performance, in virtue of which we all hear the same thing – I discuss this further in the next section – but program explanations maintain that the abstract type is causally *inert*. Again, Jackson and Pettit's account doesn't show that difference-making responses are false, but rather it provides an alternative response to the causal exclusion argument that would let Dodd account for his *desideratum* without attributing causal efficacy to abstracta.

Yablo's notion of proportionality and List and Menzies' realization-insensitivity can be adapted to partially block the causal exclusion of abstracta by concreta. However, the difference-making principle which underlies their respective accounts only blocks causal exclusion in those cases where the causal relations are realization-insensitive, and thus the type is the proportional cause. But in those cases where the causal relations are realization-sensitive the token is the proportional cause, while the type makes no



difference to the effect. Nevertheless, Yablo's and List and Menzies' difference-making accounts are not the only options on the market; Jackson and Pettit's program explanations can answer the causal exclusion argument by maintaining the causal relevance of the abstract type while only attributing causal efficacy to the concrete token. Jackson and Pettit's distinction between causal relevance and sufficiency, and thus between program and process explanations, enables us to give a unified account of causal relations putatively involving abstracta, so no separate explanations are required between the sensitive and insensitive cases. While this is far from a knockdown argument against the difference-making response to causal exclusion, it is a point in favour of the Jackson and Pettit alternative. Nonetheless, much more needs to be said on responses to causal exclusion in the abstract/concrete case. Despite this, assuming that concreta exclude the causal contributions of abstracta, I suggest in the next section how Dodd can get around the initial problem of audibility that causal inertness generates for his musical platonism.

### **6. Causal Inertness and Audibility**

Assuming that abstracta should be taken to be causally inert in the face of the causal exclusion problem, Dodd faces the initial problem of the audibility of musical works. I want to sketch a solution to the problem of audibility available to the musical platonist by considering analogous problems in the case of universals. The upshot of these considerations is that musical works can both be heard and thought of as abstract types while maintaining the causal inertness of abstracta.

The problem that Dodd began with is if musical works are abstract types, then we cannot hear them unless they are causally efficacious. If they are not audible, then when we hear a performance of a work we have not actually heard the work itself. If I go to a performance of Mozart's *Requiem*, then I must say that I have never *heard* Mozart's *Requiem*, but only performances of it. This seems intuitively implausible, and the musical platonist need not accept it. The problem is with the first premise. One can view musical works, with Dodd, as abstract types, but not be committed to their causal efficacy while still maintaining that attending a performance of *Requiem* entails hearing *Requiem*. If the problem of the

audibility of abstract types is thought of analogously to standard accounts of universals, then problems of causal inertness dissolve.

Armstrong conceives of instantiation as a primitive. The instantiation of a universal is just that universals participate in states of affairs. For Armstrong (1989, 88), a particular *a* having a property *F* is a state of affairs and instantiation is just *a being F*. Similarly, for Wolterstorff (1970, 90-91) the instantiation of a universal is just for there *to be a case of that universal*. In debates over the nature of universals it is rarely argued that the universal *redness*, say, must be causally efficacious for us to experience redness.<sup>36</sup> Rather, we experience redness by seeing something red. Experiencing an abstract object *just is* to experience one of its instances; attributing causal efficacy to abstracta is unnecessary. Because abstracta are presumably a single unified ontological category, what holds for universals holds for abstract types as well. Dodd's argument for the causal efficacy of abstract types is therefore unmotivated. Like redness, we hear a musical work by hearing one of its tokens *simpliciter*.

The instantiation relation is not a causal relation. It isn't the case that there is an abstract object that then *causes* its tokens. On Dodd's account a type *K* exists if the conditions that its tokens must meet exist, and these conditions are just the type's property-associate. The type *K*'s property-associate is *being a k*. For a type to be instantiated on this account is just for there to be an entity *b* that *is a k*, so to experience the type *K* is to experience *b being a k*:<sup>37</sup>

Abstract type *K*  $\rightarrow_{\text{inst}}$  Instantiation of *K*: *b is a k*  $\rightarrow_{\text{caus}}$  Audible experience of *b being a k* by listener *S*

Only the second arrow denotes a causal relation in this sequence. The first arrow is the determination<sup>38</sup> by the abstract type of the conditions that *b* must meet in order to be an instance of *K*. The second arrow is the causal relation between the instance of *K* and *S*'s hearing of that instance. For *S* to hear a musical

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<sup>36</sup> Armstrong (1978 vol I, 126-132) argues that universals cannot be transcendent because we could not have knowledge of them, so instead he places them in the spatio-temporal and causal order, which, by the Way of Negation, entails that they are not abstract.

<sup>37</sup> Again, where *K* is a norm-type, the property-associate is *being a properly formed K if it has features Fa, Fb, Fc . . . Fn*. This doesn't pose a problem since both properly and improperly formed tokens of *K* will have the requisite property-associate.

<sup>38</sup> Where "determination" here is meant as a general necessitation relation.

work *K* is just for *S* to hear an instance of the musical work *K*. This becomes clear when Dodd, following Levinson, characterizes properties as “a way that something can be, where a way of being is just a mode of existence available to [. . .] things” (2007, 63). *K*’s property-associate is the property *being a k* and any entity that is a token of *K* must have the property *being a k*. If this property is just a way that an entity is then there appears to be nothing *else* to experience but that entity having that property.

Note that this is compatible with Jackson’s and Pettit’s program explanations: in explanations of effects we sometimes cite the abstract type, but this isn’t a causal explanation. We hear the musical work by hearing a token of the work, and the type is causally relevant to the hearing of the work because it programs for the presence of its causally efficacious token.<sup>39</sup>

Dodd could claim that this is what he means by ‘derivative causation’ and thereby accept the above diagram, and thus the disagreement would appear to be a merely verbal one. But two things are to be noted about this response. First, it is incumbent upon Dodd to explain ‘derivative causation’ which he hasn’t done, as for example Davies (2009) argues, and if Dodd accepts my argument in this section, and claims that this is what is meant by ‘derivative causation’ then we are not *literally* predicating causal efficacy of abstracta. Since Dodd rejects analogical predication literal predication must be what he intends. Thus the disagreement isn’t merely verbal. Second, as far as I know the causal exclusion argument hasn’t been extended to the abstract/concrete distinction, but it generalizes to cases of abstract objects beyond types and tokens (properties and their instantiations, for example) and any other attempts to argue for their causal efficacy, and therefore it has import for the causal efficacy of abstracta beyond Dodd’s particular view.

Dodd’s account of musical works as abstract types doesn’t require the causal efficacy of abstracta, and thus Dodd can accept the standard position that abstract objects are causally inert. This in no way precludes the musical platonist from hearing a musical work; causal inertness doesn’t threaten

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<sup>39</sup> Another solution would be to treat predications of causal efficacy to the type as analogical, so they are understood as ‘all tokens of the type are causally efficacious’, but, again, Dodd expressly rejects this solution (2007, 94).

platonism, musical or otherwise.<sup>40</sup> Given the problems with the notion of derivative causation and the argument from causal exclusion, there is no (non-question-begging) explanatory work for the causal efficacy of abstract objects to do, and as a result we should maintain the standard position that abstract objects are causally inert. This also provides a principled reason for rejecting causal theories of reference<sup>41</sup> for abstract objects, which take reference to succeed by a causal-historical chain that ends in the initial ‘baptism’ of the name or natural kind term. Assuming he has secured the causal efficacy of abstracta, Dodd (2012, 92) has recently argued that there is no barrier for causal theories of reference to abstract objects. However, if abstract objects are causally inert, then they cannot stand in the requisite causal-historical chains.<sup>42</sup> While I am not endorsing a commitment to abstracta, I have attempted to provide a principled argument for the view that abstract objects are causally inert – a view that is often assumed but rarely explicitly argued for.

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<sup>40</sup> It does seem to preclude the creation and destruction of musical works and other abstracta. See Thomasson (1999), Caplan and Matheson (2004), Kania (2012, 206-7) and Rossberg (2012) for discussion.

<sup>41</sup> E.g. Kripke (1980).

<sup>42</sup> Causal exclusion also provides a motivation for Benacerraf’s dilemma (1983). See Cresswell (2010) and Liggins (2010) for critical discussion of epistemological objections to platonism. Cresswell (2010, 254-5) suggests that Benacerraf’s dilemma rests on an unstated metaphysical premise akin to the causal exclusion argument, although he doesn’t develop the idea.

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