

# Representationalism and sensory modalities: an argument for intermodal representationalism\*†

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Revised April 5, 2016 (submitted August 24, 2015)

Representationalism comes in two main varieties: intermodal and intramodal. On the intermodal view, the representational content of a phenomenal state fully determines its phenomenal character. On the intramodal view, phenomenal character is determined partly by content and partly by an experience’s intentional mode or manner of representation, where these are non-representational features analogous (or identical) to the sensory modalities.<sup>1</sup> In this paper, I consider a problem that seems to militate for the intermodal view. This is the problem of accounting for multimodal experiences, experiences that we can, to a first approximation, characterize as unifying experiences in different modalities. This problem is not entirely new, but its significance for intramodal views has not been fully explored.<sup>2</sup> I will start with some background and terminology.

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\*This is an unedited preprint of an article in *The American Philosophical Quarterly* 54(3), 2017.

†Many thanks to Angela Mendelovici for her extremely helpful input on this and related work. Thanks also to audiences at the 2008 AAP meeting, the Institute of Philosophy, Institut Jean Nicod, and Monash University. David Chalmers and Daniel Stoljar have provided some very helpful feedback on early versions of this work.

<sup>1</sup>The “intermodal” and “intramodal” labels come from Byrne (2001). Tye (1995 and 2000), Byrne (2001), Seager & Bourget (2007), and Pautz (2009, 2010a and 2010b) are intermodal representationalists. Lycan (1996) and Crane (2003, 2007) endorse intramodal representationalism. Chalmers (2004) is sympathetic but not committed to the intramodal view.

<sup>2</sup>I have previously sketched the central arguments of this paper in Bourget 2010b.

# 1 Background

By *consciousness*, I mean *phenomenal consciousness*, the what it's like aspect of mental states. A *phenomenal state* is a way things can be like for someone. Phenomenal states are also sometimes referred to as *phenomenal properties*. The *phenomenal character* of a phenomenal state is what distinguishes it from other phenomenal states. An experience is an event that consists in the instantiation of a phenomenal state by an individual on a particular occasion. I will switch between talking about experiences and phenomenal states as required to facilitate the exposition.

Some mental states have a kind of “directedness” to them: they seem to present or be directed at things. For example, judgments, beliefs, and desires exhibit a kind of directedness. This directedness is *intentionality*. What a mental state is directed at is its (*intentional*) *content*.

Representationalists hold that phenomenal states, like beliefs, are constituted in part by intentional contents.<sup>3</sup> On this view, a phenomenal state consists in representing a content in a certain way, and the contents of phenomenal states play a large role in determining what it's like to instantiate them. As noted in the introduction, this general view can be precisified in two main ways: intermodal representationalism and intramodal representationalism.

The intramodal and intermodal views differ mainly with respect to the roles that they give to intentional contents and sensory modalities in determining the phenomenology of perceptual experiences. The intramodal view holds that content determines phenomenal character intramodally (within a sensory modality only). By contrast, the intermodal view holds that content determines phenomenal character intermodally (across all sensory modalities). In other words, the intermodal view holds that no two metaphysically possible experiences that differ in phenomenal character can have the same content, whereas the intramodal view denies this and holds instead that no two metaphysically possible experiences *in the same modality* that differ in phenomenal character can have the same content.

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O'Callaghan (2008, 2015) also hints at these considerations. Speaks (2015) elaborates on O'Callaghan's discussion to make a case against some forms of intramodal representationalism (see footnote 24 below). Tye's (2007) discussion of common sensibles also touches on some of the points I make here (see footnote 18).

<sup>3</sup>Introductions to representationalism include Chalmers 2004, Seager and Bourget 2007 and Bourget and Mendelovici 2014.

In discussing these views, it is important to be clear on what we mean by “sensory modality.” There are four fairly natural ways of attributing sensory modalities to experiences (Grice, 1962, 1988): 1) based on their normal external stimuli, e.g. visual experiences are experiences normally caused by light; 2) based on their characteristic intentional contents, e.g. visual experiences represent colors and shapes; 3) based on their phenomenal characteristics, e.g. visual experiences have a certain visual phenomenology; 4) based on their producing organs and internal mechanisms, e.g. visual experiences are produced by a mechanism that spans the eyes, the optic nerves and the visual cortex. It is not clear which, if any, of these ways of individuating modalities is recommended by the conventional meaning of “sensory modality” or “sense.” This makes it all the more important to clarify what we mean. Since in this paper I am interested in modalities only insofar as they correspond to differences in phenomenal character, it is most convenient for my purposes to individuate modalities phenomenally. Accordingly, all references to sensory modalities in this paper should be understood as references to sensory modalities as individuated by phenomenal character. Adopting this terminological convention does not prejudice any important issues: all the questions we might want to ask can still be asked and all the consistent positions one might hold remain open. All that my terminological stipulation does is preempt some likely misunderstandings.

The principal reason for preferring an intramodal view over an intermodal view is there seem to be possible pairs of experiences in different sensory modalities that have the same content but different phenomenal characters. For example, Block (1996) compares an experience of hearing something falling from above and an experience of seeing something falling from above. According to him, pairs of experiences such as these can have the same content while differing in phenomenal character (one has an aural character, the other a visual character).<sup>4</sup> Some representationalists have suggested that

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<sup>4</sup>Dretske (1995) and Tye (1996) offer what seems to me to be a plausible response to Block: seeing and hearing something falling are only phenomenally different because in the first case you represent colors and other visual qualities in addition to movement, and in the second case you represent sound and other aural qualities in addition to movement. If we were to somehow strip the visual and aural experiences of these further contents, they would be phenomenally identical. Block claims to have performed this subtraction in imagination and found the resulting experiences to have different phenomenal characters. Personally, I am unable to perform this imaginary experiment. Other arguments in the same vein can be found in Lopes 2000 and Rosenberg 2004. My aim here is not to address these issues head on, but to develop a *different* consideration in favor of the intermodal

cases of this kind might require that we make room for a non-representational factor that partly determines the phenomenal character of an experience.<sup>5</sup>

Other kinds of cases challenge the intermodal view in a similar way. For example, it seems that there is a phenomenal difference between imagining a red object and perceptually experiencing a red object. Explaining this difference might seem to require a non-representational ingredient similar to a sensory modality. This has led some theorists to extend the idea of modality-like non-representational features to non-sensory states. Since modalities as phenomenally individuated are just types of phenomenal characters or ways of feeling certain contents, it is natural to allow that non-sensory experiences have modality-like features. Chalmers (2004) uses the term “manner of representation” to express this broadened notion of modality. Crane (2003, 2007) speaks instead of “intentional modes.” I am going to use Crane’s terminology, but rather than define intentional modes as relations to contents as he does (which seems to prejudge substantive questions about the nature of intentionality), I am going to define them more broadly as *ways of representing*. This leaves more options open for the intramodal representationalist. The ways of representing relevant to intramodal representationalism can be thought of abstractly as functions from contents to phenomenal characters: they determine how a content feels. However, this abstract characterization does not really tell us what modes are or how they do their job of shaping the phenomenal character of an experience. The main thing we know about modes is that they affect the phenomenology of an experience in the same way that the sensory modality of experience is supposed to affect it on Block’s picture.

Using the terminology of modes, we can state the core claim of the intramodal view in its full generality as follows: for any phenomenal state  $S$ , there is some content  $P$  and intentional mode  $M$  such that  $S =$  representing  $P$  in mode  $M$ . In contrast, the intermodal representationalist holds that, for any phenomenal state  $S$ , there is some content  $P$  such that  $S =$  representing

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view. I leave it to the reader to weigh the strength of this consideration against the preceding and other considerations for and against the intermodal view.

<sup>5</sup>For example, Lycan (1996), Crane (2003), and Chalmers (2004). Chalmers considers this option without committing to it. O’Dea (2006) offers one of the few arguments I am aware of against the intramodal view. Tye (2007) also makes a case against intramodal representationalism (see below). Other forms of opposition to intramodal representationalism turn around multimodal experiences (see footnote 2).

$P$  phenomenally.<sup>6</sup>

The two preceding claims are consistent, but I don't take the first to exhaust the intramodal position; I also take the intramodal view to include two further claims that give this view more substance and oppose it to the intermodal view. The first of these claims is that intentional modes affect the phenomenal characters of experiences in the same kind of way that sensory modalities do (if one agrees with Block above). This is important to the intramodal position because the suggestion that modes are analogous to modalities is almost all that we know about the former. Without the stipulation that modes are analogous to sensory modalities, anything could count as a mode, for example, having red qualia could be a mode. This would make the above claim much weaker than it is intended to be, and this would prevent intramodal representationalism from offering a genuine explanation of the phenomenal characters of experiences.<sup>7</sup> The second claim that I take to be part of the intramodal position is that an experience's mode is not always determined by its content. If this were not the case, there would be no point in positing a variety of modes, because they could do no more work than bare contents in determining phenomenal character. Put differently, I take intramodal representationalism to commit us to the possibility of pairs of experiences of the kind discussed by Block. I am going to refer to this claim as *Phenomenal Variation*.

PHENOMENAL VARIATION: there are at least two intentional modes  $A$  and  $B$  such that there is some content that can be experienced in either  $A$  or  $B$ , with different resulting phenomenal characters.

In the rest of this paper, I offer a reason for favoring the intermodal view over the intramodal view: of the two representationalist positions, only the inter-

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<sup>6</sup>Some intermodal representationalists give reductive accounts of phenomenal representation, while others don't. The latter think of phenomenal representation simply as this, phenomenal representation. Likewise, some intramodal representationalists give reductive accounts of intentional modes, while others don't. The issues that concern me here are (at least on their face) orthogonal to the question of reduction. I am not assuming that intermodal or intramodal representationalism must yield a reductive account of phenomenal consciousness.

<sup>7</sup>Intermodal representationalism does not offer an explanation of consciousness generally, but it offers an explanation of why experiences have the specific phenomenal characters they have. To be attractive, intramodal representationalism should at least have a chance of doing this.

modal view offers a compelling account of *multimodal experiences*. As we will see, intramodal representationalists' commitment to Phenomenal Variation is central to the problems that they face with multimodal experiences. I will start by characterizing multimodal experiences.

## 2 Multimodal experiences

To a first approximation, a multimodal experience is an experience that unifies distinct experiences in more than one sensory modalities. This section refines this account of multimodal experiences and overviews the case for the existence of such experiences.

O'Callaghan (2008, 2014, 2015) makes a case for multimodal experiences in terms of *feature binding*. Within the representationalist framework, we can say that two features are bound together when they are represented in a single experience as belonging to the same object. Multimodal experiences occur when the properties attributed to an object as part of an experience are represented in different modalities. O'Callaghan gives the following example of this phenomenon:

Imagine watching a movie with a compelling, immersive sound track. You hang on the actors' words and jump from your seat at the explosions. It sounds like planes flying up behind you and overhead. Now imagine the sound track's timing is off. It could be just a little bit, so that it is noticeable but not disturbing. It could be even more, so that the experience is jarring. Or it could be a lot, so that the sights and sounds appear wholly dissociated. In each of these four cases, the aural and visual stimulation independently remain qualitatively the same, but the phenomenology differs unmistakably. The alignment matters. The dramatic phenomenological difference between the perfect soundtrack and the very poorly aligned soundtrack stems in part from perceiving audible and visible features as belonging to something common in the coincident case but not in the misaligned case. (2014)

In the coincident case, it seems that you perceive objects as having both audible and visible features. You instantiate phenomenal states whose contents have a form such as (1), where  $F$  is a feature that you perceive aurally and  $G$  is a feature that you perceive visually.

$$(1) \quad \exists x(F(x) \wedge G(x))$$

We can think of the key feature of multimodal experiences as follows: they are instances of phenomenal states that subsume phenomenal states in different modalities. By  $x$  *subsumes*  $y$ , I mean that having  $y$  is a necessary part of having  $x$ .<sup>8</sup> Your cinema experiences, for example, are instances of phenomenal states such that, necessarily, anyone who instantiates these states must also instantiate certain phenomenal states in the aural and visual modalities: it is a necessary part of having these cinema experiences that one has aural experiences of certain sounds and visual experiences of certain shapes. I am going to take subsuming experiences in different modalities to be the defining feature of multimodal experiences. O’Callaghan (2014, 2015) offers an array of evidence for, and replies to objections against, the existence of multimodal experiences understood in this way. Here I am going to take it as read that there are multimodal experiences.

For our purposes, the most interesting multimodal experiences are those in which features perceived in different modalities are represented as belonging to related items. (2) illustrates this form of content.

$$(2) \quad \exists x, y(F(x) \wedge G(y) \wedge R(x, y))$$

Imagine for example that a dog is barking at you.<sup>9</sup> You perceive the dog ( $x$ ) visually. You also perceive the noise ( $y$ ) made by the dog aurally, and you perceive the dog as causing ( $R$ ) the noise (in some suitable sense of “causing”).<sup>10</sup> Let us call this experience *B-Dog*. B-Dog seems to be a clear case of an experience that subsumes experiences in at least two modalities: an

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<sup>8</sup>Bayne and Chalmers (2003) offer a more refined account of subsumption, but the above is sufficiently precise for our purposes.

<sup>9</sup>Speaks (2015) has independently made a case for multimodal experiences and (distinct) issues for intramodal representationalism using the same example of a barking dog (see footnote 24 below). The barking dog example was suggested to me by Angela Mendelovici in 2012. Since Angela was a student of Speaks’ as an undergraduate at McGill several years before this, there is a possibility that our examples have a common source.

<sup>10</sup>Several authors have argued that we experience causation, for example, Peacocke (1986, p. 156), Nudds (2001), and Siegel (2005). Nudds’ discussion is particularly relevant because he argues at length that we perceive sounds as produced by objects (as I claim here). I take this phenomenological claim to be fairly obvious, but the reader who is skeptical might find Nudds’ discussion helpful. O’Callaghan (2015) also argues that we experience causation. It is worth noting that the specifics of the present example are not essential to my argument in this paper: any relation that can be experienced would do in place of causation. I give alternative examples below.

aural experience of a barking noise (call it *Barking*) and a visual experience of a dog or dog shape (call it *Dog*). B-Dog also subsumes an experience of causation (call it *Causation*).<sup>11</sup> It is not obvious which modality, if any, we should ascribe to Causation, but we can set this question aside (Causation does not play an essential role in the arguments here).

B-Dog is only one among many examples of multimodal experiences with contents of the form (2). As another example, consider the experience that you have when you press the remote lock button on your car keys (without looking at the keys) and hear the sound coming from your car indicating that the doors are locked. It seems that you experience the movement of the button as causing the sound. This seems to be a multimodal experience involving touch and audition, where the objects of each experience are experienced as related. You also experience the sound as occurring after the movement of the button, which is a multimodal experience with a content of form (2) but not involving causation. Alternatively, consider any experience in which you both see and feel an object, for example, the table on which

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<sup>11</sup>One might doubt that an experience such as B-Dog really involves a distinct experience of causation on its own (an experience of the relation of causation without the dog and the noise). It seems that to experience causation, one must experience one thing as causing another. For this reason, it might seem that there is no experience of causation over and above B-Dog here. (Thanks to an anonymous referee for pointing out this possible concern.)

There are two things one might say in response. First, the fact that a phenomenal property is inseparable from another or is “nothing over and above” the other does not entail that the former is not a distinct property. Perhaps we can only experience causation by experiencing something as causing something else, and perhaps any instance of experiencing causation is nothing over and above an instance of experiencing specific events as causally related, but this is no different from the dependency of color experiences on experiences of colored shapes (it does not seem that we can experience colors on their own, without experiencing them as spread over shapes). Despite this dependency, we distinguish experiences of colors as components of experiences of colored shapes. Likewise, we can distinguish experiences of the relation of causation as components of experiences such as B-Dog.

A second possible response is that, even if there were no such thing as an experience of the relation of causation, this would leave open that we can experience merely the generic content *something is causing something*. One could think of Causation above as an experience of this type.

In any case, recognizing the existence of Causation as an experience distinct from B-Dog is not important for our purposes. The arguments below rely only on the fact that B-Dog subsumes Dog and BarkingNoise. I discuss Causation along with these two other subsumed experiences for completeness only.



your arm is resting. In such cases, you seem to experience the shape of the object as related in some way to the tactile sensation. Consider also experiences of thunder and lightning in quick succession. One is heard, the other seen, but one can definitely experience the temporal ordering between them.

What is interesting about B-Dog and other multimodal experiences with contents of the form (2) is that it is particularly clear that they do not arise from the “co-consciousness” (Dainton 2000) or gluing together of their components experiences. When a multimodal experience has a content with the form (1), one might hope to explain it in terms of some co-consciousness relation between two experiences, one with an  $F$  content and the other with a  $G$  content. In the case of B-Dog, however, this would clearly fail to account for the phenomenology of the experience: in B-Dog, you do not merely experience a dog, a noise, and causation; you experience the dog as *causing* the noise.<sup>12</sup> Co-consciousness of dogness, noisiness, and causation cannot account for this because there is more than one way for these properties or phenomenal characters to combine: one can experience a dog as causing a noise, but one can also (in principle) experience a noise as causing a dog. For example, imagine that making the right barking sound could reliably shape air into a concrete, living dog. Those who master the art of barking in the just the right way could consistently bring dogs into existence. Someone who witnessed such a scene would reasonably be said to experience a dog caused by a barking noise.<sup>13</sup> So it is possible to experience either a dog causing a noise or a noise causing a dog. As a result, accounting for what you are experiencing in B-Dog within the framework of representationalism requires that we ascribe to your experience a content that specifies that a dog is causing a barking noise, not just that there is a dog, a barking noise, and causation.

I will now argue that the intermodal view’s explanation of multimodal experiences is far better than any explanation the intramodal view is likely to provide. Note that it is not part of my aim here to consider other arguments for and against the intermodal or intramodal view, or representationalism generally: I am concerned with these views’ ability to explain multimodal experiences *on the assumption that they are true*, not with their all-considered

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<sup>12</sup>Nudds (2001) also suggests that experiences of noises being produced by objects that we apprehend visually cannot be reduced to conjunctions of simpler experiences.

<sup>13</sup>If this example of a reversible relation is not persuasive, consider multimodal experiences of thunder and lightning as described above. The temporal order in the contents of these experiences can clearly be reversed.

plausibility.<sup>14</sup>

### 3 Multimodal experiences on the intermodal view

Intermodal and intramodal representationalism must accommodate and explain multimodal experiences such as B-Dog. To account for B-Dog, one needs to say which content and which mode (if any) among those available to one's theory are constitutive of this experience. One must also explain the most important and obvious features of this experience. In particular, one should be able to explain how B-Dog subsumes Dog, Barking, and Causation. Of course, an account of B-Dog should also not predict that it subsumes experiences that it does not in fact subsume. For example, it should not predict that in B-Dog one has an aural experience of a dog shape.

The intermodal representationalist, unlike the intramodal representationalist, has no room in her theory for differences in phenomenal character that are not accompanied by differences in content. On her view, sensory modalities (as individuated by phenomenology) supervene on content. She must therefore hold that, for each sensory modality, there are characteristics of contents such that every experience whose content has one of these characteristics is *ipso facto* in the relevant modality. For example, perhaps any content that involves colors is a visual content, a content such that if an experience represents it, then it is (at least partly) a visual experience. Perhaps any content that involves sounds is an aural content, a content such that if an experience represents it, then it is (at least partly) an aural experience. Since this view effectively states that words such as “visual” and “aural” are redundant when describing an experience and its content, I will refer to it as *the pleonastic view* of sensory modalities.<sup>15</sup>

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<sup>14</sup>Other important considerations against (intermodal) representationalism include the case of perceptual distortion (discussed in Bourget, 2015a), the case of imagery and cognitive phenomenology (discussed in Bourget 2015b, ms), and the case of moods and emotions (Mendelovici 2013, 2014). I discuss my preferred account of the feature that distinguishes phenomenal from non-phenomenal representations in Bourget 2010a: phenomenal representations have underived intentionality.

<sup>15</sup>It could be that many contents do not clearly belong to any modality, but the intermodal representationalist has no reason to question her view in the face of such difficulties. On her view, modalities as phenomenally individuated do no work in explaining phenom-

We can now see how the intermodal representationalist's explanation of multimodal experiences goes. Assuming intermodal representationalism, B-Dog is plausibly a case of phenomenally representing a content along the lines of Scene.

SCENE:  $\exists x, y(Dog(x) \wedge BarkingNoise(y) \wedge Causation(x, y))$

To account for the subsumption of Dog, Barking and Causation by B-Dog, the intermodal representationalist can appeal to the following plausible principle:

CLOSURE UNDER PARTHOOD: Necessarily, if a subject is experiencing a content that has  $C$  as a component, the subject also has an experience that has  $C$  as its whole content.

Closure says that an experience necessitates experiencing all components of its content. For example, if you are experiencing a blue triangle on top of a yellow square, then you are experiencing a blue triangle (as well as experiencing blueness and triangularity). Different accounts of the nature of phenomenal contents will yield different understandings of the Closure principle. Here I am going to assume the commonly held view that the contents of experiences are structured entities made up of properties, relations, and, possibly, individuals. I am also going to assume that, at least at some level of decomposition, the components of the content of an experience correspond to the different words that we use in English when describing these contents. For example, since we describe the content of B-Dog as a dog producing a barking noise, I assume that the content of this experience has dog-related, noise-related, and production-related components. I am going to remain neutral on the precise nature of these components.<sup>16</sup> The Closure principle is also plausible on other views of the contents of experience, but focusing on the structured content view above will simplify the exposition.<sup>17</sup>

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enal character, so they are dispensable. The intermodal representationalist wants to do justice to our tendency to classify experiences into modalities, but she need not do more; she need not worry about assigning modalities where commonsense won't.

<sup>16</sup>The main question here is whether a content such as  $\exists x(F(x) \wedge G(x))$  should be thought of as having  $\exists xF(x)$  or the property of F-ness as a component. What I say below could be precisified either way.

<sup>17</sup>On an unstructured view, it is natural to take the parts of a propositional content to be simply the propositions entailed by it. Closure would then imply that every experience involves an experience of The True, the one necessary proposition. One might say that this is implausible. But at least two things could be said in response. First, the implausibility,

Closure is highly plausible on its face, particularly given the preceding assumptions. When we specify the contents of our phenomenal states, we say what it is that we are conscious of in these states. When we specify a content in various parts, using distinct words, part of what we are saying is that we are conscious of these parts. Take B-Dog. If we were not prepared to say that experiencing a dog is a constitutive part of this experience, we would simply not describe it as an experience of a barking *dog*. We would use other words more appropriate to what is experienced as part of this experience. Of course, an in-depth look at the Closure principle and the structure of phenomenal contents is likely to turn up tricky questions, but it seems plausible that something like the Closure principle is right.

Given Closure, the intermodal representationalist has a straightforward account of the subsumption relation between B-Dog and Dog, Barking, and Causation. From Closure we can infer that, necessarily, if you experience Scene, you have experiences of a dog, a barking noise, and causation (three experiences in total). A dog or dog shape is a visual content, so, applying the pleonastic view of modalities, we can infer that you have a visual experience of a dog. In other words, you have Dog, the component experience we want to explain. The pleonastic view also predicts that your experience of the barking noise is aural, hence that it is Barking. We may or may not want to attribute a modality to your experience of causation. Either way, it seems plausible that it is Causation, the component experience we want to explain. In this manner, the intermodal representationalist can account for the subsumption of Dog, Barking, and Causation by B-Dog. Even if this account could be refined in many ways, we will see shortly that it is a lot more compelling than what the intramodal representationalist can say.<sup>18</sup>

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if any, seems to come from the unstructured view itself when applied to experience, not from the Closure principle. Independently of Closure, the unstructured view has the consequence that the experience of <There is a cat on the mat> is phenomenally identical to the experience of <There is a cat on the mat and  $T$ >, where  $T$  is any necessary truth. This already seems to imply that every experience involves an experience of The True. Second, this consequence of the unstructured view is not as bad as it seems at first. At first, it seems that the unstructured view inflates the content of every experience by adding The True to it. But perhaps all this shows is that there is not much to experiencing The True (perhaps this view deflates The True rather than inflating what we experience). As Frege remarks, “The content of a concept diminishes as its extension increases; if its extension becomes all-embracing, its content must vanish altogether.” (1953, p. 40)

<sup>18</sup>Tye (2007) makes an argument for his brand of intermodal representationalism that turns on similar considerations. Tye first observes (as we did earlier) that feature binding

## 4 Multimodal experiences on the intramodal view

Multimodal experiences pose a clear challenge to intramodal representationalism. To begin with, what mode should we assign to B-Dog? More precisely, in what mode is the content of B-Dog (Scene) represented? Intentional modes of the kinds contemplated by intramodal representationalists do not seem suitable: clearly, the whole of Scene is not represented visually, aurally, etc. As O’Callaghan (2008, 2014, 2015) argues, the view that each perceptually represented content can be attributed a sensory modality (as standardly conceived) breaks down in the case of multimodal experiences. In this section I explore possible intramodal accounts of B-Dog. I suggest that no plausible account of multimodal experiences is consistent with the intramodal view.

One central assumption I make in what follows is that B-Dog involves experiences that satisfy Phenomenal Variation if the intramodal view is true. Specifically, I assume that, on the intramodal view, dog shapes can be experienced either visually or aurally (as in echolocation), with different resulting phenomenal characters. The intramodal representationalist is not committed to this specific way of satisfying Phenomenal Variation, but she is committed to some experiences satisfying the thesis. I assume that the thesis is satisfied as just specified for the sake of illustration. If an intramodal representation-

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occurs across sensory modalities. He calls the problem of explaining how this is possible “the problem of common sensibles.” Noting that it is difficult to see how cross-modal binding could happen if we take sensory modalities to be self-contained representational systems, Tye suggests that they are not. More specifically, he suggests that when cross-modal binding occurs, there are no modality-specific experiences: “Where there is experienced togetherness across sense modalities, sense-specific experiences do not exist. They are the figments of philosophers and psychologists imaginations. And there is no problem, thus, of connecting these experiences up with an overarching experience.” (2007, p. 293) If experiences in different modalities are never unified together, there is no problem of accounting for their unification.

I am sympathetic to many aspects of Tye’s picture, but I don’t think his view adequately addresses the challenge that I present here. Far from accounting for multimodal experiences, Tye denies their existence. Multimodal experiences, as I think of them, subsume experiences in different modalities. Tye’s main point is precisely that cross-modal binding does not give rise to such subsumption: it gives rise to *elimination*. Since Tye’s one-experience view denies that one is having an experience of a dog as part of B-Dog, it cannot explain the subsumption relation between the two experiences. Tye’s one-experience view denies that there is a problem instead of addressing it. Tye is also silent on alternative explanations that intramodal representationalism can offer.

alist were to deny that it is so satisfied, we could replace our example by one involving contents and modes that do satisfy Phenomenal Variation.

When first presented with a multimodal experience such as B-Dog, one might be tempted to say that its content is not represented in any mode at all, either because it is not represented, or because it is represented *amodally*. The problem with the first suggestion is that it does not do justice to the unified phenomenology of B-Dog. As we noted at the end of section 2, there is no way to account for the phenomenology of this experience within a representationalist framework other than by saying that Scene is phenomenally represented. The problem with the suggestion that the phenomenal representation of Scene is amodal is that this is inconsistent with the intramodal view if “amodal” means *without mode*. On the intramodal view, modes are the ways of representing that correspond to the possible mappings between contents and phenomenal characters. There is something it’s like to represent Scene in B-Dog, so the phenomenal representation that accounts for this phenomenology must have a mode on the intramodal view. If one wants, one can label this mode “amodal” since it does not correspond to any sensory modality, but it is a mode in the sense relevant here.

If B-Dog must have an intentional mode, there are two possibilities: its mode might be either *piecemeal* or *basic*. By “piecemeal,” I mean a mode that is composed of other modes. A simple (but unrealistic) example of a piecemeal mode for representing a content *c* would be *representing part of c visually and the rest aurally*. By “basic,” I mean a mode that is not piecemeal. The mode of B-Dog must be either piecemeal or basic. As far as I can tell, intramodal representationalists have only considered basic intentional modes, but it seems that multimodal cases might require that we posit piecemeal modes, so both options should be considered.

Let us start by considering basic modes. As noted above, the mode of B-Dog is not the visual mode, the aural mode, or any other basic intentional mode found in simple perceptual experiences. But one might think that B-Dog has the cognitive mode. Alternatively, one might think that it has some special, neutral intentional mode that is characteristic of multimodal experiences. These are the most natural options if one wants to ascribe a basic mode to B-Dog, but they are not very promising. Recall that we are assuming for the sake of illustration that, if intramodal representationalism is true, it is possible both to visually and aurally experience dog shapes, and that such experiences have distinct phenomenal characters. Given that this is so, how could the fact that one is cognitively or neutrally representing a

barking noise entail that one is visually representing a dog? Presumably, if one were aurally representing the dog, the resulting unified experience would still be one in which one is cognitively or neutrally representing a barking dog. But the same experience cannot subsume dog experiences in different modalities on different occasions, because subsumption requires entailment: if a neutral or cognitive experience of a barking dog can be accompanied either by a visual experience of the dog or by an aural experience of the dog, the neutral or cognitive experience does not entail either of the modality-specific experiences of the dog. A different account of the basic mode of B-Dog might not succumb to this problem, but it is very hard to see how to avoid the problem given that basic modes are not composed of modalities: it cannot be part of the basic mode of B-Dog that one is visually (or aurally) experiencing anything. Consider in particular that the Closure principle invoked by the intermodal representationalist is of no use to the intramodal representationalist. If intramodal representationalism is true, Closure allows us to infer that the subject of B-Dog is experiencing a dog, but it does not allow us to infer that the subject is *visually* experiencing a dog because it is also possible to experience such a content aurally.

Given that basic modes seem unable to account for the subsumption properties of multimodal experiences, let us consider piecemeal modes. An initially attractive starting point is to say that B-Dog represents Scene visually, aurally, and in some other way suitable to the representation of causation, say, cognitively. This vague proposal can be understood in two importantly different ways, neither of which seems acceptable. First, it can be understood as saying that all parts of the content of B-Dog are represented visually, aurally, *and* cognitively. That is clearly incorrect. For example, the barking noise is not represented visually. The second way of understanding the proposal is that the parts of B-Dog are represented *either* visually, aurally, *or* cognitively. This does not tell us how each part is represented, so this is not a sufficient specification of B-Dog.<sup>19</sup> For example, this will not allow us to explain the fact that B-Dog subsumes a visual experience of a Dog.

These issues naturally lead to a specification of B-Dog's piecemeal mode along the following lines: the subject is representing a dog visually, a barking noise aurally, and causation cognitively. There is still a problem with this,

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<sup>19</sup>One might say that we can infer how each part is represented from the fact that it is representable in only one mode. However, Phenomenal Variation entails that this won't always work.

however. For all that this mode specifies, the subject's way of representing Scene could be by representing *unrelated* properties of dogness, noisiness, and causation. This does not constitute representing the whole of scene in a way that can explain the phenomenology of B-Dog, because, as noted earlier, there are different ways of experiencing these properties together. In B-Dog, one experiences the whole of Scene, so the mode of B-Dog needs to specify that the subject is phenomenally representing the whole of Scene. One can add that, as part of this, the dog is represented visually, the noise aurally, and the causation cognitively, but this does not change the fact that Scene is represented phenomenally. This leads to the following specification of the mode of B-Dog, which I am going to refer to as *PM*: the subject is experiencing the whole of the content in some mode (say, cognitively) while experiencing the dog visually, the noise aurally, and the causation cognitively.

PM offers the most plausible account of the mode of B-Dog we have seen so far. One virtue of this account is that it seems to succeed at explaining how B-Dog subsumes its component experiences. For example, from the fact that one is representing Scene in mode PM, it seems to follow that one is visually representing a dog. However, this follows merely from the fact that one is representing *something* in PM, because this mode says that one is visually representing a dog. It is suspicious that the content of B-Dog is not even relevant to explaining why this experience has a doggy phenomenally character. There is something ad hoc and dubious about PM.

Other multimodal experiences are bound to lead the intramodal representationalist to posit even more dubiously content-loaded modes. Take for example B-Dog<sub>2</sub>, an experience just like B-Dog but in which a second dog is smelled (without being heard). In order to attribute the visual mode to the barking dog in B-Dog<sub>2</sub>, one will have to say that the mode of B-Dog<sub>2</sub> is along these lines: the subject is visually experience the barking dog and olfactorily experiencing the non-barking dog. Now the mode fully determines the content, i.e. that there is a barking dog and a non-barking dog. Accounting for multimodal experiences seems to force us to transfer large chunks, if not the totality, of their contents into their modes.

This outcome is not only intrinsically dubious, but it runs against the spirit of representationalism. One of the most widely cited motivations for representationalism is that it accounts for the *transparency* of experience. Multiple transparency claims have been discussed in the literature,<sup>20</sup> and not

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<sup>20</sup>For example, see Harman (1990), Tye (2000, 2002), Kind (2003), Stoljar (2004),



all of these claims are equally plausible, but there seems to be widespread agreement on this much among representationalists: introspection reveals almost nothing of our experiences beyond their contents. Modes are non-representational features of experiences. And if the modes of multimodal experiences contain all or most of the information that is in their contents, they must have some kind of internal complexity. My argument has focused on simple experiences for ease of exposition, but our experiences are generally very complex, and cross-modal binding seems ubiquitous. It is plausible that, at least in normal conditions, all or most of a subject's experiences at a time are subsumed by a total experience one has at the time.<sup>21</sup> Our considerations so far suggest that such total experiences must involve extremely complex modes on the intramodal view. These modes must be in constant flux, as the specific pattern of modalities we experience varies constantly. The idea that these complex, fluctuating non-representational features play a large role in determining phenomenal character does not sit well with the purported transparency of experience, according to which no such features can be introspected.

We have seen that intramodal experiences must have modes on the intramodal view, and that these modes could be either basic or piecemeal. We have explored different ways that suitable basic or piecemeal modes might be specified. Neither approach seems promising. The problem with basic modes is that it is hard to see how they could explain the subsumption properties of multimodal experiences. The problem with the piecemeal strategy is that it seems overly ad hoc, and it seems to conflict with the apparent transparency of experience. It is very hard to see how the structure of multimodal experiences can be accommodated on the intramodal view. In the next section I raise an even more general difficulty that any intramodal account of multimodal experiences must face.

## 5 The Duplication Problem

Consider this modified closure principle:

MODAL CLOSURE UNDER PARTHOOD: Necessarily, if a subject is experiencing a content  $P$  in some basic mode  $M$  and  $P$  has

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Kennedy (2009), Mehta (2013), and Mendelovici (2013).

<sup>21</sup>Bayne and Chalmers (2003) argue for this point.

content  $C$  as a component, then the subject is also experiencing  $C$  in  $M$ .

Recall that a basic mode is one that is not piecemeal: it is not composed of other modes in the way that the mode PM we attributed to B-Dog is composed of other modes. In effect, the basic modes are those that have been considered by intramodal representationalists to date. Modal Closure is plausible if we think of the basic modes as ways of experiencing that are analogous (or identical) to sensory modalities, as recommended by proponents of the intramodal view. On this way of thinking of basic modes, it seems that experiencing a complex content with various parts in a certain basic mode requires experiencing each of its parts in this mode as well. For example, in order to visually experience a triangle next to a square, I need to visually experience both the triangle and the square. Like Closure, Modal Closure is supported by reflection on our terminological choices when describing experiences. When I state that I am visually experiencing a triangle next to a square, it seems that I use the word “square” because I want to imply that I am visually experiencing a square; if I didn’t want to imply that I am visually experiencing a square, I would say that I am visually experiencing a triangle next to  $X$ , where “ $X$ ” describes what I do take myself to be experiencing that is not a square.

Above we considered a number of possible accounts of the mode of B-Dog, including PM. Let us forget these accounts and ask what *must* be the case on the intramodal view whatever the mode of B-Dog might be like. Whatever the mode of B-Dog might be like, one thing we know is that, in B-Dog, the whole of Scene is represented in some basic mode. Here is why. First, we know that the whole of Scene has to be represented in some mode  $M$ . Otherwise, we cannot account for the phenomenology of the experience, as noted earlier. Either  $M$  is a piecemeal mode, or it is a basic mode. If it is basic, we have arrived at our conclusion. If  $M$  is a piecemeal mode, then either part of this mode specifies that the whole of Scene is represented in some mode  $M2$ , or it does not. If it does not (like the first piecemeal mode we considered in the preceding section),  $M$  fails to account for the phenomenology of the experience. If it does, then either  $M2$  is a piecemeal mode or it is a basic mode. We can repeat the same reasoning until we arrive at a basic mode for Scene, so we know that Scene is represented in some basic mode as part of B-Dog. Call this basic mode *M-Scene*.

One thing we know about M-Scene is that it is not identical both to the

visual mode involved in Dog *and* to the aural mode involved in Barking. Assuming for the sake of illustration that Phenomenal Variation is satisfied by the visual and aural modalities, these modalities must give rise to different phenomenal characters, so they cannot be identical. It follows that they cannot both be identical to M-Scene. For the sake of illustration, let us assume that M-Scene is not the visual modality. This means that when we apply Modal Closure to the M-Scene representation of Scene that must be part of (or identical with) B-Dog on the intramodal view, we infer that the subject experiences the dog in the M-Scene way, where this is distinct from visually experiencing the dog.

M-Scene representations of dogs and visual representations of dogs must have distinct phenomenal characters. If M-Scene and the visual mode are distinct, M-Scene representing a dog and visually representing a dog are distinct properties. By hypothesis, these are phenomenal properties. Phenomenal properties are individuated by their phenomenal characters: distinct phenomenal properties have distinct phenomenal characters. It follows that the properties of M-Scene representing a dog and visually representing a dog have distinct phenomenal characters.<sup>22</sup>

The upshot is that the intramodal view seems to be committed to two phenomenologically distinct experiences of the dog being subsumed in B-Dog. This consequence is clearly false: in an experience like B-Dog, one is not experiencing the dog in two phenomenologically distinct ways. This is the *Duplication Problem*.

Of course, an intramodal representationalist might simply deny that Modal Closure applies to M-Scene. This response requires denying the assumption we have been making that basic modes are akin to sensory modalities, which justifies Modal Closure (together with the fact that sensory modalities satisfy Modal Closure). The problem is that denying that basic modes are akin to sensory modalities leaves us without any positive idea what the basic modes

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<sup>22</sup>This argument suggests that the view that phenomenal properties involve piecemeal modes may not be coherent. For example, take the following piecemeal mode, *M-Cond*: *visually if a shape, aurally otherwise*. If M-Cond could constitute a phenomenal property such as *M-Cond representing a square*, it would be one that clearly has the same phenomenal character as some distinct phenomenal property (visually representing a square). Knowing that the consequent is false, we can rule out modes like M-Cond. This seems to rule out any piecemeal mode with a disjunctive character. Since conjunctive modes such as *representing P both visually and aurally* are dubiously coherent, we may be in a position to rule out all piecemeal modes.

might be. The result is not an interesting view, because it is hardly a view. As noted earlier, anything can be a manner, mode, or way of representing. Representing redness while having a red intrinsic quality, for example, is a way of representing redness. If we think of modes simply as ways of representing, without substantiating this more, the claim that the phenomenal characters of experiences are determined together by their modes and contents is almost empty—it is consistent with all the work being done by intrinsic qualia.<sup>23</sup> For the intramodal view to be an attractive theoretical position that truly sheds light on the structure of experience, we need to combine it with a substantive account of modes that makes it non-trivial. The only non-trivializing account that has been suggested is that modes are akin to modalities.<sup>24</sup>

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<sup>23</sup>The same goes if we think of modes as relations to contents as suggested by Crane (2003): having quale  $q$  while representing  $P$  is a relation to contents.

<sup>24</sup>Speaks (2015, p. 217-20) has independently made an argument that has striking commonalities with the argument of this section, including the fact that he uses the same example of a barking dog. Speaks endorses a principle that is roughly equivalent to Modal Closure. He also notes that the representation of the whole of Scene (or an equivalent) in a multimodal experience such as B-Dog must involve a way of representing, which he calls *C-representing*. Speaks then argues (using his equivalent of Modal Closure) that if one C-represents the whole of Scene, one must C-represent each part of it, including, for example, the dog. So far, Speaks' argument parallels the argument I give here. However, he then suggests that a C-representation of a dog should have a visual character. He concludes that this makes modality-specific modes superfluous.

While my *reductio* and Speaks' start with some of the same premises, they make opposing claims about the phenomenology: contrary to Speaks, I claim that an M-Scene representation of a dog would have a different phenomenal character than a visual representation of a dog on the intramodal view. Speaks does not explain why he thinks C-representing a dog should be phenomenologically identical to visually representing a dog, but perhaps it is because we know that there are not two phenomenologically distinct experiences in this case.

In any case, Speaks' argument is inconclusive. One could agree with him that C-representing a dog results in a visual character while denying that this makes the visual mode redundant. For all that Speaks says, one could think of C-representing as a piecemeal mode along the lines of *representing dog-related properties visually and noise-related properties aurally* (Speaks does not distinguish basic and piecemeal modes, so this option is not ruled out). On this conception of C-representing, visual and aural representations are essential parts of C-representations. This does not make the visual mode superfluous; this makes it essential to C-representation. So it seems to me that Speaks' argument fails because he does not rule out that C-representing is a piecemeal mode. (This is also a shortcoming of the earlier version of the duplication problem presented in Bourget 2010b.)

Another important difference is that the broader argument I am making is a dilemma

## 6 Conclusion

My aim has been to show that intermodal representationalism has a much easier time accounting for multimodal experiences than the intramodal view. The intermodal representationalist can account for multimodal experiences and their important properties by appealing to the Closure principle and the pleonastic view of modalities that is entailed by her view. I have not argued that intermodal representationalism is true, but I have argued that intermodal representationalism can easily account for multimodal experiences *if it is true*. In contrast, the intramodal view has a hard time accounting for multimodal experiences. I have outlined two problems that stand in the way of an explanation of multimodal experiences within the framework of this view. The first problem is that it is just not clear what mode an experience such as B-Dog might have on this view, and when we try to specify such a mode, we end up specifying a mode that is dubiously ad hoc and dubiously similar to the content of the experience. The second problem is the duplication problem: the intramodal view predicts duplicate experiences in multimodal cases so long as modes are supposed to be analogous to modalities. Of course, the considerations I have put forward here are only part of the story; there are also arguments against intermodal representationalism that should be weighed against these considerations. This is a task for another occasion.

Throughout this paper, I have focused on the case of sensory modalities, but my arguments seem to generalize to any view that holds that two or more types of experience can exhibit differences in phenomenal character that can only be accounted for by differences in mode-like features.<sup>25</sup> Consider for example the case of imagery and perception. One might think that modes are required to explain phenomenal differences between episodes of imagery and episodes of perception. But consider that experiences that subsume imagery and perceptual experiences are possible. Suppose, for example, that

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for the intramodal representationalist, not an argument from Modal Closure: accept the conception of modes as akin to sensory modalities, in which case you are committed to Modal Closure and the duplication problem, or reject this conception of modes, which leaves you without a positive theory (but free to deny Modal Closure). Unlike Speaks', this argument has bite even if one is not inclined to accept Modal Closure.

<sup>25</sup>My arguments also seem to generalize to views that aim to explain phenomenal character in terms of a mix of content-like and non-content-like features. For example, intramodal naive realism seems to face the same problem as intramodal representationalism.

the sight of a old Volkswagen Beetle reminds you of a certain beach. As the beach is brought back to mind, you might experience a visual memory of it, and you might experience the beach as related in some way to the Beetle. Accounting for this experience is problematic for a view that assigns different modes to imagery and perception, for reasons that are exactly parallel to the above. Consider also the case of attention. Speaks (2010, 2015) suggests that there are two intentional modes: one for attentive experiences, and one for inattentive experiences. But attentive and inattentive experiences can be unified just like visual and aural experiences. This gives rise to difficulties parallel to the above for this view. The problem of multimodal experiences is a general problem affecting all representationalist views that deny that the content of an experience fully determines its phenomenal character.

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