



How to be an adverbialist about phenomenal intentionality

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Received: 15 May 2018 / Accepted: 4 December 2018 / Published online: 12 December 2018
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Abstract

Kriegel has revived adverbialism as a theory of consciousness. But recent attacks have shed doubt on the viability of the theory. To save adverbialism, I propose that the adverbialist take a stance on the nature of *adverbial modification*. On one leading theory, adverbial modification turns on the instantiation by a substance of a psychological type. But the resulting formulation of adverbialism turns out to be a mere notational variant on the relationalist approaches against which Kriegel dialectically situates adverbialism. By contrast, I argue that the way to be an adverbialist is to adopt an event ontology, emphasizing the active contribution of the mind to the phenomenology of experience. My close examination of the *semantics of adverbial modification* throws this metaphysical distinction into sharp relief. The event-based semantics overcomes recent objections in a way superior to the methods that would have been obviously available in the absence of a sophisticated semantics.

Keywords Adverbialism · Phenomenal intentionality · Consciousness · Event semantics · Intensional logic

1 Introduction

In philosophy of mind, it is increasingly common to hold that phenomenal consciousness is the ground of mental intentionality, and that all other forms of intentionality are derivative of phenomenal intentionality. This is known as the *theory of phenomenal intentionality* (e.g., Loar 1990; Pitt 2004; Kriegel 2007, 2011, 2013; Montague 2010; Horgan 2013; Mendelovici and Bourget 2014). Such a view gives conscious experience pride of place in resolving debates about the metaphysics of mind. But it remains an open question just what the nature of phenomenal intentionality is.

Kriegel (2011) has revived *adverbialism* as a theory of phenomenal intentionality. Kriegel contrasts adverbialism with *relational* theories, such as naïve realist theories

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that account for intentionality by virtue of an extensional relation between an agent and an object, or first-order tracking theories that identify intentionality with tracking relations between an agent's mental states and her environment. Relational theories run into the difficulty of conscious states in which a subject is thinking about something that does not exist. If consciousness is grounded in a relation, then this results in a difficult puzzle, since relations require relata. By contrast, if consciousness is an intrinsic property of the mind as an adverbialist holds, then such *intentional inexistence* is a feature of the theory, rather than a bug. For example, when Smith thinks about Pegasus, this is analyzed not as a relation between the Smith and Pegasus, but rather as Smith's thinking in a particular way.

At its most general, then, the view is that intentionality is an intrinsic feature of the mind, rather than an external relation. However, recent discussions about adverbial consciousness have not yet fully appreciated a metaphysical distinction lurking in the adverbial constructions. The metaphysical picture obtained from the adverbial revision will depend importantly upon what account one endorses of the nature of *adverbial modification* itself.

Taking a stance on the ontology of adverbial modification is not premature. Adverbialism has long been on shaky ground in fleshing out how to preserve its intuitions when push comes to shove. A significant underlying issue is that variations in phenomenology seem to presuppose variations in the 'object' of an act-object relation, and that therefore the adverbialist about phenomenal intentionality will end up either being unable to disambiguate distinct mental states (Jackson 1977, Dinges 2015, Grzankowski 2018) or will tacitly assume a relational model (Woodling 2016). In this article, I show that the potential success of the adverbialist revision against these objections rides on the underlying theory of adverbial modification.

The relevant distinction is thrown into sharp relief by examining the two primary competing accounts of the *semantics for adverbs*. In order to successfully defend the picture that intentionality is an intrinsic feature of the mind, the adverbialist about intentionality should endorse a view on which adverbial modification has a *formal structure* distinct from standard non-quantified subject-predicate structure. On such a view, intentional predicates induce a formal structure distinct from standard predication of a property to a substance. This leads to a distinct metaphysical picture of intentionality that privileges the *subjective activity* of the mind, so that consciousness becomes first of all the domain of mental *acts* rather than a property of mental *states*. This flows naturally into a certain non-traditional view of intentionality whereupon the phenomenological properties of a mental act are contributions from subjective activity, rather than from the object of an act-object relation. In short, then, in order to be an adverbialist about intentionality, one ought to endorse a certain non-classical theory of intentionality, wherein the activity of the subject structures the intentional content.

My patently *semantic* route into the ontology is especially well-motivated because the move to a sophisticated semantics for adverbs gives the adverbialist ample resources to respond to recent attacks in the literature centered around the thought that adverbialism simply can't shake Jackson's (1977) longstanding many-properties problem (Dinges 2015, Grzankowski 2018). My approach therefore vindicates Kriegel's

pronouncement that “adverbialism about intentionality is alive and well” (2008, p. 89) by providing a novel approach to the many-properties problem.

My argumentative strategy will proceed as follows. In Sects. 3 and 4, I explicate the two primary semantics for adverbs and apply them to adverbialism about phenomenal intentionality. First I address the Montagovian *intensional* semantics, and then the Davidsonian *event* semantics. In Sect. 5, I show how the semantic resources enable the adverbialist to respond to the many-properties problem, and I propose a novel method for the event semantics originating in the analysis of events in terms of a part-whole mereological structure. In Sect. 6 I argue that the distinctive metaphysics of intentionality proffered by the event view is uniquely suited to overcoming the foundational problems that adverbialism has repeatedly faced.¹ In Sect. 7 I further argue in favor of the non-traditional metaphysics of the event view by showing that it improves upon the primary extant response to the many-properties problem from Kriegel (2011). In the concluding Sect. 8 I hope to deflate natural worries about the event ontology, which may lead to a question of whether adverbialists really can follow through with the central virtue of their account to streamline the ontology of consciousness. But, I argue, the event ontology does not incur ontological commitments beyond those that an adverbialist should be independently prepared to accept. Before going into the argument, however, I will set up the problem space in Sect. 2.

2 Adverbialism about phenomenal intentionality

Traditionally, adverbialism is a theory of sense perception that was widely abandoned due in large part to the many-properties problem arising in Jackson (1977). More recently, Kriegel has argued that the adverbialist’s resources for treating the intentionality of *thought* revives the theory once we move from the domain of sense-perception to the broader domain of *intentionality*.²

A central issue in the discussion of consciousness and intentionality since Brentano is that of intentional inexistence (Brentano 1874/2014). *Intentional inexistence* is that feature of consciousness whereby we can consciously think about non-existents, such as when we think about Pegasus and wish that he existed. Regrettably, one cannot be related to that which does not exist. If thinking involves entering into a relation with the thought’s intentional object, then, *prima facie*, intentional inexistence presents an unenviable dilemma: either we deny that we can think about non-existents, or multiply the ontology by the posit of *merely* intentional objects.

Kriegel argues that the adverbialist about consciousness has escaped the dilemma by denying that consciousness of *x* constitutively involves entering into a relation to *x*. In this setting, the adverbial analysis has thus been motivated as the most ontologically

¹ I make special reference to Tye’s (1984) endorsement of the intensional semantics for adverbialism about sense-perception. This shows that one ought not suppose that Tye’s endorsement of the intensional route for *perception* should generalize to a unified adverbial theory of *intentionality*.

² Traditionally, adverbialism is a theory of sense-perception. Early proponents, such as Chisholm (1957), proposed adverbialism as a way of saving certain standard intuitions that were undermined by the then-popular sense-datum theory of visual experience.

conservative response to the observation that we can think about things that don't exist (Kriegel 2007).

But the relational line of thought is highly intuitive, to the extent that some have thought a non-relational metaphysics must be unintelligible. The basic strategy that adverbialists use to ward off the unintelligibility claim is to provide a linguistic paraphrase that shows the dispensability of relational ascriptions by replacing them with adverbial constructions (Kriegel 2007). So, for example, a statement of the form:

Smith thinks about Pegasus. (1)

is ostensibly using the verb 'to think' as a relational predicate: it is ascribing a relation between Smith and Pegasus. But the adverbialist can then demonstrate that the relational construction is not necessary by reconstructing it using adverbial modifiers and obtaining an equivalent report:

Smith thinks Pegasus-wise. (2)

Adverbialism about phenomenal intentionality is the theory that results from holding that facts about consciousness have an *adverbial structure*—they are facts about *ways* of thinking, perceiving, etc. In this way, Kriegel has argued that the adverbialist move is to show that non-relational ascriptions are perfectly intelligible by parsing them as adverbial constructions.

However, Jackson (1977) has charged that the adverbial paraphrase frequently obtains sentences that are not in fact equivalent to the originals, especially as regards their truth-conditions and their inferential structure. This is the *many-properties problem* (Jackson 1977, 64ff; Tye 1984, 205ff; Kriegel 2011, 162ff). Suppose we have the report, "Smith is thinking about a white pelican and a black crow." Prima facie, the adverbialist will paraphrase this with a logical conjunction of the adverbs like so:

Smith thinks white-ly and pelican-ly and black-ly and crow-ly. (3)

But the conjunction operator is commutative, so that switching the order of the adverbs does not change the result. The outcome, then, is that the theory treats as equivalent Smith's thinking about a white pelican and a black crow and his thinking about a black pelican and a white crow, in that both of the corresponding reports will have the same truth-conditions. This is plainly the wrong result.

In what follows, I will argue that this problem is easily overcome by adopting a more sophisticated semantics of adverbs (Sect. 5). However, only one of the two primary semantics coheres with the metaphysical views of the adverbialist doctrine (Sect. 6). Therefore, it is not a matter of simply choosing whichever semantics one likes: the adverbialist ought to endorse an event semantics for adverbs. This result is not an unhappy one for the adverbialist, since the event adverbialist will be in an advantageous position with respect to answering refined challenges arising from the traditional many-properties problem (Sect. 7).

Before proceeding to the main argument, a few more words about motivation for pursuing a novel in-depth solution to the many-properties problem. To put the matter

simply, adverbialism is a promising view because it is a non-relational account of intentionality motivated by the observation that we can think about non-existents. But why should we put stock in adverbialism, as opposed to some other non-relational theory? Crane (2001a, b, 2013), for example, offers one of the primary competing non-relational accounts. He distinguishes between a thought's being *about* something (its being intentional) and a thought's having a *reference*. Aboutness, on this account, is a non-relational notion, in contrast with reference, which is a genuine two-place relation. According to Crane, all thoughts—indeed, all intentional states—are about something and so they have an intentional object as a matter of their intrinsic properties. But, contrary to the orthodoxy in act-object theories, Crane argues, this does not automatically entail that the state is relational. To think about non-existents is to have a thought with an intentional object, but one that fails to refer. To make this solution work out, we merely need to revise our notion of what it is to be an intentional object. For too long we have been led astray by the Meinongian tradition which holds that there is some substantial property of being an intentional object that grounds the ontological classification of a distinct kind, and that it is due to the nature of *this* property that objects intended can fail to exist. By contrast, Crane's approach is to drain the notion of 'intentional object' of any ontological essence. To say that something is an intentional object is to say that it is represented for a subject, and tells us nothing about the nature of the intentional "object". Rather, a subject's having a representation of something is sufficient for aboutness.

I have two reservations about Crane's approach, one more general and the other more technical. First, Crane wishes to reject the Meinongian framework in which intentional inexistence is explained in terms of the peculiar properties of a distinctive kind of object. But Crane's approach of loading intentional inexistence into the intentional object is ultimately Meinongian in its own way: instead of postulating a rich array of non-existent objects, it postulates a rich array of non-referential mental representations. The comparative advantage of the adverbial approach is that it makes do with a simpler event ontology which many think we already need for other reasons. My second reservation arises from the following problem. Crane's distinction between aboutness and reference is fine-tuned for the purposes of intentional inexistence, but the theory leads to unintuitive consequences in its treatment of thoughts about existent entities. For example, it permits the situation in which two subjectively indistinguishable thoughts can be *about* the same (existing) thing and yet *refer* to two different things (Zarepour 2018). This problem arises from Crane's reduction of aboutness to representation, together with his phenomenological notion of representation.³ The result is that the intrinsic facts regarding the way a subject represents something can be the same in two distinct states, and yet due to differing extrinsic relations the references of the two states can differ. Adverbialists, by contrast, locate the crucial distinction in a contrast between *intentionality* and *representation*. They can avoid this problem by holding that representation is a success term, constructed out of the more basic notion of a mental modification. On such a view, adverbial properties make a state representation-apt, but they represent only when successful. Of course, it would

³ As Crane says, "Aboutness is the mere representation of some thing in words or thought, whether or not it exists" (2013, p. 9).

not be a trivial project to explain how it is that an experience can be representational solely in virtue of its experiential properties, but many philosophers have taken this to be possible (cf. Siewert 1998; Kriegel 2011, p. 166).⁴ By taking this route, the adverbial theory has the same benefit as Crane’s approach with respect to thoughts about non-existents, while at the same time avoiding the odd result that two thoughts about existing entities can be *about* the same thing and *refer* to two different things. To be clear, I do not take myself to have given a decisive rejection of Crane’s very interesting theory here, and it is not my goal here to demonstrate that adverbialism has an incontrovertible superiority to competing non-relational theories. It is enough for present purposes, then, to point to at least one advantage of adverbialism to indicate that it is at this stage worth pursuing adverbialism as one of the non-relational options.

3 Intensional adverbialism

The intensional account of adverbial modification holds that adverbs are—or can be captured by—*intensions*, or meanings. These abstract entities are formalized in the usual way as mappings from worlds or states to extensions. This approach originates in Thomason and Stalnaker’s (1973) application of Montagovian intensional logic to the problem of adverbial modification.⁵

Formally, then, let us take *intensional adverbialism* to be the view that phenomenal intentionality involves a subject’s instantiating a psychological type captured by the relevant intension of the predicated property. On this view, the relevant intensional modification is a modification of the *subject*, and consists in her instantiating of a psychological type. Semantically, then, the view entails that intentionality can be analysed by non-quantified subject-predicate structure, using special operators added to a predicate logic. For example, we begin with the ascription of thought to an individual:

$$T(x) \tag{4}$$

Here, (4) is to be read: “*x* thinks.” Adverbial modifiers will precede these basic subject-predicate statements:

$$\hat{\wedge}R(T(x)) \tag{5}$$

Here, we use the intension operator, $\hat{\wedge}$, to mark the fact that adverbial modifiers make use of the *intensions*, rather than the extensions, of the relevant term (Gamut 1991, 117ff, Dowty et al. 1981, 154ff). In this example, (5) is to be read: “*x* thinks *R*-wise”, where $\hat{\wedge}R$ is the adverbial modifier denoting an intensional function that maps the property of thinking to the property of thinking *R*-wise.

Hence, thinking red-ly does not involve attributing the *property* of redness to a subject, but rather involves a psychological type which is related to redness as intension is related to extension. This is intuitively the right result: after all, if a subject has a red

⁴ More on this issue in Section 6.2, below.

⁵ See the “Appendix” for a fuller characterization of the intensional semantics for adverbs.

afterimage, we do not want to attribute to them the very same property as we attribute to a red physical object. Another primary motivation for using the approach is the way it can capture the sense in which the contents of our intentional states are somehow reliant on our conceptions of the world. Suppose, for example, that Smith is thinking about a cordate, but that Smith does not believe that all cordates are renates (to use the famous Quinean example). Then, on the relevant reading of the following sentences, inference (6) is invalid:

- (a) Smith thinks cordate-wise.
- (b) All cordates are renates.
- (c) Therefore, Smith thinks renate-wise. (6)

The Montagovian tradition would block this inference by assigning distinct intensions to the adverbial modifiers in (6a) and (6c) and arguing that it is the intensions of ‘renate’ and ‘cordate’ that contribute to those thoughts. This move blocks free substitution of the two terms with one another, since it is merely the extensions that are identified in (6b).

What the example illustrates is that the adverbial modifiers vary their extensions across possible worlds, so this systematically predicts the ways in which the contents of our thoughts can come apart from the actual world and that the contents and character of our intentional states are importantly tied the way we conceive of things. Thus, the problem of intentional inexistence is given the following gloss: when subjects think about non-existents, subjects instantiate a representational property that is modified by representations whose extensions vary over possible worlds. Prima facie, the use of intensional functions therefore provides a formally elegant solution to the problem of intentional inexistence, for then thoughts are free to traverse mere possibility.

4 Event adverbialism

The competing approach, which I seek to defend, results from the application of Davidsonian event semantics for adverbs (Davidson 1967, 1985; Parsons 1990) to the analysis of phenomenal intentionality.⁶ The key difference between this approach and the previous one will be that a characterization of consciousness is not a matter of a subject instantiating a psychological type; rather, it analyses consciousness as the way a concrete event occurs. On this view, consciousness is emphasized as a way of *doing* rather than a way of *being*, and represents a variant of the view that the relevant intentional modification is a modification of a subject’s *mental event*.

The motivation behind the event view can be given as follows (cf. Tye 1984, pp. 201–202). Suppose Smith begins thinking about mythical creatures. We attribute to Smith the following experience:

- Smith thinks about Pegasus. (7)

⁶ Again, see the “Appendix” for a characterization of event semantics for adverbs.

The adverbialist, recall, wants to avoid the result that (7) entails that Smith is related to Pegasus. So they have revised the surface grammar of the ascription to:

Smith thinks Pegasus-wise. (7')

One way of working this out is to say that (7) is parallel to the following⁷:

Smith smiles a cheerful smile. (8)

This is an acceptable way of ascribing a smile to Smith with a surface grammar that makes it appear as though ‘to smile’ is a relation between Smith and a cheerful smile. But most people do not think that there are objects that are smiles to which someone is related when they smile. Rather, facts about smiling are facts about Smith’s being the subject of a smiling event that occurs in a particular way—cheerfully:

Smith smiles cheerfully. (8')

The event adverbialist would hold that there is a strong parallel between facts (7) and (8): they both concern events occurring in a particular way. In the same way that there is no smile, and only a smiling, Smith’s thinking of Pegasus is simply an *event of thinking that occurs in a particular way*—Pegasus-wise. The phenomenal feature that grounds consciousness, then, is a *way of doing some activity*.

With these intuitions, the event view can be regimented by the Davidsonian event semantics. The crucial idea is that adverbial modification is the attribution of a property to a concrete, particular event. The analogous proposal in the present setting is that experiential intentionality is to be analysed by existentially quantifying over concrete, particular experiences occurring *x*-wise. So, on the event analysis, (7) and (7') are analyzed like so:

$\exists e[Subj(e, s) \& e_P]$ (7'')

For present purposes, assume that the existential quantifier ranges only over events *e* that are conscious thinking experiences (though of course this can be generalized to any kind of intentional mental state). Here, ‘*Subj(e,s)*’ picks out the subject of the experience, Smith; and *e_P* attributes the Pegasus-wise mode of occurring to the experience. So, (7'') is to be read: “There is an experience, *e*, such that the subject of *e* is Smith and *e* is modified Pegasus-wise.”

The event approach to adverbialism therefore revises the surface grammar of ascriptions in a more radical way than its competitor. Formally, attribution of consciousness to a subject is no longer a matter of standard subject-predicate structure, but rather involves a hidden quantification over experiences. So consciousness will be grounded, not in the instantiation by a subject of a psychological type, but rather in the existence of an experience that a subject *undergoes*. The adverbialist need not, of course, hold that what people “really mean” in normal circumstances when they attribute conscious states to people involves some hidden quantification. Rather, they only need hold that

⁷ In a modification of Tye’s example (1984, 201ff).

the underlying *facts* are better reflected by the event-quantification structure, given the problem of intentional inexistence.

This revision of the surface grammar may initially seem like a disadvantage of the theory. But any intuitive cost comes at great theoretical advantage, as we will see in Sects. 5–7 below. For, this revision will offer the strongest dialectical positioning for the adverbialist, and it will recover at a structural level crucial inferences that become problematic for the competing intensional approach. I will also argue that the intensional method of avoiding commitment to concrete experiences leaves the theory unavailable to carry through the adverbial intuitions.

5 Semantics for adverbs and the many-properties problem

I have so far shown how the two competing frameworks for the semantics of adverbs work when applied to the adverbialist theory. I will now demonstrate the formal resources provided by the semantics to revive adverbialism about consciousness against the traditional many-properties problem, as described in Sect. 2. However, I will then argue that the formal resources of the intensional theory leave that theory philosophically inadequate to the task, in contrast to the event theory (Sects. 6 and 7).

Recall that the many-properties problem is illustrated by the following example. Suppose we have the report, “Smith thinks about a white pelican and a black crow.” The naïve adverbial machinery paraphrases this into:

Smith thinks white-ly and pelican-ly and black-ly and crow-ly. (3)

But (3) assigns the same truth conditions as it does to the report, “Smith thinks about a black pelican and white crow.” So the theory finds one thought where there should be two.

The most obvious solution is to fuse adverbial modifiers into simple, unstructured entities:

Smith thinks white-pelican-ly and black-crowly. (3')

This solves the initial *ambiguity problem*, i.e. the problem of disambiguating the two states. But as Jackson (1977) famously argues, there is the additional *inference problem*: the unstructured fusion solution gives up compositionality and thereby loses inferential structure that was present in the non-adverbial constructions (cf. Kriegel 2011, p. 162). For example, we want to be able to reason from, “I think white-pelican-ly” to “I think pelican-ly”. But this inference is lost when white-pelican-ly is treated as an unstructured adverb. The adverbialist thus fails to give equivalent paraphrases after all.

Let us first examine the approaches available to the event semantics. A first pass might be to quantify over two distinct events, e and f , whereby e is the white-wise pelican-wise event and f is the black-wise, crow-wise event:

$$\exists e \exists f [Subj(e, s) \& e_W \& e_P \& Subj(f, s) \& f_B \& f_C \& e \neq f] \quad (3'')$$

This analysis solves both the ambiguity problem and the inference problem. For, it assigns distinct truth-conditions to the relevant reports, and the inferences are secured as instances of conjunction elimination.

But (3'') is insufficient in the present setting because it requires that the same person be the subject of two simultaneous intentional events. We could, following Tye's suggestion, respond to this problem by claiming that it is no less plausible for this to be the case than for a person to undergo two simultaneous stabbings (1984, p. 207). This response seems workable in Tye's context: since he is addressing sense perceptions, the idea is that each event stands in for a different sensing.

Tye's response fails on the event view of *intentionality* because events here are standing in for experiences. In this context, we need to be able to differentiate between ascriptions that ascribe a complex content to *one and the same experience*, from those that ascribe a different content to two different experiences. The regimentation of (3) by (3'') is thus ambiguous between two readings: Smith's having one experience characterized by the simultaneous experience of many properties, and Smith's having two separate experiences each characterized by a given set of properties. So the ambiguity problem resurfaces.

The better way forward is to use the device of an event mereology, which has been developed in considerable detail in the semantic literature (Schein 1993, 99ff). To the event space we assign a highly intuitive set of part-whole relations that satisfy a set of standard axioms whose universal closure forms a mereology.⁸ We would then say that the white pelican constitutes one *part* of the experience's content, while the black crow constitutes a distinct (i.e., non-overlapping) *part* of the same whole experience. The event semantics regiments this like so:

$$\exists e[\exists e' \leq e(\text{Subj}(e', s) \& e'_W \& e'_P \& \exists e'' \leq e(\text{Subj}(e'', s) e''_B \& e''_C \& \sim (e' \mathbf{O} e''))))] \quad (3''')$$

This should be read as translating from the adverbial construction, “Smith thinks white-ly and pelican-ly and black-ly and crow-ly” to the event-semantic structure: “There is a thinking experience, e , such that Smith is the subject of e and there two parts of e , e' and e'' , and e' occurs in a white-wise and pelican-wise way; while e'' occurs in a black-wise and crow-wise way, and e' does not overlap with e'' .” It is evident that this statement will assign distinct truth-conditions to the two relevant thoughts, so that the ambiguity problem is solved. And the inference from ‘Smith sees white-ly and pelican-ly’ to ‘Smith thinks pelican-ly’ is clearly available by the elimination of conjuncts. The event mereology thus adds enough structure to defend against both parts of the many properties problem.

Let us now examine the resources for the intensional approach. The intensional logician will point out that compositionality can be recovered by adding an additional functional operator to the semantics. Following Tye (1984, 218ff), let us call this the ‘Coincidence’ operator. The Coincidence operator maps two adverbs to a conjoined output adverb. For example, the operator takes an adverbial modifier $\wedge W$ (white-ly)

⁸ For the complete standard axiom set forming a mereology applied to events, see (p. 97) in Schein (1993, pp. 99–100).

and $\wedge P$ (pelican-ly) and maps them to a new intensional function, $Coin(\wedge W)(\wedge P)$, (white-ly-coincidental-with-pelican-ly).

With the use of the Coincidence operator, a solution to Jackson’s problem for (3) looks like so:

$$Coin(\wedge W)(\wedge P)(T)(s) \ \& \ Coin(\wedge B)(\wedge C)(T)(s) \quad (3''''')$$

Here we have the ascription: ‘Smith thinks white-ly-coincidental-with-pelican-ly and Smith thinks black-ly-coincidental-with-crow-ly.’ Such formalization clearly solves the ambiguity problem by assigning distinct intensional functions, resulting in distinct truth-values. And it certainly provides the resources for the inference from “Smith thinks white-ly-coincidental-with-pelican-ly” to “Smith thinks pelican-ly”. For, ‘white-ly’ and ‘pelican-ly’ are both syntactic elements of the complex predicate formed by ‘white-ly-coincident-with-pelican-ly.’

6 A defense of event semantics

I have just explicated the formal tools available to each of the semantics to solve the many-properties problem, demonstrating that both of these theories provide elegant formal resources in this domain. But I will now argue that the intensional theory will be philosophically inadequate to its task. For it will solve the many-properties problem only at the cost of sneaking an act-object relation back in. The event theory, by contrast, will be shown to be better off in this regard.

6.1 Against intensional adverbialism

To start, note that the modifiers here are most naturally understood to be disguised descriptions with a comparative normal cause connotation (Tye 1984, pp. 217–218). For example, the function $Coin(\wedge W)(\wedge P)$ stands in for that state which would, in normal circumstances, supervene on a subject’s viewing a real physical object having the properties of being white and being a pelican.

The move that Tye makes here is standard in the Montagovian tradition, and in fact represents one of the key motivations for the intensional theory of adverbial modification in the first place. The way that intensional functions capture meaning is to assay the sense in which a given representation supervenes on the world. This tradition blocks inferences such as (6), above, by operating on intensions rather than extensions, but compensates by adding meaning postulates. Hence, to use a further example, this tradition blocks the inference from ‘is a robotic pelican’ to ‘is a pelican’ by insisting that ‘robotic’ modifies the intension of ‘pelican.’ But then it compensates by adding a meaning postulate for the lexical entry for colors to ensure that ‘is a white pelican’ entails ‘is a pelican’ (Dowty et al. 1981, p. 234).

So intensional logic insists that we can only make the kinds of inferences relevant to the many-properties problem by routing through meaning postulates that capture the ways in which meaning supervenes on the world. This basic idea is systematic

to intensional logic *simpliciter*, and so also undergirds the intensional approach to adverbs. That is to say, the intensional approach to adverbs starts from the parallel observation that, e.g., inferences from ‘x runs swiftly’ to ‘x runs’ are good, but inferences from ‘x allegedly runs’ to ‘x runs’ are not good (Fara 2012).⁹ The theory uses intensions to disallow inferences of this sort at the structural level, but then posits meaning postulates to recover the desired inferences.

But this leaves intensional adverbialism unavailable to play its prescribed role in the dialectic as an alternative to relational theories. In order to capture the inferences we want, we will have to draw on a stock of meaning postulates. But the meaning postulates that the intensional adverbialist will have to assume will be nothing more than the trace of the old tracking theory: when one asks why this but not that meaning postulate is assumed, we will most naturally fall back into talk that some but not all representations *track* this or that part of the world. Failing that, it is hard to see how the intensional adverbialist will substantiate her meaning postulates without invoking the contribution of the ‘object’ position of some other sort of act-object relation.

In short, the intensional method of solving the many-properties problem rests on the invocation of an act-object relation at a crucial juncture. Ultimately, the theory will be immune to the many-properties problem only by tacitly making use of the same resources available to the relational accounts. For example, Fodor’s tracking theory obtains “white pelican”, instead of, say, “white crow” experiences by virtue of the way the content of such an experience supervenes on perceptual relations to a physical object that is white and is a pelican (Fodor 1987, p. 126; cf. Kriegel 2011, p. 72). In this way, the approach rises and falls with the very theories it is supposed to be an alternative to in its dialectical moves—it is a mere notational variant on the same intuitive picture.

Here we should pause to consider an important set of objections. I maintain that the way to be an adverbialist is to adopt the event semantics for adverbs, and so far I have argued for this by showing that the alternative leads the adverbialist to sneak a kind of act-object relation back into the core of the account. First, can’t the intensional adverbialist respond that such relations merely (sometimes) *ground*, but do not *constitute*, the intentionality of a thought?¹⁰ Second, isn’t the event adverbialist subject to the same worry? After all, suppose the event adverbialist was pressed about how the mereology disambiguates the relevant mental states. To obtain the right phenomenology, won’t she too have to lean back on some variation in the ‘object’ position of an act-object relation? For example, won’t it be equally natural for the event adverbialist to rely on the very same sorts of disguised descriptions that landed the Montagovian in trouble? If this is the case, then the intensional adverbialist is no worse off than the event adverbialist. Indeed, Woodling (2016) has suggested that the adverbialist in general cannot make sense of her position without tacit appeal to an act-object relation.

But I claim the intensional adverbialist is worse off here, since only the intensional adverbialist will be subject to the following destructive dilemma: either she reverts to

⁹ See the Appendix, below.

¹⁰ Indeed, Kriegel allows for this, arguing that the adverbialist can accommodate externalist relations as *causally* involved in the account, as long as they are not involved in the *constitutive* ingredients of intentionality (2007, p. 321; p. 337, fn 58).

an act-object relation at crucial junctures, or her appeal to intensional logic is at best *ad-hoc*, and at worst inconsistent with intensional logic. Let us flesh out this dilemma.

First, suppose the intensional adverbialist denied that she was inevitably going to fall back into an act-object relation. After all, the move that Tye makes in interpreting the coincidence function here is not *necessary* to interpreting the formalism. The problem is that Tye's move presents the most natural intended interpretation insofar as it coheres with fundamental conceptions of the Montagovian approach to meaning.

It therefore does not help one's case to invoke the *modifier detachment rule* for functional operators here, as Tye does (1984, p. 218). The modifier detachment rule would state that the coincidence function is governed by the following two rules: $Coin(\wedge F)(\wedge G)(T)(x)$ entails $(\wedge F)(T)(x)$ and $Coin(\wedge F)(\wedge G)(T)(x)$ entails $(\wedge G)(T)(x)$ for any functions F and G . But this is false on the intensional approach to adverbial modification, for such a rule thoroughly undermines the motivations for treating adverbial modification using the intensional machinery in the first place. The intensional machinery requires that one route through a meaning postulate to obtain the relevant inferences and to reject this approach to inference is to reject the intensional approach entirely.

From this vantage, we can see that the intensional approach fulfills its adverbial ambitions only at the expense of giving up on basic commitments of intensional logic. As a result, the intensional adverbial theory is ineluctably in tension with either adverbialism or intensional logic. There simply is no harmonious synthesis available of these two theories. This is partly because motivations in favor of adopting the complex intensional machinery in other familiar contexts don't in the final analysis carry over to the case of adverbialism about intentionality. The use of intensional logic in analyses of knowledge, for example, such as in Nozick's (1981) tracking theory of knowledge, look well-motivated because intensional logic can capture the sense in which knowledge supervenes on the world (after all, one cannot know something unless it is true). But just the *inverse* motivation is involved in adverbialism about intentionality: we precisely want to capture the ways in which thought *fails* to supervene on the world in the phenomenon of intentional inexistence.¹¹

In sum, avoiding the slip back into relationalism would leave the intensional theory at best ill motivated, and at worst inconsistent with the most fundamental ideas of intensional logic.

6.2 In favor of events

I have argued that there is no harmonious synthesis of adverbialism and intensional logic. Now I want to argue that by contrast there is an interesting harmonious synthesis of adverbialism and event semantics on the table. At a deep level, I will argue, this is the result of the fact that the intensional adverbialist—but not the event adverbialist—is led to preserving the substance-metaphysical picture of intentionality, in which consciousness is analyzed with a psychological type being predicated of a substance.

¹¹ This perhaps partly explains why our results in the case of *intentionality* depart from Tye's endorsement of the intensional approach for *sense-perception*. The motivation to solve the problem of intentional inexistence does not feature in Tye's case.

It thereby avoids thinking of experiences as concrete, particular entities. But philosophically I believe it is just this move that makes it inadequate for carrying through the idea that consciousness is an intrinsic feature of the mind. For we have seen how this move leads the adverbialist into the quandary just described.

We can see the resources of the event view to lead the adverbialist out of the quandary by first examining the nature of the events at issue. Since the theory employs first-order quantification over events, it is committed to experiences as concrete, particular entities. How do we think of these entities? It is well known that Davidson (1967) held that events are *simple* particulars. In the present setting, however, there is good reason to prefer something closer to Kim's view that events are structured *wholes with constitutive properties* (Kim 1976, Horgan 1980). In short, the reason to prefer the constitutive view of events is that it rids them of their independent ontological status. On the constitutive view, experiences cannot exist without the existence of a subject, since the subject is a constituent of the event—an event will only exist in the possible worlds where its subject exists. There is therefore no worry of unexperienced experiences lurking in the ontology (cf. Tye 1984, p. 204).

The relationship between subjects and consciousness, then, is thrown into a different light. The relationship between a subject and her consciousness is not an instantiation relation, but rather a mereological relation. Consciousness is not a synchronic psychological type that a person instantiates among other properties. Rather, subjectivity is a property of the event; to be a conscious subject is to be the subject of an event as a part to a whole.

How does this save the event adverbialist from the sorts of worries incurred on the intensional theory? The attempt to avoid the posit of concrete, particular experiences over which we quantify restricted the intensional theory to a traditional picture of intentionality whereby the phenomenological properties of an experience are the contribution of the *object* of an act-object relation. On such a traditional picture of intentionality, an object brings about changes in a person's psychological or physiological state (or both), and an object is perceived. This view arguably extends back to Aristotle, who argued that the sense organ becomes like the object perceived insofar as it takes on the form without matter in the same way as a piece of wax impressed by a metallic object takes on the form of that object without taking on the metal (*De Anima* II.5 418a 3–7; 424a 18ff). More sophisticated versions of this kind of view in the tracking theory of consciousness have given a semantic analysis of the intentional relation in which nevertheless the phenomenology of experience is a contribution of the way that changes in brain states supervene upon changes in the physical objects to which the brain is causally or teleologically related.¹²

By contrast, the event semantics opens the way to a non-traditional *act-based* metaphysics of intentionality wherein the phenomenological properties of an experience are properties intrinsic to that experience itself, contributed by subjective activity of the mind.¹³ Such theories in which the mind is more than a passive recipient of sensa-

¹² Causal versions to be found in Fodor 1990 and Dretske 1981. Teleosemantic versions of such theories can be found in Milikan 1984, Papineau 1993 and Dretske 1995.

¹³ Note that the claim is not that an act-based conception of intentionality is *necessarily* a result of adopting the event semantics, but that it naturally flows into it. The event semantics, with its quantification over

tions can arguably be traced back to Kant.¹⁴ The conception of the mind as an active contributor to the phenomenology of experience was central to the phenomenological tradition, and has received increased interest in recent philosophy of mind and cognitive neuroscience.¹⁵ On my conception of adverbialism, adverbialism is in this tradition in which the explanation of conscious intentionality foregrounds the active contribution of the mind in its posit of concrete experiences that have adverbial properties. Husserl, for example, argued that mental contents derive their intentional content only from an act of consciousness that “animates” or “interprets” the sensations. Thus a passive registration of incoming sensation requires modes of mental activity to become an intentional content. Consider, for example, a case in which you and I both have a perception directed on a black crow. It cannot be sameness of the incoming sensations that fixes sameness of the intentional contents of our respective perceptions. For, from your angle, the lighting conditions give you a sensation that is slightly different than the visual sensation I receive. According to Husserl, the sameness of intentionality derives from the fact that we both instantiate the same kind of act. Just as the visible color property of the crow itself belongs to the color kind, ‘black,’ so too are our acts of perception instances of the same kind of act—that of perceiving black. And it is in virtue of our instantiating this kind of act that it can be said that our perceptions have the same phenomenal intentionality. As Husserl says:

Different acts can perceive the same object and yet involve quite different sensations. The same tone is at one moment heard close at hand, at another far away. The same sensational contents are likewise “taken” now in this and now in that manner Interpretation itself can never be reduced to an influx of new sensations; it is an act-character, a way of being conscious, of ‘mindedness’” (Husserl 2001, p.103).

Another way to conceive of an act-based approach to intentionality is to think of its analogue in the philosophy of language (Moltmann and Textor 2017). Begin with the familiar distinction between a *propositional attitude*, on the one hand, and its *content* (the proposition itself), on the other. An important question concerns whether the intentionality of a propositional attitude derives from an inherent intentionality of the proposition, or whether the proposition receives its intentionality from an act of judgment. If it’s the case that propositions have their intentional properties independently of acts or attitudes, then we should expect a satisfying account of just what mind-independent property it is that makes propositions the kind of thing that are truth-apt.

Footnote 13 continued

concrete events, is a formalization of the strategy of holding adverbial modifications to be modifications of a state/event of a subject, rather than modifications of the *subject* herself (as in the intensional approach) (cf. Mendelovici 2018, ch. 9). On this point, Kriegel and I agree. Given this strategy, I think the way to avoid Woodling’s (2016) worry that any variation in phenomenology will have to be derived from variation the object of in an act-object relation is to understand the event semantics as giving way to an act-based metaphysics of intentionality. All things considered, then, it seems to me that the suggestion of combining the strategy of holding intentionality to be a modification of a mental event with the move to an act-based metaphysics of intentionality is the way to save adverbialism.

¹⁴ The invocation of Kant here is meant solely as a hermeneutical device. I do not intend here to claim to be giving a Kantian theory of intentionality or to take any exegetical stance on issues in the interpretation of Kant.

¹⁵ See, e.g., the literature on predictive processing, e.g., in Wiese and Metzinger (2017).

But this reification of propositions is rather mysterious and has puzzled philosophers at least since Bolzano's introduction of the distinction between acts and contents. In this setting, the idea is to shift from understanding propositions as abstract truth-bearers to a focus on cognitive acts of subjects as constituting the intentionality of propositional content. It is an act of cognition that provides the unity of intentional content *qua* intentional.

A few caveats are in order. The theory of adverbialism I have sketched is not a theory of the sufficient conditions for a state to be conscious. For it is so far silent on the problem of identifying the nature of those modifications contributing to an experience's intentionality that would set them apart from those modifications that are irrelevant with respect to intentionality. For example, what makes it the case that thinking white-wise and pelican-wise establishes an intentional content, while thinking seriously and frequently does not do so (Voltolini 2009)? As Kriegel points out, an initial approach is for each individual to grasp this distinction by ostension, through reflecting on one's own experience (2011, p. 155). This procedure may permit some ostensive grasp on the *contrast* between the modifications relevant to intentionality and those irrelevant. However, it will presumably tell us little about the nature of the modifications themselves by virtue of which they are the relevant ones, and it will therefore provide no way of defining the distinction theoretically. But the adverbialist seemingly owes a properly theoretical account of this distinction, since she is committed to reconstructing intentional notions in terms of adverbial notions; she cannot presuppose a ready-made property of *having an intentional content* to do the work. One potential approach to this problem that is consistent with my adverbialism is to draw a further distinction within the structure of intentionality between the *modality* and the *mode* of presentation (Smith 1986, 2016). The strategy here is to deflate the distinction between relevant and irrelevant modifications. On this view, such modifications as thinking seriously *do* play some role in the intentional character of an experience. On the side of modality are those modifications of an intentional state that have a *thetic character*, or mind-to-world direction of fit. Hence thinking seriously is an aspect of an intentional state's thetic character, which figures into the intentional characteristics of a mental state by modifying the state's modality of presentation. By contrast, on the side of the *mode* of presentation are those modifications of a mental state that figure into the properties the world is presented as having, i.e., those with a world-to-mind direction of fit. This sketch is very preliminary, and whether one endorses it is independent of the other aspects of the adverbialism I have put forward. But of course I have not set out here to solve *all* the problems adverbialism faces, and this remains an intriguing problem for future research that is beyond the scope of the present article.¹⁶

In this connection, it is an advantage that this theory so far makes no appeal to an inherently *representational* object. Event adverbialism, then, could be embedded within a general theory of representation, but it need not be. As a result, its principal aim is not to give an account of how a representational object becomes a conscious

¹⁶ Kriegel presents several possible approaches to this problem that I do not have room to consider here (2011, 156ff). The task, as Kriegel nicely articulates it, is to determine what the *phenomenological signature of intentionality* is, and to explicate this in terms that do not already presuppose a property of intentional content but rather construct that property from experiential notions.

representation. Rather, the semantics places constraints on the formal structure of intentional predicates, and I have fleshed this out with a mereological account of the *structure of intentionality*. Insofar as the theory recovers the inferences threatened by the many-properties problem at a *structural* level, then, it offers an explanation of the distinctive aspects of phenomenal intentionality as a matter of the distinctive structure of experiences.

We can now see in what sense the event adverbialist is better off than the intensional adverbialist with respect to the objection that any theory of experience we will come up with will appeal to variations in the ‘object’ of an act-object relation to account for variations in phenomenology (Woodling 2016). For, the adverbial gambit, viewed by the lights of event semantics, is: *there is a strict formal distinction between the predication of intentionality to a subject and the predication of properties to a substance*. This leaves the event adverbialist open to endorse a theory of intentionality wherein the phenomenological properties of experiences are contributions of the *act* of consciousness, rather than of the *object* of an intentional relation, resolving the worry that the adverbialist will have to rely on an act-object framework.

7 Grzankowski’s Objection, the Many-Relations Problem, and Propositional Thought-Contents

I have argued that the event approach to the many-properties problem gives the adverbialist a dialectical advantage over the intensional adverbialist. This led to a revisionary interpretation of the fundamental adverbial metaphysics. Why should the adverbialist accept this revisionary stance? After all, one might wonder whether working out the semantics is even warranted at this stage, given that the viability of adverbialism is an open question in the literature.

In this section I’ll argue that examining the semantics has opened novel paths for responding to three main difficulties against adverbialism in the literature. First, I will look at Grzankowski’s (2018) objection to Kriegel’s (2011) view to show that the event mereology is a better approach to the many-properties problem than would have been obviously available in the absence of any sophisticated semantic framework (Sect. 7.1). Second, I will argue that the event mereology has the resources to avoid Dinges’ (2015) refinement of the many-properties problem under the heading of the *many-relations problem* (Sect. 7.2). Finally, I will demonstrate how the event mereology treats thought-contents that are fully propositional (Sect. 7.3).

7.1 Grzankowski’s objection to Kriegel

First, to see that examining the semantics gives us a better approach to the many-properties problem than would have been obviously available in the absence of a sophisticated semantics, let us consider Grzankowski’s (2018) objection to Kriegel’s proposal (2011, 162–163). Again, we want to be able to infer from “Smith thinks about a white pelican” to “Smith thinks about a pelican.” Kriegel suggests that we adopt the unstructured predicate approach, so that we paraphrase into “Smith thinks white-

pelican-ly.” The adverb-elimination inferences are then to be explained in virtue of the fact that the pair of thoughts stands in a *determinable-determinate relation*. Being a white pelican is a determinate of being a pelican. And so the reasoning from “Smith thinks white-pelican-ly” to “Smith thinks pelican-ly” routes through a premise adapted from determinable-determinate theory: “All white-pelican-ly thinking is pelican-ly thinking.”

But Grzankowski argues compellingly that the adverbialist should want to avoid commitments to determinable-determinate theory in this domain, since it would lead to a specious multiplication of thoughts. The basic principle Kriegel wants from determinable-determinate theory is: whenever an object instantiates a determinate under a determinable, it also instantiates that determinable. But another axiom of this theory is the inverse: that whenever an object instantiates a determinable it must also instantiate some determinate under that determinable. Grzankowski argues, I think rightly, that it would be entirely ad hoc to suppose we could cherry-pick the one principle without getting the other along with it. But this then leads to the conclusion that any thought instantiating a determinable must also instantiate a determinate under that determinable. That means anytime anyone thinks bird-wise, they must at the same time be thinking of some particular sort of bird. But this doesn’t seem right. It may be that I am going bird-watching, hoping to see a bird, but that I have no particular sort of bird in mind. In this case, it seems that I am thinking bird-wise without thinking of any further determinate of bird-wise. But being a species of bird is a determinate of the determinable, being a bird. So, by the application of determinable-determinate theory, I must therefore have some species of bird in mind.

On the present event-mereological approach, the inferences are obtained as instances of conjunction elimination, and so no appeals to the determinable-determinate relation are needed. Given the long-established ubiquity of the many-properties problem in discussions on adverbialism, it is not clear that the conjunction-elimination approach could be made viable in the absence of the mereology I have introduced on the event semantics.

Of course, the event mereology would provide no relief if it were the case that the part-whole relations imposed on the event space had a relevantly similar structure to the determinable-determinate relation. But it is easy to see that the mereology imposes no such analogue. For, the mereology allows for a high degree of context-sensitivity in individuating its domain of events, and the basic mereological axioms place no condition on the structure of the modifiers that individuate events.¹⁷ The stock of modifiers in our discourse is what determines how many and which events exist, and the modifiers we have will be relative to the context of the individual making phenomenological descriptions. So, if Smith describes his phenomenology as a bird-wise thinking, without his taking himself to think of any particular color of bird, there is no reason to suspect that this will automatically generate an event under a more determinate description.

¹⁷ Cf. Reichenbach (1947) and Goodman (1956), who show how the individuation of events is dependent upon the context of description.

7.2 The many-relations problem

In a related charge, Dinges (2015) argues that no viable approach to adverbialism is forthcoming. Even if the adverbialist manages to solve the many-properties problem, he contends, the problem resurfaces at the level of *relations*. Dinges argues in detail that Tye's *Coin* function fails to solve the problem, and to this I have no objection. In a footnote, he briefly considers the approach from event semantics. But neither Tye nor Dinges consider the resources that event mereology provides.

A full discussion of the many-relations problem is beyond the scope of the present article. However, it is easy to see that the event mereology provides rich resources in this domain. Consider for example, Dinges' case of someone's visual field being populated with after-images that need to be set in spatial relations:

Jane has a red afterimage that is overlapping with a green one and to the left of a yellow one. (9)

To deal with such a situation, we can understand the event mereology as defining part-whole relations analogous to spatial relations on a visual space. The key move is to understand these relations as obtaining not in space–time but in Jane's visual field. Parthood of an event, then, can be interpreted as spatial inclusion in the visual field. Then by means of basic mereological concepts, such as that of *parthood* and *overlapping*, we can obtain many of the needed structures.

But the mereological resources for the representation of spatial relations may not be rich enough. Certainly if we'd like to capture such notions as boundary conditions, connectivity, and continuity, we will need more expressive power. For such purposes, the mereology acts as a base theory that can be extended by a topology to obtain spatial representation on the event space (Casati and Varzi 1999). This would increase the expressive power of the theory to represent any of the various kinds of spatial relations that would be required to articulate the phenomenology of the visual field. One might worry, then, that such richness would over-extend, and that we would end up countenancing entities that end up looking much like the sense-data or the merely intentional entities that adverbialists seek to avoid. But Casati and Varzi (1999) have shown in detail how to extend a base mereology by the addition of a topology as a purely structural matter, i.e., while remaining neutral on ontological commitments about spatial entities countenanced. An event mereotopology is compatible with many different views about the ontology of the visual field.

One will likely object that it's unclear what it is for a part of an event to be brighter than, or to the left of, another part of an event. But given the models available in the mereological literature, it seems no more problematic to proceed with these tools than it is to say that part of a baseball game is louder than another part, or that a part of a movie was brighter than another part, or that one part of a play occurred to the left of another part. We talk in this way about events all the time, individuating parts of events, referring to those parts directly, and placing them in relations to one another. And just as often we speak of different parts of our visual field, such as when one reports that she sees a white pelican in the left of her visual field and a black crow in the right. Insofar as the event semantics is coherent in its approach to adverbial

modification, and insofar as the mereotopology developed by Casati and Varzi (1999) applies to events, there is little reason to suppose that it is incoherent to interpret such reports with the use of a mereotopological apparatus.

7.3 Propositional thought-contents

So far we have been concerned with intentional contents that are not propositional (such as Smith's thinking about a white pelican). However, adverbialism has traditionally promised to cover both non-propositional and propositional intentionality. And part of what has motivated Kriegel's revival of adverbialism is the treatment of intentional *thought* that it permits. So certainly a defense of adverbialism owes an approach to propositional thought-contents. There is a difficulty here, however, since it seems that Jackson's many-properties problem once again rears its head when we turn to propositional contents.

Let us return to the case of Smith, who is bird-watching and thinking about white pelicans and black crows. Suppose that Smith, upon seeing a white pelican and the black crow, has the propositional thought, "White pelicans are bigger than black crows." The obvious way to represent this in the event semantics is to assign a third part of the event that is modified by the bigger-than relation:

$$\begin{aligned} \exists e[\exists e' \leq e(\text{Subj}(e', s) \& e'_W \& e'_P \& \exists e'' \leq e(\text{Subj}(e'', s) e''_B \& e''_C \& \exists e''' \\ \leq e \& e_{BT} \& \sim (e' O e'') \& \sim (e' O e''')))] \end{aligned} \quad (10)$$

Here, (10) is read: 'There is a thinking experience, e , such that Smith is the subject of e and there are three parts of e , e' , e'' , and e''' , and e' occurs in a white-wise and pelican-wise way; and e'' occurs in a black-wise and crow-wise way, and e''' occurs in a bigger-than-wise way and e' , e'' and e''' do not overlap.' However, it is evident that this formalization is ambiguous. For its truth-conditions are compatible with a state having the content, "Black crows are bigger than white pelicans". Of course, the unstructured fusion approach is equally insufficient, for, just as in the non-propositional case, it will only solve the ambiguity problem by reinstating the inference problem.

A solution is to permit the analysis of thought-contents with a slightly modified version of a tool from syntactic theory employed extensively in event semantics by Parsons (1990, ch. 5) and Schein (1993). Just as we have made use of the special 'Subj(e, x)' marker to indicate the special role played by the subject of an experience, we introduce additional new distinguished syntactic positions that correlate to additional semantically significant thematic roles. *Thematic roles* are a method employed by event semantics to syntactically mark out special semantic roles played by various event-modifiers in the sentence. While the 'Subj(e, x)' marker indicates the subject of the thinking, we have the 'Theme(e, x)' marker to differentiate the structure of the propositional content:

$$\begin{aligned} \exists e[\exists e' \leq e(\text{Subj}(e', s) \& e'_W \& e'_P \& \exists e'' \leq e(\text{Subj}(e'', s) e''_B \& e''_C \& \exists e''' \\ \leq e \& e_{BT} \& \text{Theme}(e, e') \& \sim (e' O e'') \& \sim (e' O e''')))] \end{aligned} \quad (10')$$

Thus we have: ‘There is a thinking experience, *e*, such that Smith is the subject of *e*; and there are three parts of *e*: *e*’, *e*”, and *e*”’; and *e*’ occurs in a white-wise and pelican-wise way; and *e*” occurs in a black-wise and crow-wise way; and *e*”” occurs in a bigger-than-wise way; **and the theme of *e* is *e*’**, and *e*’, *e*” and *e*”” do not overlap.’ This, together with a set of background assumptions about the thematic roles that appear in propositional thought, can suffice to add the necessary structure. The structure may be more difficult for some relations than for others (e.g., more complex propositional thoughts will require a more highly differentiated structure), but I trust that the basic method can be extended.

It should be noted that the use to which I have put the ‘Theme(*e*,*x*)’ marker to indicate propositional structure is nonstandard. However, this should not be unexpected. For, traditional event semantics is constrained by the task of analyzing the true semantic structure of natural languages. But this is not at all our concern here. As I mentioned prior, the adverbialist is not committed to any claims about natural language semantics with respect her adverbial constructions. Rather, the adverbial machinery is a device for cutting the metaphysical structure of intentionality at the joints, and so I have put the tools of event semantics in service of *that* task.

In short, I conclude that endorsing the event semantics for adverbial modification provides the adverbialist with the best way on offer to revive the adverbial approach against the long-persisting many-properties problem and its recent variants.

8 Conclusion

In sum, I have argued that the way to be an adverbialist about intentionality is to conceive of the phenomenological properties of phenomenal intentionality as an active contribution of the mind. This view is most consonant with the event semantics for adverbial modification. The adverbialist, therefore, ought to couple her dialectical strategies with a particular stance on the nature of adverbial modification, leading to a distinctive theory of intentionality. I have used the semantics for adverbial modification to throw the relevant metaphysical distinctions into sharp relief. On the intensional theory, adverbial modification turns on a substance-property predication. But the resulting formulation of adverbialism turns out to be a mere notational variant on the relationalist approaches against which Kriegel dialectically situates adverbialism, leading the adverbialist to fall prey to Woodling’s (2016) objection. By contrast, I argued that the way to be an adverbialist is to adopt an event ontology, so that the adverbialist’s key move is to posit mental acts as concrete particulars. This afforded the event adverbialist the stronger dialectical advantage in the controversy over intentional inexistence. I then argued that event-based semantics overcomes recent objections from Grzankowski (2018) and Dinges (2015) in a way superior to the methods that would have been obviously available in the absence of a sophisticated semantics.

As a parting meditation, we can ask—how does event adverbialism measure up to the ultimate metaphysical views of the adverbialist? We have shown that the event interpretation of adverbs leads us to a revisionary interpretation of the fundamental adverbial conceit. One may then worry that we have thereby incurred undesired ontological commitments that are dissonant with the motivations of the adverbialist. We

are quantifying over first-order, concrete particular events and so our resulting theory of phenomenal intentionality, at least *prima facie*, posits experiences in an event ontology. Should we be concerned that we thereby incur ontological commitments of the sort that adverbialists wanted to avoid in the first place?

I maintain that the theory I have been sketching here has every right to be called an adverbial theory. In fact, amending an event ontology to our theory of phenomenal intentionality provides a way of *fleshing out* precisely the same ontological ambitions that have motivated adverbialism from the start. Consider that Ducasse (1942) and Chisholm (1957), to whom we owe the adverbial innovation, wanted to avoid the ontologically multiplicative commitments of the sense-datum theorists. Rather than positing immaterial entities to act as the relata of conscious relations, the original adverbialists held that we only need countenance subjects, experiences themselves, and modifications of those experiences. And our event theory does just that, at least as the *constitutive* ingredients in the recipe of consciousness. From this, it is not so large a leap to step to an account of the experiences themselves as being events. After all, one way of glossing the central insight of adverbial theories is that the problems moving us to adverbialism warrant thinking of consciousness in terms of the ways in which an *activity* or *process* takes place. It seems no great contrivance, then, that we should think of the intentional experiences as *events* of a certain sort. And in fact it seems that the device of event quantification would provide an important and useful innovation on explaining just how it is that we individuate, describe, and theorize about our experiences.

This also highlights what is distinctive about adverbialism *qua* theory of phenomenal intentionality, in contrast to its original appearance as a theory of sense-perception countering sense-datum theories. I have argued that the nature of adverbial modification will interact importantly with one's theory of intentionality. Namely, as I argued, adverbial intentionality is best served by departing from the broadly Aristotelian tradition in which intentionality gains its distinctive features from contributions of the object of consciousness, to a more broadly Kantian view in which intentionality gains its distinctive features from contributions of the subjective act. But this is just what one should expect from a theory that aimed to avoid an act-object picture of intentionality in favor of acts. Perhaps, then, the lesson of intentional inexistence is that we need an account of intentionality on which intentionality is the active contribution of a subjective act, rather than a property of a mental state.

Acknowledgements I would like to thank Sean Walsh, David Woodruff Smith, Annalisa Coliva, Karl Schafer, and Uriah Kriegel for their extensive feedback on earlier versions of this paper. The final version was also importantly shaped by the insightful feedback of several anonymous referees, to whom I am also grateful.

Appendix

Semantics for adverbs

Here I briefly recall the basics of Montagovian and Davidsonian approaches to adverbs. In this way, it is not presumed that the reader has prior familiarity with these in order

to appreciate the application of these ideas to consciousness discussed above. As a first approximation, we can think of adverbs as the sorts of words or phrases that modify verbs, adjectives, or other adverbs. We are interested in the *logic* of adverbs, an inquiry centered around the question of entailment relations between sentences containing adverbs. Consider the following list of sentences:

- (a) Socrates ran swiftly across Athens.
- (b) Socrates ran swiftly.
- (c) Socrates ran. (1)

Intuitively, any sentence in this list entails any sentence below, but not above.

To motivate the move to the more complicated Montagovian or Davidsonian approaches, let us briefly see why the most naive treatment will not work. In first-order predicate logic, it is natural to parse each sentence (a)–(c) as having a simple subject-predicate structure, so that we obtain a formal representation of (a)–(c) like so:

- (a') $R''(s)$: Socrates ran *swiftly across Athens*
- (b') $R'(s)$: Socrates ran *swiftly*.
- (c') $R(s)$: Socrates ran. (1')

It is evident that this captures none of the entailment structure implicit in the original list of sentences, because in first-order logic no monadic predicate entails any other.

The Davidsonian *event* approach, further developed by Parsons, is undergirded by denial of the naive view that adverbs modify verbs *per se*. Rather, adverbs are properties attributed to events. So, for example, the event semanticist parses (c) as saying that there is an event that has Socrates as its subject and has the property of being a running event. The event semanticist thus posits a more complex logical form underneath the surface grammar: there is an implicit quantification over events, and it is the *event* that the adverb modifies.

For philosophers, the point of deep interest here is the quantification over events. Indeed, much of the philosophical debate surrounding this approach has had to do with the metaphysics of event quantification. But for the logician, the quantification over events is unproblematic and solves the problem of entailment:

- (a'') $\exists e[Subj(e, s) \& e_R \& e_W \& e_A]$
- (b'') $\exists e[Subj(e, s) \& e_R \& e_W]$
- (c'') $\exists e[Subj(e, s) \& e_R]$ (1'')

It is easy to see that the entailments are given logical form as instances of conjunction elimination.

Setting aside the event approach, the Montagovian, or *intensional*, approach to this problem has been developed by Thomason and Stalnaker (1973). The underlying thoughts are, first, that it would be nice if we did not have to stray so far from the surface grammar. Second is the idea that it should be the *meaning* of particular adverbs,

rather than the logical forms of adverbs *simpliciter*, that secures inferences. For, some adverbs should not entail in the way we have said in examples (a)–(c). Consider, for example, that, ‘Socrates supposedly ran’ should not entail, ‘Socrates ran,’ and this is due to a fact about the meaning of ‘supposedly.’ So the move to an intensional setting is quite natural.

The formal ingredients behind intensional semantics for adverbs are the intension operator, \wedge , and a predicate-modifying function, σ . The main idea is that the intension operator blocks certain inferences that can be re-instated with meaning postulates. This can be given a well-defined possible-worlds semantics, and the resulting functions can be correlated with English sentences without having to posit, as does event semantics, a hidden syntactic structure to secure the semantics.

Given an expression φ , the intension operator returns the intension of φ , i.e., $\wedge\varphi$. Adverbs—i.e., the intensional predicate-modifying functions σ —can then be prefixed to the intensions of predicates to yield new intensional functions.¹⁸ For example, if R stands for runs, then we have the intension of R , $\wedge R$. Suppose σ is a predicate-modifying function, then prefixing σ to the abstracted $\wedge R$ predicate yields the new intension $\sigma(\wedge R)$.

Let us apply this to the running examples. Note, first, that we will simplify matters since entailments here are more complicated than in the event approach.¹⁹ Still, let us consider the inference from (b) to (c), reproduced below in the form of the intensional theory:

$$\begin{array}{l} (b''')(\wedge R)(s) \\ (c''')R(s). \end{array} \quad (1''')$$

On the Montague framework, this argument is not valid at the structural level. This makes sense in cases like that mentioned above, when the adverb in question is ‘supposedly’ or ‘allegedly’, since it is not the case that all alleged runners are runners. To obtain the validity for other sorts of adverbs, the intensional framework introduces a meaning postulate to ensure that, e.g., necessarily, if something runs swiftly, then it runs.

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¹⁸ For ease of reading, I have left out the σ function from the intensional constructions in the main body of the paper, since such technical details did not affect the primary arguments.

¹⁹ In particular, we are leaving aside the complications of recursively building complex predicates by abstraction, as well as the issue of the *restrictiveness* of an adverb. The former is one of the most attractive elements of intensional semantics in its ability to model interactions of adverbs and predicates at various scopes, but the complications it introduces are not necessary for our purposes. See, e.g., Fara (2012) for a more in-depth survey.

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