

“By”: A vindication of the Anscombe thesis

Received: date / Accepted: date

Abstract Recent work in event semantics sheds new light on the *by* locution, and one analysis can be shown to imply a vindication of the Anscombe thesis, that the locution is about one event under two descriptions. The key element is that the two descriptions do not correspond one-to-one to the two predicates in the locution; one corresponds to the merge of the two individual predicates. The central arguments against the thesis, while relevant and strong given the assumptions behind them, can now be seen to rely on one wrong assumption.

Keywords action identity · event identity · Anscombe thesis · criterion predicate · causative predicate

1 Introduction

What is variously referred to as the Anscombe thesis, the Anscombe-Davidson thesis or the Davidson-Anscombe thesis has it that if you signal by whistling, there is one event, act, or action which is both a signalling and a whistling. In Anscombe’s words (1957: 46), there is one action with two descriptions; in Davidson’s (1963: 686), you do one thing of which two descriptions are given. In the formulation of Wilson and Shpall (2012),

(1) **The Davidson/Anscombe thesis**

If a person F-s by G-ing, then her act of F-ing = her act of G-ing.

The large literature on the thesis reflects that it has had considerable appeal but also that there are rather strong reasons for rejecting it. I want to argue, however, that in the light of recent work in event semantics, it is possible to distinguish two versions of the thesis, the traditional version and a novel one, and that central counterarguments only apply to the former. I will also argue that the novel version of the thesis is preferable on independent grounds.

My aim is thus to vindicate the Anscombe(-Davidson) thesis, if not in the form of (1), which states an identity between an F act and a G act. Identity remains essential, but in the version I will be defending, it is to hold between an F-by-G-ing act and a G act, so that the counterpart to (1) would be (2):

- (2) If a person Fs by G-ing, then her act of [F-by-G-ing]-ing = her act of G-ing.

The unifying notion is that one event satisfies two different descriptions. But while the two descriptions have traditionally been taken to be the predicate F in the matrix clause and the predicate G in the *by* clause, I will argue that the two relevant event descriptions in the sentence are the predicates F-by-G-ing and G. In fact, I will argue that F is not an event description at all, so that the traditional conception of the thesis rests on a fallacious assumption.

(3) is a relatively precise formulation of what I will be referring to as the A(nscombe-)D(avidson) thesis as it has traditionally been conceived:

- (3) **AD thesis classic version**

A sentence $x \phi$ -s *by* ψ -ing is true only if there is one event which satisfies both ψ and ϕ .

By minimal contrast, the alternative conception I propose is (4):

- (4) **AD thesis modern version**

A sentence $x \phi$ -s *by* ψ -ing is true only if there is one event which satisfies both ψ and ϕ -*by*- ψ -ing.

While maintaining the intuition behind the original thesis, the move from (3) to (4) impregnates it against central counterarguments.

In Sect. 2, I motivate the move from (3) to (4), providing evidence that ϕ is not an event description but an operator over event descriptions, mapping *by*- ψ -ing to ϕ -*by*- ψ -ing. Then, in Sect. 3, I show how this move enables us to steer clear of the key reasons for rejecting the AD thesis.

Sect. 4 brings conclusions.

2 Abstract predicates and *by* clauses as their arguments

In most of the relevant literature, it has been tacitly assumed that in sentences like (5), the verb phrase in the matrix clause and the one in the gerund clause both describe act(ion)s (or more generally events) and so have the same logical type: that of sets of act(ion)s (or more generally events).

- (5) The Chesapeake signalled surrender by lowering the flag.

Some relevant work in the philosophy of action might in fact suggest otherwise: The two action descriptions figuring in a *by* locution have been noted to differ in how ‘basic’ they are (in the sense of Danto 1965 and subsequent literature).

Thus according to Hornsby and Goulder (2011), “where someone ϕ -s by ψ -ing, ψ -ing is said to be more basic than ϕ -ing.” The same idea underlies Goldman’s (1970) notion of ‘level generation’, where a relatively basic, lower-level action, such as lowering a flag, generates the less basic, higher-level action of signalling surrender (this would be an example of ‘conventional’ level generation).

Recent work in event semantics can shed new light on these differentiations. Bücking (2014) proposes an analysis where *by* serves to turn the *by* clause event into a complex event on which the matrix clause event description elaborates. In regard to the AD thesis, this analysis implies that there are two events, but since one is (in terms of the type composition logic of Asher 2011) an ‘aspect’ of the other, “the intuition arises that there is only one” (Bücking 2014: 29).

Another approach is taken by Sæbø (2016), who develops an analysis of *by* clauses as responses to *how* questions that extends to *by* locutions in general. Under this analysis, there is in fact only one event involved in the *by* locution; more precisely: one event is required to satisfy two descriptions, one being the predicate in the *by* clause. However, the other description is not the predicate figuring in the matrix clause, it is the result of applying that to the one in the *by* clause. The relative distinctions between more and less basic or lower-level and higher-level actions are thus formalised in absolute terms.

The rest of this section is devoted to presenting this proposal, focusing first on the reasons behind it.

2.1 Criterion predicates and method-neutral causatives

The underlying idea is that not all verbal predicates are descriptions of events, even if events are taken in the widest sense; as eventualities, including states – some seem to denote something more complex or abstract than sets of events. Kearns (2003) drew attention to two classes of predicates which stand out:¹

- ‘criterion predicates’, like *signal surrender* in (5), and
- ‘causative upshot predicates’, like *destroy the cargo* in (6).

(6) Colonists destroyed the cargo by dumping it into the harbor.

The first class is so called to reflect the fact that to satisfy such a predicate, the relevant kind of entity must meet some certain criterion over and above the satisfaction conditions associated with ordinary verbal predicates; some criterion either intentional or conventional or both.

Criterion-matching is . . . characteristic of *obey*. When a soldier obeys an order by fixing his bayonet, in addition to the obedient intent . . . , it is also necessary that the order stipulates bayonet-fixing. Given that . . . , the fixing of the bayonet constitutes the obeying of the order. Further predicates in this group are *fulfill their expectations*, *break a promise*, *a law*, *a record*, . . . , *make a mistake*. (Kearns 2003: 599)

¹ These two classes form subclasses of what Ryle (1949: Chapter V) called achievements (not to be confused with the way Vendler (1957) used the term to describe an *aktionsart*.)

Bennett (1994), although using different terms ('relational properties'), clearly had the same general notion in mind (see Sect. 2.2).

Consider the predicate *signal surrender* as occurring in (5): for an action to fall under this, the agent must intend it to signify surrender and be able to rely on the audience to understand it in that way. As a rule, it will be difficult to fully specify the criteria that must be met; predicates like *betray his family*, *stand up to injustice*, or *test her resolve*, for example, do not lend themselves to sharp definition. On the other hand, some cases cited by Kearns above, and some more like *stand out*, are fairly transparent; for instance, *break a law* requires that some law stipulates that the action in question not be done.

Sæbø (2016), building on Sæbø (2008), argues that the kind of entity that can satisfy criterion predicates by meeting their criteria are not event tokens but event types – properties of events; actions rather than acts. While it may be feasible to conceive of a criterion predicate as holding of particular events, it is in virtue of their properties that the events are going to satisfy it or not. One could, to be sure, say that *break a law* holds of an event e in a world w just in case there is an event property P which is illegal and holds of e in w . But other considerations (more on those below) lead Sæbø to treat the event properties as arguments and adopt this analysis: *break a law* holds of an event property P and an event e in a world w iff P is illegal and holds of e in w .

The other class of predicates that Kearns (2003) drew attention to beside criterion predicates are 'causative upshot predicates' or, in the terms of Sæbø (2016), 'method-neutral causatives', that is, causative predicates which specify the type of the caused event but leave the type of the causing event open, like *change the course of history*, *destroy the cargo*, or *open the cave*. They can be contrasted with method-specific causative predicates (though the borderline is not fixed and sharp) like *burn the cargo* or *pry open the cave entrance*.

It is common practice in linguistics to decompose causative predicates,² in definitions like: *open the cave* holds of an event e in a world w if and only if there is an event property P such that P holds of e in w , the cave opens in w , and the fact that $P(e)$ causes the fact that the cave opens (where causation is usually conceived in terms of counterfactual dependence). In a formulation analogous to the second definition of *break a law*, where P is an argument, *open the cave* holds of a P and an e in w iff P holds of e in w and the cave opens in w and the fact that $P(e)$ causes the fact that it opens.

Thus criterion predicates and method-neutral causative predicates can be construed as properties of events, but they can also be construed as operations on properties of events, where the argument is the P which must figure in the definitia of meaning definitions on the first construal too. Sæbø offers three reasons for adopting the second construal.

First, some criterion predicates can barely occur on their own; thus simple sentences with criterion predicates like *react* are barely interpretable:

² see, for example, Wunderlich 1997

- (7) For example, when, in 1563, a group of MPs met . . . to plan action on the issues of the Queen’s marriage and the succession, she reacted # (by sending their leaders to the Tower).

This is difficult to explain as long as one assumes that the predicate expresses a property of events – but easy to explain once one assumes that it expresses a function from properties of events, unsaturated in a simple sentence.

Second, when a criterion predicate does occur on its own, as *rendered her a great service* does below, the sentence is often interpreted anaphorically, more exactly, the predicate is taken to refer to a property of events which has been introduced in the discourse context:

- (8) Elizabeth felt that the Protestant lords, who had deposed Mary, had rendered her a great service.

Again, this is more easily explained if the criterion predicate is taken to require a property of events as an argument: zero arguments, or ‘null complements’, often get an anaphoric interpretation (see, for example, Williams 2015).

And third, as observed by Thomson (1977), a causative predicate can have a nominalization or a gerund phrase as its subject, as in (9).

- (9) Eliminating the offending foods and treating him with Difucan cured him 98%.

This is not to be expected if such predicates just express properties of events, but if instead they express functions from properties of events, it makes sense, because the subject can be considered to express and supply such a property. In sum, there are fairly good reasons to assume that criterion predicates and method-neutral causatives do not describe events but descriptions of events.

It is useful to subsume criterion and method-neutral causative predicates under the heading of **abstract** predicates, and to refer to predicates that are neither one nor the other as **concrete**; note, though, that this distinction is drawn purely in terms of the predicate’s logical type and does not necessarily correspond to any common-sense notion of the concrete versus the abstract, or to any philosophical notion (such as the ones discussed by Lewis (1986)). Although criterion predicates will mostly or generally be abstract in the sense that observation alone is not sufficient to establish whether it holds or not, a predicate can be abstract in this sense and still a concrete predicate as far as its logical type goes, and in particular, there are method-neutral causatives where the caused change of state is a matter of physically observable fact.

2.2 *By* as a grammatical preposition

By the reasoning presented above, abstract predicates are second-order event descriptions that open a slot for a first-order event description. Now according to Sæbø (2016), the *by* locution is a device for filling this sort of slot: the verb phrase in the matrix clause expresses a function for which the verb phrase in

the *by* clause provides an argument; when in semantic composition the former has applied to the latter, the value is another, more complex event description where the abstract information has been built in.

To illustrate, consider the function in (10), the argument in (11), and the value in (12). ($\llbracket \cdot \rrbracket$ are the ‘denotation brackets’ commonly used in semantics for assigning interpretations to expressions.)

- (10) $\llbracket \textit{break a law} \rrbracket =$
the function from event properties P to event properties Q such that Q holds of an event e if and only if P holds of e and P is illegal
- (11) $\llbracket \textit{drive drunk} \rrbracket =$
the event property that holds of an event e if and only if e is a driving in a drunk state
- (12) $\llbracket \textit{break a law by driving drunk} \rrbracket =$
the event property that holds of an event e if and only if e is a driving in a drunk state and driving in a drunk state is illegal

This can be seen as a compositional semantic version of the analysis proposed by Bennett (1994), which says that the matrix clause involves reference to a ‘relational property’ entailed to hold of the content of the *by* clause:

Bennett’s ‘namely’ analysis of the *by* locution

x ϕ -ed *by* ψ -ing analyzes into ‘some fact about how *x* behaved had relational property RP – namely the fact that – *x* ψ -ed.’

In a given case, RP will be determined by the predicate ϕ and the subject *x*; thus if ϕ is *break a promise*, RP may be ‘conflict with a promise made by *x*’. Mostly, though, RP will be rather difficult to spell out (Bennett 1994: 36).

The move that makes this analysis compositional is to let the *by* clause saturate an argument slot of the matrix clause, as illustrated in (10)–(12).

As for the preposition *by*, under Bennett’s analysis it just means ‘namely’. On the compositional version of it where the *by* clause saturates an argument slot in the matrix clause, *by* marks precisely this grammatical relation – that the *by* clause is not an adjunct but an argument. In this way, it is similar to other ‘grammatical’ or ‘functional’ prepositions like *on* as in ‘depend on’ or *in* as in ‘believe in’, which are also semantically vacuous argument markers.

This contrasts with various proposals that *by* is a functor which takes the two predicates on either side as arguments and expresses a relation of, as the case may be, causal, conventional, simple, or augmentative ‘level generation’ (Goldman 1970: 20–48), causation or ‘achievement’ (Wreen 1987), ‘inclusion’ (Thomson 1977), or explanation (Schnieder 2009). I refer the reader to Sæbø (2016) for an argument against the idea that *by* is a kind of operator, as also for responses to some potential counterarguments to his analysis.³

³ The short version is that the abstract-concrete distinction is a flexible distinction which leaves room for coercion, that an abstract predicate can be saturated covertly, and that the sum of an abstract predicate and a *by* clause is, like the latter, a concrete predicate.

3 A novel defense of the AD thesis

In this section, I will show how the novel analysis of the *by* locution, based on Bennett (1994), leads to a new formulation of the Anscombe-Davidson thesis and how this move renders the thesis immune to some key counterarguments.

The new analysis still predicts that there are two descriptions of one event; more precisely, any instance of the *by* locution provides two event descriptions that must hold of some, one and the same, event for the sentence to be true. But the crucial innovation is that these two event descriptions are not the two predicates on either side of *by*: in the example (5), the matrix clause predicate *signal surrender* is not as such a description of an event but a functor taking the *by* clause predicate *lower the flag* to a complex description of an event.

(5) The Chesapeake signalled surrender by lowering the flag.

Therefore, what we have are two event descriptions inside each other, the inner shell being the concrete *by* clause predicate, the outer being the join of that and the abstract predicate in the matrix clause. This is shown schematically in this logical form annotated with logical types, $\langle v, t \rangle$ for descriptions of events and $\langle \langle v, t \rangle, \langle v, t \rangle \rangle$ for operators on descriptions of events:⁴

(13) the Chesapeake $\underbrace{\left[\underbrace{\left[\text{signal surrender} \right]}_{\langle \langle v, t \rangle, \langle v, t \rangle \rangle} \right]}_{\langle v, t \rangle} \text{ by } \underbrace{\left[\text{lowering the flag} \right]}_{\langle v, t \rangle}$

So the two relevant event descriptions are *lower the flag* and *signal surrender by lowering the flag*, and thus generally, the relevant formulation of the AD thesis is not (3), repeated here, but (4):

(3) **AD thesis classic version**

A sentence *x φ-s by ψ-ing* is true only if there is one event which satisfies both ψ and ϕ .

(4) **AD thesis modern version**

A sentence *x φ-s by ψ-ing* is true only if there is one event which satisfies both ψ and ϕ -*by-ψ-ing*.

While (3) would seem to be vulnerable to a number of strong objections, (4) can be seen to avoid several unwelcome consequences. I cannot here do justice to the full range of counterarguments that have been raised against the thesis, but I will address four and explain how they cease to carry weight.

⁴ In line with current practice in linguistic semantics since Kratzer (1996), I assume that the agent (here the Chesapeake) is introduced by a separate functor above the verb phrase, and that aspect and tense, closing off the event set, are introduced at yet another level.

3.1 The argument from asymmetry

Goldman (1970: 5; 1971: 762) pointed out that the Anscombe-Davidson thesis is prone to predicting a symmetry between the two parts of a *by* construction, inasmuch as (5), repeated here as (14), should be synonymous with (15), and (6), repeated here as (16), should be synonymous with (17):

- (14) The Chesapeake signalled surrender *by* lowering the flag.
 (15) ??The Chesapeake lowered the flag *by* signalling surrender.
 (16) Colonists destroyed the cargo *by* dumping it into the harbor.
 (17) ??Colonists dumped the cargo into the harbor *by* destroying it.

This would indeed follow from Anscombe's 'one action with two descriptions' dictum on its simplest interpretation: if there are an action of lowering a flag and an action of signalling surrender and the two are one and the same, and that is all there is to the construction, then the order could not matter.

However, on the interpretation of the AD thesis presented above, there is no action of signalling surrender, or destroying the cargo, simpliciter – the two underlined predicates in (14) or (16) are not at the same type-logical level, as the first one is abstract, operating on the second, concrete one. Asymmetry is thus a priori given; in fact, the low acceptability of (15) or (17) is predicted to result from a type conflict: *lower the flag* and *dump the cargo into the harbor* are difficult to interpret as operations on event properties, as required by *by*.

3.2 The argument from time

A further, often cited and much discussed, argument against the Anscombe-Davidson thesis is the 'argument from temporal relations' (Ginet 1990: 58ff.), raised by Davis (1970) and Thomson (1971); see Pols (2013) and Silver (2017) for recent discussions. The perceived problem arises particularly in connection with method-neutral causative predicates, as in (18).

- (18) Laertes kills Hamlet by wounding him with a poisoned rapier.

Assuming that (18) entails that there is a killing event and a wounding event and the two are one and the same, the time interval taken up by the former must coincide with that taken up by the latter, which seems counterintuitive; it seems more natural to say that the time of the killing succeeds or outlasts that of the wounding. In the words of Davidson (2007),

[Danto] will point out that if Laertes' stabbing of Hamlet was identical with his killing of Hamlet, then Hamlet must have been dead before he killed Laertes and made his final speech, "– the rest is silence."

On the other hand, it is also problematic to assume that the time of the killing succeeds or outlasts the time of the wounding, as this may seem to imply that Laertes did not kill or did not finish killing Hamlet until after his own death.

This is ‘the problem of the acting dead’, see Pols (2013) and Silver (2017).

However, on the analysis of method-neutral causatives and the *by* locution presently under consideration, the problem does not arise, or at least not in the same way, because *kill Hamlet* does not in itself describe an event or action; rather, it is a functor inputting one and outputting another such description, the input being (19-a) and the output being (19-b). ‘The time of the killing’ is therefore strictly an illusion, there being no event of killing Hamlet as such.

- | | | | |
|------|----|-----------------------------------------------------------|-----------|
| (19) | a. | <i>wound Hamlet with a poisoned rapier</i> | <i>e</i> |
| | b. | <i>kill Hamlet by wounding him with a poisoned rapier</i> | <i>e</i> |
| | c. | <i>Hamlet die violently</i> | <i>e'</i> |

Note that the input description and the output description both describe the causing event, as distinct from the caused event of Hamlet dying violently, the existence of which is part of the complex description of the causing event, (19-b), and whose description could be (19-c). As argued by Hornsby (1979), it is essential to keep the causing event carefully apart from the caused event, which may well succeed the former. In the words of Davidson (2007) again,

There are two events: the stabbing by Laertes and the death of Hamlet. These two events are clearly discrete; the first caused the second, but the first was finished . . . before the second . . .

So for (18) to be true, there must be one temporal trace of wounding Hamlet with a poisoned rapier and of killing him by wounding him in such manner, as these two predicates must both hold of an event, but there can be another, later or longer lasting trace of Hamlet dying violently, or getting killed, since the event that this predicate must hold of is not the same but a distinct one.

On this view, then, we are not committed to saying that there is an event describable by *kill Hamlet* with the same time trace as one describable by *wound Hamlet with a poisoned rapier*.⁵ But the view does commit us to say that there is an event of the latter sort with the same time trace as one that satisfies the description *kill Hamlet by wounding him with a poisoned rapier*, which may also seem counterintuitive.

One response to that is that sometimes, the caused event is what we focus on when we locate a causative predicate in time. As argued by Silver (2017), it is semantically indeterminate or vague which event is the event referred to by the use of a verb like *kill*, whether it is (i) the event that is the action, (ii) the event that is the death, or (iii) the causal process from (ii) to (iii).

On the present account, for (18) to be true, (19-b) must hold of the same event as (19-a), so the semantics is not strictly indeterminate. Pragmatically, however, the argument advanced by Silver can serve to explain our hesitancy to accept that the time trace of (19-b) ends when the time trace of (19-a) ends: we may easily confuse the *e* of (19-b) with the embedded *e'* of (19-c).

⁵ Note that although *kill Hamlet* simpliciter is stricto sensu not a description of an event, it can be used as if it were, be it because the context makes it clear how the killing happens, so that the event property argument is anaphorically bound, or because this argument is understood to be existentially bound, in the sense of ‘kill Hamlet somehow’.

3.3 The argument from agency

A third reason for refuting the AD thesis concerns agency. Again, the problem arises most acutely in connection with causative predicates, more exactly, in *by* locutions where the matrix clause predicate is a method-neutral causative. If (20) entails that there is a poisoning event and a cooking event and the two are the same, and if agency is a relation between events and individuals, then the agent of the cooking event must also be the agent of the poisoning event.

- (20) An elderly care facility worker accidentally poisoned residents by cooking what turned out to be toxic mushrooms from the backyard.

That, however, is impossible, as the latter is not intentional but accidental.

But again, this is only a problem if the two predicates on either side of *by*, *poison residents* and *cook mushrooms*, are seen as on a par with one another. Once the former, causative predicate is decomposed, however, along the same lines as *kill Hamlet* above, a way around the paradox opens: the causing event may be agentive, but the caused event can still be non-agentive.

More precisely, a method-neutral causative predicate like *poison residents* cannot describe an agentive event because it does not describe an event in the first place – its meaning is not a property of events but a function from one property of events to another, specifically:

- (21) the function that assigns to e.g. cooking mushrooms the property holding of any event e iff e is an event of cooking mushrooms and there is an event e' of residents becoming poisoned and e causes e' .

The causing event e of cooking mushrooms (and thereby poisoning residents) may be agentive, but the caused event e' of residents becoming poisoned can still be non-agentive. The adverb *accidentally* in (20) arguably targets e' and conveys that the subject, the agent of the causing event e , did not intend the caused event e' to come about; by contrast, the adverb *intentionally* would convey that (s)he did intend to bring that event about.

3.4 The argument from sum events

A fourth counterargument to the Anscombe-Davidson thesis has been put forward by Schnieder (2009), who observes that two statements like (22) and (23) can be true in the same circumstances. (I vary his example for simplicity.)

- (22) She opened the safe by entering 2743 and then pressing the E key.
 (23) She opened the safe by entering 2743.

If, so the argument goes, both the event of entering 2743 and that of entering 2743 and then pressing the E key are equal to the event of opening the safe, then they must equal each other too, in conflict with the observation that any event of the latter type must have one of the former type as a proper subpart.

But this argument is only valid if there is in fact an event of opening the safe; on the present analysis, though, the method-neutral causative predicate *open the safe* does not describe individual events but, in effect, pairs of event properties and individual events. Therefore, (22) and (23) are not predicted to entail that there is an event which satisfies both the description *entering 2743 and then pressing the E key* and the description *entering 2743*.

Now if Schnieder is right that both (22) and (23) can be true in the same circumstances although those two descriptions denote disjoint sets of events, one of either of which is a causing event, that may be problematic in view of causal selection (cf. Schaffer 2016), more precisely, it may pose a problem for truth conditions for causatives on which a causing event must be unique. But in any case, this is not a problem which depends on the AD thesis.

4 Conclusions

I have aimed to show that if one adopts a novel analysis of the *by* locution, one is led to accept a novel version of the Anscombe-Davidson thesis saying that this locution presents two descriptions of one event, namely:

(4) **AD thesis modern version**

A sentence $x \phi$ -s *by* ψ -ing is true only if there is one event which satisfies both ψ and ϕ -by- ψ -ing.

This version of the thesis gives a crucial clue to the analysis of the locution: In ϕ *by* ψ -ing, ψ is an event description, and so is ϕ *by* ψ -ing, but ϕ is not. Instead, ϕ is an abstract predicate with an argument slot filled by *by* ψ -ing.

As a function both from and to sets of events, ϕ is subjective: it maps a set to a subset. This ensures that for an event to satisfy ϕ *by* ψ -ing, it must also satisfy ψ , and so (4) follows, given that ϕ *by* ψ -ing holds of some event. Concretely, (5) gives two descriptions of one event: (i) *lower the flag* (= ψ) and (ii) *signal surrender by lowering the flag* (= ϕ *by* ψ -ing), and the events that fall under the latter form a subset of the events that fall under the former.

(5) The Chesapeake signalled surrender by lowering the flag.

The key to the analysis of the *by* locution that enables a viable version of the AD thesis lies in locating the asymmetry in the locution not in the word *by* but in the relationship between the two predicates, in particular, in lifting ϕ to the level of a function from one concrete predicate to another.

As noted in Sect. 2.2, this idea is present in the theory of Bennett (1994): ϕ conveys a property ascribed to the content of ψ . Bennett argued, however, that the content of ψ should not be conceived of as a property of events but rather as a true proposition, a fact rather than an act, citing as evidence, *i.a.*, cases where there is a negation in the *by* clause, like (24).

(24) Some cyclists steal time by not stopping at traffic lights.

Now while semanticists commonly consider it possible for negative sentences to describe events (so-called negative events, see Partee (2012)), non-episodic cases like (24) might seem to stretch the notion of a negative event too far. And, the *by* locution also has a use with clearly individual-level predicates:

(25) RNA differs from DNA by containing the sugar ribose instead . . .

This indicates that the *by* locution is flexible in regard to the sort of property expressed in the *by* clause: it is usually a property of eventualities (events or states), and prototypically a property of events, or more narrowly even, acts, but it can as well be a property of individuals.

It is important to remember that the novel analysis of the *by* locution is independently motivated, by a desire to make sense of abstract predicates. In particular criterion predicates, called attention to by Kearns (2003), building on Ryle (1949), have received an analysis that accounts for the ways in which they stand out from other, concrete predicates, as laid out in Sect. 2.1. Under this analysis, like method-neutral causative predicates, they have a slot open for concrete predicates, and the *by* locution offers a format for filling it.

References

- Anscombe, G. E. M. (1957). *Intention*. Oxford: Basil Blackwell.
- Asher, N. (2011). *Lexical Meaning in Context: A Web of Words*. Cambridge: CUP.
- Bennett, J. (1994). The ‘Namely’ analysis of the ‘By’-locution. *Linguistics and Philosophy*, 17, 29–51.
- Danto, A. (1965). Basic actions. *American Philosophical Quarterly*, 2, 141–148.
- Davidson, D. (1963). Actions, reasons, and causes. In R. Blinkley, R. Bronaugh and A. Marras (Eds.), *Agent, Action, and Reason* (pp. 3–25). University of Toronto Press.
- Davidson, D. (2007). Danto’s Action. In Herwitz D. and Kelly M. (Eds.), *Action, Art, History: Engagements with Arthur C. Danto* (pp. 6–23). Columbia University Press.
- Davis, L. H. (1970). Individuation of actions. *The Journal of Philosophy*, 67, 520–530.
- Ginet, C. (1990). *On Action*. Cambridge: Cambridge University Press.
- Goldman, A. (1970). *A Theory of Human Action*. New York: Prentice-Hall.
- Goldman, A. (1971). The individuation of action. *The Journal of Philosophy*, 68, 761–774.
- Hornsby, J. (1979). Actions and identities. *Analysis*, 39, 195–201.
- Hornsby, J. and N. Goulder (2011). Action. In *Routledge Encyclopedia of Philosophy*. <http://www.rep.routledge.com/article/V001>. Accessed February 2018.
- Kearns, K. (2003). Durative Achievements and Individual-Level Predicates on Events. *Linguistics and Philosophy*, 26, 595–635.
- Kratzer, A. (1996). Severing the external argument from its verb. In J. Rooryck and L. Zaring (Eds.), *Phrase Structure and the Lexicon* (pp. 109–137). Dordrecht: Kluwer.
- Lewis, D. (1986) *On the Plurality of Worlds*, Oxford: Basil Blackwell.
- Partee, B. (2012). I actually saw Khrushchev not bang his shoe. Post at *Language Log*, <http://languagelog.ldc.upenn.edu/nll/?p=3995>. Accessed February 2018.
- Pols, A. J. K. (2013). Choosing your poison and the time of a killing. *Philosophical Studies*, 165, 719–733.
- Ryle, G. (1949). *The Concept of Mind*. London: Hutchinson.
- Sæbø, K. J. (2008). The Structure of Criterion Predicates. In J. Dölling, T. Heyde-Zybatow and M. Schäfer (Eds.), *Event Structures in Linguistic Form and Interpretation* (pp. 127–147). Berlin: Mouton de Gruyter.
- Sæbø, K. J. (2016). How questions and the manner-method distinction. *Synthese*, 193(10), 3169–3194.

- Schaffer, J. (2016). The metaphysics of causation. *Stanford Encyclopedia of Philosophy* (<http://plato.stanford.edu/entries/causation-metaphysics/>).
- Schnieder, B. (2009). ‘By’: a refutation of the Anscombe thesis. *Linguistics and Philosophy*, 31, 649–669.
- Silver, Kenneth (2017). The vague time of a killing. *Philosophical Studies*, doi 10.1007/s11098-017-0915-4.
- Thomson, J. J. (1971). The time of a killing. *The Journal of Philosophy*, 68(5), 115–132.
- Thomson, J. J. (1977). *Acts and other Events*. Ithaca: Cornell University Press.
- Vendler, Z. (1957). Verbs and Times. *The Philosophical Review*, 66, 143–160.
- Williams, Alexander. 2015. *Arguments in Syntax and Semantics*. Cambridge: CUP.
- Wilson, G. M. and S. Shpall (2012). Action. *Stanford Encyclopedia of Philosophy* (<http://plato.stanford.edu/entries/action/>).
- Wreen, M. (1987). Two ‘by’ ways. *Analysis*, 47, 120–124.
- Wunderlich, D. (1997). Cause and the structure of verbs. *Linguistic Inquiry*, 28, 27–68.