

***Framing Event Variables***  
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I find myself writing two papers that are due around the same time. This one develops an objection, based on Davidson's (1967a) analysis of action reports, to truth-theoretic accounts of linguistic meaning. The other one is about the relevance of Liar Paradoxes for such accounts; see Pietroski (forthcoming). In both papers, the first numbered sentence is (1).

(1) The first numbered sentence in "Framing Event Variables" is false.

But here, (1) is simply a reminder of a familiar difficulty for the idea that declarative sentences of a Human Language have truth conditions; where for these purposes, a Human Language is a spoken or signed language that any biologically normal child can acquire given an ordinary course of linguistic experience. In my view, (2) and (3) present further difficulties for this idea.

(2) Alvin chased Theodore gleefully and athletically but not skillfully.

(3) Theodore chased Alvin gleelessly and unathletically but skillfully.

Following Davidson and others, I think action reports have "eventish" logical forms like (2a-3a).

(2a)  $\exists e[\text{Chased}(e, \text{Alvin}, \text{Theodore}) \ \& \ \text{Gleeful}(e) \ \& \ \text{Athletic}(e) \ \& \ \sim\text{Skillful}(e)]$

(3a)  $\exists e[\text{Chased}(e, \text{Theodore}, \text{Alvin}) \ \& \ \text{Gleeless}(e) \ \& \ \text{Unathletic}(e) \ \& \ \text{Skillful}(e)]$

We can stipulate that these existential generalizations—sentences of an *invented* language—have recursively specifiable truth conditions, and that 'Chased(e, x, y)' is true of  $\langle \alpha, \beta, \gamma \rangle$  if and only if  $\alpha$  was an *event* of  $\beta$  chasing  $\gamma$ . But as we'll see, there are good reasons for denying that (2) and (3) exhibit the specified truth conditions. There are potential replies. But I argue that they are implausible, especially given the many independent illustrations (e.g., via Kahneman and Tversky) of how human judgments are affected by linguistic framing.

### **1. Introduction**

If (1) is true, then since (1) *is* the first numbered sentence in "Framing Event Variables,"

(1) The first numbered sentence in "Framing Event Variables" is false.

(1) is false. If (1) is false, then (1) is true. So assuming that no sentence is both true and false, (1) is neither true nor false. That's OK, even if each truth-evaluable thing is true or false. Sentences of a Human Language may be among the many things that are not truth-evaluable: my dog, the Andromeda galaxy, prime numbers, etc. Many sentential *utterances* are true, and many are false. That calls for explanation. But the sentences uttered need not true or false, even in contexts.

Sentences may often be *usable as tools* with which speakers can *make* truth-evaluable judgments/assertions, given the right conceptual ingredients. But if Human Languages generate sentences via procedures that are not concerned with truth—and that's what I suspect, following Chomsky (1977, 2000) and many others—then we shouldn't be surprised if sentence-to-world relations turn out to be complicated and messy. Such relations are presumably mediated by many cognitive systems that interact in various ways. From this perspective, (1) illustrates a quite general point: no Human Language sentence is truth-evaluable; and even sincere sentential utterances can fail to be true or false. In which case, (4) provides another example of this point.

(4) Vulcan has an iron core.

A competent speaker might sincerely utter (4), presupposing that Vulcan exists in order to say that it has an iron core (weighty enough to affect Mercury's orbit). No such utterance is true, since Vulcan does not exist. But falsity may require more than grammaticality, sincerity, and nontruth; see Strawson (1950), Evans (1982). Making a false claim may require significant success: the world may have to cooperate with, or at least not frustrate, certain intentions. So (4), along with many utterances of it, may be neither true or false; cp. Russell (1905, 1957).

One might insist that utterances of (4) and (5) are false if nothing is named/demonstrated.

(5) That is a dog.

But that seems like a stipulation about utterances and falsity, as opposed to a hypothesis about Human Languages. Of course, (5) is unlike (1) in that many utterances of (5) *are* true or false. But it doesn't follow that (5), much less (4) or (1), is true or false in each context.

One can hypothesize that modulo miscreants, Human Language sentences are true or false in contexts. But as many philosophers have stressed, it's remarkable that humans can make *any* claims that rise to the level of falsity. Once a thinker achieves this level of clarity and contact with her environment, truth is a mere negation sign away. If only for this reason, it's remarkably optimistic to think that sentences of a Human Language—expressions that children can generate and comprehend—are themselves truth-evaluable. In the right settings, humans can use these sentences to make and express truth-evaluable *judgments*, given suitable concepts. But truth/falsity may be downstream of linguistic meaning, in that certain *acts of using* meaningful linguistic expressions are *candidates* for being true-or-false, subject to further constraints.

In my view, this Strawsonian point is not confined to examples that involve some kind of reference failure. I think the same moral emerges from considering (2) and (3),

(2) Alvin chased Theodore gleefully and athletically but not skillfully.

(3) Theodore chased Alvin gleelessly and unathletically but skillfully.

here taking it as given that each of the two names has a unique bearer.

Each of these sentences can be used to illustrate virtues of Davidsonian “event analyses,” according to which (2) and (3) have logical forms of the sort indicated in (2a) and (3a);

(2a)  $\exists e[\text{Chased}(e, \text{Alvin}, \text{Theodore}) \ \& \ \text{Gleeful}(e) \ \& \ \text{Athletic}(e) \ \& \ \sim\text{Skillful}(e)]$

(3a)  $\exists e[\text{Chased}(e, \text{Theodore}, \text{Alvin}) \ \& \ \text{Gleeless}(e) \ \& \ \text{Unathletic}(e) \ \& \ \text{Skillful}(e)]$

where ‘Chased(*e*, Alvin, Theodore)’ might be spelled out further, perhaps as ‘Past(*e*) & Chase(*e*) & Agent(*e*, Alvin) & Patient(*e*, Theodore)’, and likewise for ‘Chased(*e*, Theodore, Alvin)’; cp. Castañeda (1967), Davidson (1985), Parsons (1990), Schein (1993). In section three, I review the main reasons for thinking that such analyses—in terms of an “event variable” not indicated with any overt argument of the verb—are inevitable in any good account of how the meanings of Human Language expressions are compositionally determined. But (2a) and (3a) are invented sentences of a formal metalanguage. So while it can be stipulated that (2a) and (3a) have certain truth conditions, (2) and (3) may not have these truth conditions, not even if the invented sentences are (in some other respects) good *models* of the Human sentences.

Indeed, it seems that utterances of (2) and (3) can both be true even if (2a) and (3a) are not both true. Imagine that Alvin and Theodore are chasing each other, with neither catching up on the other, and perhaps neither aware of being chased. Alvin is chasing Theodore gleefully and athletically but not skillfully, just for the joy of chasing. Theodore is chasing Alvin gleelessly and unathletically but skillfully, in order to bring him home. Suppose further that this was the only time that Alvin chased Theodore, and the only time that Theodore chased Alvin. Then an utterance *u*<sub>2</sub> of sentence (2) can be true, at least if offered as a sincere report of what happened; and in the same context, an utterance *u*<sub>3</sub> of sentence (3) can be true. By itself, that's not puzzling. Any scenario can be described in endlessly many ways. But we get a puzzle if we add the following hypothesis: *u*<sub>2</sub> is true if and only if (2a) is true relative to context in question; and *u*<sub>3</sub> is true if and only if (3a) is true relative to that context. Given this hypothesis, it follows that there were *two* chases, occupying the same region of spacetime: a gleeful, athletic, but not skillful chase of Theodore by Alvin; and a gleeless, unathletic, but skillful chase of Alvin by Theodore. That's not a logical contradiction. But it is, I think, very implausible.

As we'll see, there are boundlessly many such examples. There are also various potential responses. One might conclude that  $u_2$  and  $u_3$  are not true after all, or that the logical forms of (2) and (3) are true but more complicated than (2a) and (3a), or that these simple logical forms need to be construed in a nonstandard way. My own preference is to reject hypothesis (H).

(H) if  $S$  is a sentence of a Human Language, and  $S^*$  is the logical form of  $S$ , then  $S$  has the truth condition that  $S^*$  specifies

I am, however, happy to follow the tradition of saying that logical forms are (invented) sentences that do have truth conditions. I have no desire to detach *logic*, or the notion of valid inference, from our notion of truth. I am also happy to say that each sentence  $S$  of a Human Language has a compositionally determined meaning that determines the logical form of  $S$ , at least relative to a choice of a suitably expressive formal metalanguage  $\mathbf{M}$ .<sup>1</sup> Competent speakers of a Human Language find certain overtly formulated inferences compelling—e.g., ‘Simon is a clever chipmunk, so Simon is a chipmunk’ and other instances of ‘ $\alpha$  is a clever  $\Phi$ , so  $\alpha$  is a  $\Phi$ ’. Some intuitions of compellingness may reflect logically contingent knowledge, or conceptual necessities not reflected by linguistic meaning: chipmunks are animals; the number of even prime numbers is odd; etc. But I assume that many overtly formulated inferences are compelling in part *because* the sentences in question have meanings that exhibit patterns (corresponding to patterns of inference) that speakers recognize as valid.

One can always argue about cases and details. But a few niceties aside, speakers of English know that if what you'd say with (6) is true, then what you'd say with (7) is true.

(6) Simon is a clever chipmunk.

(7) Simon is a chipmunk.

Here is an attractive first-pass account of how they know this: speakers of English understand basic adjectival modification, as in ‘clever chipmunk’, as a sign of predicate *conjunction*; and they recognize conjunct *elimination* as a form of valid inference, except in the scope of negation; so they know that what you'd say with (7) *follows* from what you'd say with (6). We can summarize this little theory by saying that (6) and (7) have (6a) and (7a) as their logical forms;

(6a)  $\exists x[\text{Identity}(\text{Simon}, x) \ \& \ \text{Clever}(x) \ \& \ \text{Chipmunk}(x)]$

(7a)  $\exists x[\text{Identity}(\text{Simon}, x) \ \& \ \text{Chipmunk}(x)]$

where the conjuncts in (6a) and (7a) are not in the scope of negation. As Davidson observed, the inference from (8) to (9) is just as compelling, suggesting (8a) and (9a) as logical forms.

(8) Alvin chased Theodore gleefully.

(8a)  $\exists e[\text{Chased}(e, \text{Alvin}, \text{Theodore}) \ \& \ \text{Gleeful}(e)]$

(9) Alvin chased Theodore.

(9a)  $\exists e[\text{Chased}(e, \text{Alvin}, \text{Theodore})]$

I'll return to further reasons for adopting this suggestion. But note that the account just sketched does not imply that Human Language sentences are themselves truth-evaluable. One can say that  $S$  has the logical form that its meaning determines. But a sentence may have its logical form, so to speak, only at a distance. The logical form “of”  $S$  may reflect the logically

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<sup>1</sup> Though perhaps given indeterminacy, some *class* of metalanguage sentences is “the” logical form of  $S$  relative to  $\mathbf{M}$ ; see Quine (1960), Davidson (1984). A further complication is that we speak of true friends, true north, and true walls. But I grant that a “semantic” notion of truth, applying to judgments and invented sentences, can be isolated and connected with logic; though see Etchemendy (1990) on the need to avoid implausible model-theoretic conceptions of validity.

relevant structure of judgments that can be made, in contexts, by using *S* in certain ways; where this logical structure is determined by, though perhaps not identical to, the grammatical structure of *S*. In which case, *S* might not be truth-evaluable at all, but rather a tool with which truth-evaluable judgments can be made. Correlatively, (H) is a hypothesis, not a truism.

(H) if *S* is a sentence of a Human Language, and *S*\* is the logical form of *S*, then *S* has the truth condition that *S*\* specifies

Prima facie, this hypothesis is disconfirmed if *u*<sub>2</sub> and *u*<sub>3</sub> are both true, yet (2a) and (3a) are not both true relative to the corresponding context. Again, there are potential replies. The point here is simply that (H) can be disconfirmed, not that it is falsified by any particular data.<sup>2</sup> But if (H) is false, that may undermine certain arguments for the bold Davidsonian thesis (D).

(D) for each Human Language **H**, some Tarski-style theory of truth for **H** is the core of a correct theory of meaning for **H**

In particular, analyzing sentences like (8) as existential generalizations like (8a)

(8) Alvin chased Theodore gleefully.

(8a)  $\exists e[\text{Chased}(e, \text{Alvin}, \text{Theodore}) \ \& \ \text{Gleeful}(e)]$

was part of Davidson's (1967a, 1967b, 1968) argument that some version of (D) might be true, despite obvious difficulties, including sentences like (10) and (1); see Pietroski (forthcoming).

(10) Lois doesn't think that Superman is Clark, even though he is.

(1) The first numbered sentence in "Framing Event Variables" is false.

The idea was that (D) is compatible with adverbial modification, as in (8), because the variables in logical forms like (8a) can have *events* as values—much as variables in logical forms like ' $\exists x[\text{Prime}(x)]$ ' and ' $\text{Bogat}(x, y)$ ' can have *numbers* and *animals* as values.

As Davidson stressed, it is important that values of variables be independent of linguistic descriptions. So he argued that events, like animals, are spatiotemporally located particulars that can be described in many ways. If (8a) is true, there was a chase by Alvin of Theodore; and this chase of one chipmunk by another, we may suppose, was a ruckus that caused Simon's subsequent headache, exhausted Theodore, etc. So far, so good. But the question is whether (8) is true, modulo context sensitivity, if and only if some description-neutral event satisfies the conjuncts of (8a). Initially, an affirmative answer might seem unproblematic: there was a chase by Alvin of Theodore; it was witnessed. But prima facie, Alvin and Theodore did not participate in *two* simultaneous description-neutral chases. So examples like (2-3) reveal a problem.

(2) Alvin chased Theodore gleefully and athletically but not skillfully.

(2a)  $\exists e[\text{Chased}(e, \text{Alvin}, \text{Theodore}) \ \& \ \text{Gleeful}(e) \ \& \ \text{Athletic}(e) \ \& \ \sim\text{Skillful}(e)]$

(3) Theodore chased Alvin gleelessly and unathletically but skillfully.

(3a)  $\exists e[\text{Chased}(e, \text{Theodore}, \text{Alvin}) \ \& \ \text{Gleeless}(e) \ \& \ \text{Unathletic}(e) \ \& \ \text{Skillful}(e)]$

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<sup>2</sup> We can define 'logical form' so that inscription (H) encodes a triviality. But we can also define 'logical form' or 'sentence' or 'is' so that inscription (H) encodes a manifestly false claim. As used here, 'logical form'—or if you prefer, 'Logical Form'—is a theoretical term. So one shouldn't take any proposed definition too seriously. One can say that Human Language sentences *do not* have compositionally determined meanings that determine logical forms, perhaps because logical forms reflect normative constraints on judgment that are not reflected by those sentences. But then it is misleading to say that Human Language sentences have logical forms, except relative to regimentations; see Quine (1951). By contrast, I think that grammatical form *determines* logical form, and that (H) should be rejected.

In my view, such examples reflect framing effects that are inevitable, given the kinds of thinkers that humans are. We can eschew the machinations required to reconcile (H) and (D) with examples like (2-3). But I think we need a conception of meaning according to which utterances of a sentence  $S$  can be true, even if  $S$  has the logical form  $\exists e[\Phi(e)]$ , and the predicate  $\Phi(e)$  is not true of anything in the context at hand. Let each thing that  $\Phi(e)$  is true of—each *satisfier* of  $\Phi(e)$ —be a truth maker for  $\exists e[\Phi(e)]$ . My claim, in short, is that utterances of  $S$  can be true even if  $S$  has no truth maker. Section two prepares the way for the argument via discussion of a particular framing effect, due to Thomas Schelling and discussed by Kahneman (2011). In sections three to five, I review some strategies for reconciling (D) with (2-3). I argue that while these strategies apply to other examples, endlessly many problem cases remain.

Along the way, I connect the remarks about framing with an internalist conception of meaning: Human Language expressions are, and are understood as, instructions for how to build concepts of a certain sort; Pietroski (2005b, 2008, 2010, 2011). For example, ‘clever chipmunk’ is an instruction for how to build a conjunctive concept from concepts accessed with ‘clever’ and ‘chipmunk’; two executions of this instruction might yield two concepts that exhibit a common form. Sentences are special cases: instructions for how to build *thoughts*, typically of the form  $\exists e[\Phi(e)]$ . From this perspective, a logical form is a truth-evaluable prototype that illustrates the kind of thought that can be built from *ideal* atomic concepts by *executing* a sentence meaning.

## 2. Getting Framed

Kahneman (2011) reviews the literature on various kinds of framing effects, including those that he and Tversky made famous; see Kahneman & Tversky (1979, 2000), Tversky & Kahneman (1981), Kahneman et.al. (1982). Some of the examples reveal that in many respects, we humans are lazy thinkers, apt to answer questions in ways that initially “sound good” even if a moment’s reflection would show the answer to be wrong. For example, consider the question in (13).

- (13) A bat and a ball cost \$1.10. The bat costs a dollar more than the ball.  
How much does the ball cost?

Even in a restricted population of undergraduates at elite institutions, more than half answer that the ball costs ten cents. But then the bat would cost a dollar, and a dollar is not a dollar more than ten cents. Finding the right answer is not conceptually difficult, though it requires a little concentration:  $x + y = 1.1$ , and  $x = 1 + y$ ; so  $1 + 2y = 1.1$ ; so  $y = .05$ , and the ball costs a nickel. Thus, one might have expected some correct answers, some understandable calculation errors, and various indirect responses like ‘I don’t know’, ‘Less than a dime’, ‘Who cares’, or something less polite. But the majority answer is not just wrong. It is obviously wrong if you think about it at all. Now in some sense, it isn’t news that people often answer questions without thinking about their answers. We all know that often, we don’t ask ourselves whether what initially sounds good is at all plausible. But the implications of this point are especially depressing, given further evidence about the factors that can make one answer initially sound better than another.

In the bat and ball case, it seems that we are tempted to answer a simple question—how much is left if you take a dollar away from a dollar and a dime?—instead of the question posed. (Insert your own joke about two philosophers and a politician.) In other cases, we are apparently influenced by differences in the affective responses associated with provably equivalent *descriptions* of a situation or choice. Even for surgeons, a ninety-five percent survival rate sounds better than a five percent fatality rate. Such cases provide classic examples of *framing* effects, since one can show the effect of (re)presenting a situation/choice in one way rather than another. But the sources of framing need not be affective, at least not primarily.

Consider another example from Kahneman and Tversky. Adam and Beth drive equal distances each year, and each just bought a new car. Adam was getting twelve miles per gallon, but now he gets fourteen. Beth was getting thirty miles per gallon, but now she gets forty. Who will save more gas? There is a powerful inclination to say that Beth will save more. Yet we know how to determine the answer: pick a distance  $D$ ; calculate  $D/12$ ,  $D/14$ , and subtract to determine how many gallons of gas Adam will save; calculate  $D/30$ ,  $D/40$ , and subtract to determine how many gallons of gas Beth will save. Most of us also know that we are not good at dividing by fourteen in our heads. Yet the human inclination is not to say, ‘I do not know, and so if the question is worth answering at all, I shall get a pencil work it out’.

Rather, we find ourselves inclined to blurt out ‘Beth will save more’—evidently because the difference between forty and thirty is bigger, both absolutely and as a ratio, than the difference between fourteen and twelve. This is, however, not a good reason for concluding that Beth will save more gas than Adam. If they both drive 10,000 miles in a year, Adam will save about 119 gallons, while Beth saves about 83. Interestingly, if the question is framed in terms of *gallons per mile*, we are less likely to think that we know the answer. Adam had been using a twelfth of a gallon for each mile, but now he uses a fourteenth. Beth had been using a thirtieth of a gallon for each mile, but now she uses a fortieth. Who will save more gas? Now it seems obvious that answering calls for calculation, not intuition:  $1/12 = .083$ ;  $1/14 = .071$ ; so Adam saves .012 of a gallon per mile;  $1/30 = .033$ ;  $1/40 = .025$ ; so Beth saves .008 of a gallon per mile.

These effects are fascinating, in part because we can easily see that our initial inclinations are not only wrong, they are *objectively inferior* to other responses that are *available* and *justifiable* via reasoning that we are fully capable of conducting. Correlatively, discovery of framing effects can have pretty clear implications for public policy.<sup>3</sup> But in some cases, framing effects run deeper, making them intellectually interesting in another way—akin to paradoxes—with policy implications that are less clear, apart from suggesting epistemic modesty. Kahneman (2011) reports that his favorite example of this sort is one that Thomas Schelling (Nobel Prize winner) used in the classroom. Schelling’s beautiful example concerns tax deductions. But I think it also provides a useful analogy to the puzzles posed by (2-3).

(2) Alvin chased Theodore gleefully and athletically but not skillfully.

(3) Theodore chased Alvin gleelessly and unathletically but skillfully.

Schelling asked his students to think about the policy of reducing taxes for those who have (dependent) children. Suppose your income tax depends entirely on your (household) income and how many children you have. For each income  $i$  and number  $c$  of children, there is a tax  $t$ :  $\text{Tax}(i, c) = t$ . The “child deduction” might be flat, say a thousand dollars per child. That is, each income can be paired with a “base” tax, from which some multiple of 1000 is subtracted:  $\text{Tax}(i, c) = \text{Base}(i) - [c \cdot 1000]$ . Alternatively, one might adopt a system in which the deduction for each child depends on household income:  $\text{Tax}(i, c) = \text{Base}(i) - [c \cdot \text{Deduction}(i)]$ . Given these options, there are many policy questions. But consider (14), which seems relatively easy.

(14) Should the child deduction be *larger* for the rich than for the poor?

At least for many of us, it seems unfair to adopt the “graduated deduction” policy, and then make the deduction per child *larger* for those who already have larger incomes. Hold that thought.

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<sup>3</sup> If framing a question one way leads people to endorse a wrong answer that cannot be justified, and framing the question another way leads people to endorse a correct answer that they can justify, then other things equal: frame the question in the first way if you want people to endorse the wrong answer; frame it in the second way if you want people to endorse the correct answer.

By thinking in terms of *deductions*, we effectively take the “standard household” to be childless. The base tax is what a childless household pays. But we could instead assume two children per household, start with a lower base tax for all incomes, and impose a *surcharge* on households with fewer than two children (e.g., \$1000 for each child less than two):  $\text{Tax}(i, c) = \text{Base}^*(i) + [(2 - c) \cdot 1000]$ ; where for each income  $i$ ,  $\text{Base}^*(i) = \text{Base}(i) - 2000$ . We could also let the surcharge depend on income:  $\text{Tax}(i, c) = \text{Base}^*(i) + [(2 - c) \cdot \text{Surcharge}(i)]$ .<sup>4</sup> Again, this presents various questions. But consider (15), which might seem like an easy call.

(15) Should the childless poor pay as large a *surcharge* as the childless rich?

Given a system that penalizes childlessness, with higher taxes for each income, it seems unfair to make the poor pay as large a penalty as the rich. A childless poor household would sacrifice a greater percentage of income, for being childless, than a childless rich household. One wants to say that any such surcharge should be graduated, with the childless poor paying a smaller surcharge. But if you answered both (14) and (15) negatively, then you endorsed a contradiction.

As Kahneman puts the point, for any given income, the *difference* between the tax owed by a two-child family and by a childless family can be described as a reduction or as an increase. And if poor households are to receive at least the same *benefit* as the rich for having children, then poor households must pay at least the same *penalty* as the rich for being childless. In the abstract, this seems obvious. Still, it can be remarkably hard to shake the sense that both (14) and (15) deserve negative answers. I had to stare, for a long time, at a *reductio* of (16).

(16)  $\sim[\text{Deduction}(i_{high}) > \text{Deduction}(i_{low})] \ \& \ [\text{Surcharge}(i_{low}) < \text{Surcharge}(i_{high})]$

For each income, high or low, the deduction has to be the same as the surcharge. One family’s deduction is another family’s surcharge. So (17) and (18) are obviously true.

(17)  $\text{Deduction}(i_{high}) = \text{Surcharge}(i_{high})$

(18)  $\text{Deduction}(i_{low}) = \text{Surcharge}(i_{low})$

Given (17), the second conjunct of (16) implies (19), which might seem fine by itself.

(19)  $\text{Surcharge}(i_{low}) < \text{Deduction}(i_{high})$

But (19) and (18) imply (20), which is incompatible with the first conjunct of (16).

(20)  $\text{Deduction}(i_{low}) < \text{Deduction}(i_{high})$

The inferences are uncomplicated: if  $\alpha < \beta$ , and  $\gamma = \beta$ , then  $\alpha < \gamma$ ; if  $\alpha < \beta$ , and  $\gamma = \alpha$ , then  $\gamma < \beta$ . And yet, our—or least my—gut responses to (14) and (15) remain. Quite humbling.

At this point, one might conclude that since (14) clearly deserves a negative answer, we must answer (15) affirmatively, like it or not. But even if one answers (21) affirmatively,

(21) Should the child deduction be flat?

after thinking about (15-20), it still seems that (22) should be answered negatively.

(22) Should there be a flat tax on childlessness?

One might eliminate the child deduction. But with the current flat deduction, poor households with children get more relief (as a percentage of income) than rich households with children. That raises question (23), which leaves me feeling thoroughly muddled.

(23) Should we eliminate a tax break for poor families with children?

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<sup>4</sup> For simplicity, assume that no household has more than two children. But it doesn’t matter if there is also a tax *deduction* for each child beyond the second, perhaps up to some cap, or if we take the “standard household” to have ten children (reducing the base tax and imposing surcharges accordingly). Some descriptions of the policy will lead more people to think/recognize that they have a tax incentive to have more children. But that is part of the point.

Kahneman (2011) draws a dramatic and disturbing conclusion.

The message about the nature of framing is stark: framing should not be viewed as an intervention that masks or distorts an underlying preference. At least in this instance...there is no underlying preference that is masked or distorted by the frame. Our preferences are about framed problems, and our *moral intuitions are about descriptions, not substance* (pp. 412-413?)

I take no stand on whether, or how often, things are *this* bad with regard to the moral/political. As a village semanticist, I find it hard enough to think about reports concerning “what happened” in a situation where two chipmunks chased each other. Though if our natural ways of describing action can quickly lead to puzzles when we talk about a situation in which each of two animals acts in a way that targets the other, then we may need to develop some *other* ways of talking about morally complex situations. In any case, when thinking about (2-3),

(2) Alvin chased Theodore gleefully and athletically but not skillfully.

(3) Theodore chased Alvin gleelessly and unathletically but skillfully.

we need to be realistic about the kinds of minds that humans have: minds subject to framing effects, some of which run deep. There is no guarantee that our intuitions can be coherently described as having stable propositional contents; cp. Kripke (1979). We may have intuitions which motivate the hypothesis that (2) and (3) have logical forms along the lines of (2a) and (3a).

(2a)  $\exists e[\text{Chased}(e, \text{Alvin}, \text{Theodore}) \ \& \ \text{Gleeful}(e) \ \& \ \text{Athletic}(e) \ \& \ \sim\text{Skillful}(e)]$

(3a)  $\exists e[\text{Chased}(e, \text{Theodore}, \text{Alvin}) \ \& \ \text{Gleeless}(e) \ \& \ \text{Unathletic}(e) \ \& \ \text{Skillful}(e)]$

But the intuitions that motivate appeals to eventish logical forms may reflect details of linguistic description, as opposed to description-neutral (truth-conditional) content.

By uttering (2) or (3), a speaker can correctly report some of what happened in a situation where one chipmunk chased another. But no one event can satisfy all eight of the conjuncts in (2a) and (3a). So one might conclude that *if* (2) and (3) have the indicated logical forms, *then* the things that happened included two chases involving Alvin and Theodore. This sets us up for a familiar kind of debate that nobody wins. But we can reject the conditional. Instead of viewing (2a) and (3a) as sentences that specify alleged truth conditions of (2) and (3), suppose the proposed logical forms are *models of thoughts* that can be assembled—given the right conceptual ingredients—by *executing* the instructions that (2) and (3) provide. The thoughts we actually construct via (2) and (3), on any given occasion, may or may not rise to the level of being true or false. But if the thoughts we construct are isomorphic to (2a) and (3a), our linguistic competence may lead us to form thoughts that are not “made true” by any actual event that we are thinking about in two (perhaps slightly distorted) ways. We may represent and report “what happened” in existential form, but in framed ways that preclude language-independent events from being values of the relevant variables.

### 3. The Uncomfortable E-Position

One might prefer to jettison the trouble-making event analyses. But we need to explain why the inference from (8) to (9) is compelling. And Davidson’s original argument can be extended.

(8) Alvin chased Theodore gleefully.

(9) Alvin chased Theodore.

Shifting examples, suppose that Miss Scarlet stabbed Colonel Mustard *twice*. One stab was done with a grey dagger. It was a bit clumsy, resulting in a superficial wound on Mustard’s left side. The other one, done with a red dagger, was a proficient and fatal stab on his right side.



Given this context, Davidson's analysis yields a cluster of correct predictions: (24) and (25) can be true, along with their implications (26-29), while (30) and (31) are false.<sup>5</sup>

- (24) Scarlet stabbed Mustard clumsily with a grey dagger.
- (25) Scarlet stabbed Mustard proficiently with a red dagger.
- (26) Scarlet stabbed Mustard clumsily.
- (27) Scarlet stabbed Mustard with a grey dagger.
- (28) Scarlet stabbed Mustard proficiently.
- (29) Scarlet stabbed Mustard with a red dagger.
- (30) Scarlet stabbed Mustard clumsily with a red dagger.
- (31) Scarlet stabbed Mustard proficiently with a grey dagger.

Let 'S(e)' abbreviate 'Stabbed(e, Scarlet, Mustard)'. Call the two satisfiers of 'S(e)' *Gauche* and *Droite*. Let 'C', 'P', 'WG', and 'WR' abbreviate 'Clumsily', 'Proficiently', 'With-grey-dagger', and 'With-red-dagger'. Then *Gauche* satisfies 'C(e)' and 'WG(e)', but not 'P(e)' or 'WR(e)'; *Droite* satisfies 'P(e)' and 'WR(e)', but not 'C(e)' and 'WG(e)'. So  $\exists e[S(e) \ \& \ C(e) \ \& \ WG(e)]$  and  $\exists e[S(e) \ \& \ P(e) \ \& \ WR(e)]$ . Hence:  $\exists e[S(e) \ \& \ C(e)]$ ;  $\exists e[S(e) \ \& \ WG(e)]$ ;  $\exists e[S(e) \ \& \ P(e)]$ ; and  $\exists e[S(e) \ \& \ WR(e)]$ . But  $\sim \exists e[S(e) \ \& \ C(e) \ \& \ WR(e)]$  and  $\sim \exists e[S(e) \ \& \ P(e) \ \& \ WG(e)]$ . So (24-31) exhibit a pattern of implications *and nonimplications* that is expected, given a conjunction reduction analysis of the implication from (8) to (9). I don't know of any other explanation for this pattern. So it seems that the meaning of 'stab' somehow introduces a variable corresponding to stabs, as indicated in (24a) and (25a), whose conjunction implies neither (30a) nor (31a).

- (24a)  $\exists e[S(e) \ \& \ C(e) \ \& \ WG(e)]$                       (25a)  $\exists e[S(e) \ \& \ P(e) \ \& \ WR(e)]$
- (30a)  $\exists e[S(e) \ \& \ C(e) \ \& \ WR(e)]$                       (31a)  $\exists e[S(e) \ \& \ P(e) \ \& \ WG(e)]$

Note that any real-world satisfiers of 'S(e)' have to be individuated more finely than ordered triples of the form  $\langle t, \text{Scarlet}, \text{Mustard} \rangle$ ; where  $t$  is some moment (or interval) of time. The two stabs of Mustard by Scarlet may have been simultaneous, each occurring at dawn.<sup>6</sup> By itself, this isn't a problem. One can plausibly posit simultaneous events that have the same participants. Famously, a sphere might be heating up as it spins; see Kim (1976), Davidson (1969). But imagine two rocks colliding, exactly once, with (32) and (33)

- (32) The grey rock struck the red rock.
- (33) The red rock struck the grey rock.

being equally correct reports of what happened. Call the rocks *Grey* and *Red*. It is tempting to say that a single event—the collision of *Grey* and *Red*, a.k.a. the collision of *Red* and *Grey*—satisfies both 'Struck(e, *Grey*, *Red*)' and 'Struck(e, *Red*, *Grey*)'. But consider (34) and (35).

- (34) The grey rock struck the red rock forcefully from the west.
- (35) The red rock struck the grey rock forcefully from the east.

Prima facie, 'From(e, TheWest)' and 'From(e, TheEast)' cannot both be true of the one collision. So might say that 'Struck(e, x, y)' is shorthand for 'Struck(e) &  $\exists f[e = \langle f, x, y \rangle]$ '. On this view, one can say that 'struck' is true of  $\langle \alpha, \beta, \gamma \rangle$  iff  $\alpha$  was an event of  $\beta$  striking  $\gamma$ , *and* that such an event can be one of  $\gamma$  striking  $\beta$ . If the logical forms of (32) and (33) are (32a) and (33a),

- (32a)  $\exists e\{\text{Struck}(e) \ \& \ \exists f[e = \langle f, \text{Grey}, \text{Red} \rangle]\}$
- (33a)  $\exists e\{\text{Struck}(e) \ \& \ \exists f[e = \langle f, \text{Red}, \text{Grey} \rangle]\}$

<sup>5</sup> Taylor (1985) discusses such examples, citing Christopher Arnold who cited Gareth Evans.

<sup>6</sup> But we cannot identify both stabs with  $\langle \text{dawn}, \text{Scarlet}, \text{Mustard} \rangle$ . More generally, events need to happen at times and have participants, but without *being* n-tuples of times and participants.

then the collision can be the one relevant value of ‘f’ for both sentences. But there are two relevant values of ‘e’, and in that sense distinct truth makers for (32a) and (33a): ‘Struck(e)’ is true of both <the collision, *Grey*, *Red*> and <the collision, *Red*, *Grey*>. Though one can go on to say that adverbial modifiers are like verbs in being true of ordered n-tuples that include participants. Perhaps ‘Forcefully(e)’ is true of both triples, while ‘From(e, TheWest)’ is only true of the first, and ‘From(e, TheEast)’ is only true of the second. This accommodates (34-35). But the proliferation of truth makers suggests that linguistic descriptions do matter with regard to what the conjuncts of logical forms are true of. Moreover, the issues illustrated with (34-35) are not confined to overtly “perspectival” predicates like ‘from the west’.

Davidson took the values of ‘e’-variables to be *both* things that can be described in many conjunctive ways, at least in an ideal language, *and* things that many Human Language predicates are true of. The question is whether our naturally acquired words conform to this conception of them. This invites attention to episodes that can be described in grammatically distinct but symmetric ways, as in (32-33), or in a correspondingly neutral way as in (36-37).<sup>7</sup>

(36) A rock struck a rock forcefully.

(37) There was a collision.

It is tempting to say that a certain language-independent event, the collision of the rocks, can be the one thing that ‘ $\exists x \exists y [\text{Struck}(e, x, y) \ \& \ \text{Rock}(x) \ \& \ \text{Rock}(y) \ \& \ \text{Forceful}(e)]$ ’ is true of. But was the striking of *Red* (by *Grey*) exactly as forceful as the collision? More generally, is every English predicate true of the collision if and only if it is true of either striking of rock by rock? Answering affirmatively invites a parade of apparent counterexamples. Answering negatively seems to undermine the attractions of Davidsonian analyses *if* we presuppose hypothesis (H).

(H) if *S* is a sentence of a Human Language, and *S\** is the logical form of *S*,  
then *S* has the truth condition that *S\** specifies

So perhaps we should reject (H) and view (32-37) as illustrations of framing, as opposed to existential closures of various event predicates that are true of a single event.

Examples like (38) raise similar issues, though with further complications.

(38) Mister Green married Miss Scarlet enthusiastically, but  
Miss Scarlet married Mister Green unenthusiastically.

One might say that ‘Married(e, Green, Scarlet)’ and ‘Married(e, Scarlet, Green)’ are true of *different* events, done by Green and Scarlet respectively. But if one of these events ended before the other—say because each event of marrying is identified with a certain speech act, and Green spoke first—there is an obvious difficulty. For even if (39) is correct, (40) is not.

(39) Green spoke before Scarlet did.

(39a)  $\exists e [\text{Spoke}(e, \text{Green}) \ \& \ \exists f [\text{Before}(e, f) \ \& \ \text{Spoke}(f, \text{Scarlet})]]$

(40) Green married Scarlet before she married him.

(40a)  $\exists e [\text{Married}(e, \text{Green}, \text{Scarlet}) \ \& \ \exists f [\text{Before}(e, f) \ \& \ \text{Married}(f, \text{Scarlet}, \text{Green})]]$

I think that (39a) and (40a) are plausible Davidsonian logical forms. But if (40a) is false, then (38) presents the same kind of difficulty as (2) and (3).

(2) Alvin chased Theodore gleefully and athletically but not skillfully.

(3) Theodore chased Alvin gleelessly and unathletically but skillfully.

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<sup>7</sup> See, e.g., Taylor (1985), Lasersohn (1990), Schein (2002, forthcoming). Plural event descriptions, as in ‘The rocks collided and rained down on the huts’, are beyond the scope of this paper; see Boolos (1998), Lasersohn (1995), Schein (1993), Landman (1996), Pietroski (2005).

Either ‘Married(e, Green, Scarlet)’ and ‘Married(f, Scarlet, Green)’ are satisfied by the *same* event, making it hard to see how (38) could be true, or Green and Scarlet participated in two simultaneous events of marrying.

Note that Scarlet and Green become married only if both were active participants in the ceremony. Likewise, both chipmunks had to be active in any event of one chasing the other. You can’t chase a chipmunk that stays still. But in some sense, (41)

(41) Alvin chased Theodore.

represents Alvin as more active than Theodore, while (42) represents Theodore as more active.

(42) Theodore chased Alvin.

This asymmetry is reflected in the “thematically elaborated” logical forms (41a) and (42a).

(41a)  $\exists e[\text{Agent}(e, \text{Alvin}) \ \& \ \text{Past}(e) \ \& \ \text{Chase}(e) \ \& \ \text{Patient}(e, \text{Theodore})]$

(42a)  $\exists e[\text{Agent}(e, \text{Theodore}) \ \& \ \text{Past}(e) \ \& \ \text{Chase}(e) \ \& \ \text{Patient}(e, \text{Alvin})]$

But given (41a) and (42a) as decompositions of ‘ $\exists e[\text{Chased}(e, \text{Alvin}, \text{Theodore})]$ ’ and ‘ $\exists e[\text{Chased}(e, \text{Theodore}, \text{Alvin})]$ ’, it seems—even without the adverbs—that no single event of can be both Alvin’s chase of Theodore and Theodore’s chase of Alvin: Alvin is the Agent of the former but not the latter; Theodore is the Patient of the former but not the latter. Likewise, it seems that no event Scarlet chasing Green could be an event of Green fleeing Scarlet.

One might reply that an event can have more than one Agent, and that  $\alpha$  satisfies ‘Agent(e, Alvin)’ if Alvin is one of the one or more Agents of  $\alpha$ . But then it seems that (43)

(43) Alvin lifted the piano, and then he played the trio.

would be true if Alvin was one of three musicians who together lifted the piano and played the trio.<sup>8</sup> That’s wrong. So plausibly,  $\alpha$  satisfies ‘Agent(e, Alvin)’ only if Alvin is *the* Agent of  $\alpha$ . In which case, (41) and (42) do not share a truth maker. Reports of perceptions, as in (44–46),

(44) Peacock heard Mustard yell.

(45) Peacock heard Mustard’s yell.

(46) Mustard yelled, and Peacock heard him.

raise a similar issue while providing further evidence for Davidsonian logical forms.

Such reports remind us that a verb like ‘heard’ can combine with an untensed clausal complement, like ‘Mustard yell’, to form a phrase.<sup>9</sup> It is hard to accommodate this point if the logical form of ‘heard’ is simply ‘Heard(x, y)’. But if the logical form of (46) is (46a),

(46a)  $\exists e[\text{Yelled}(e, \text{Mustard})] \ \& \ \exists e[\text{Heard}(e, \text{Peacock}, \text{him})]$

then (45a) is plausibly the logical form of (45); cp. (39a).

(45a)  $\exists e\exists f[\text{Heard}(e, \text{Peacock}, f) \ \& \ \text{Mustard’s}(f) \ \& \ \text{Yell}(f)]$

And like (45), (44) implies that there was a hearing of a yell that in some sense belongs to Mustard. So (44a) is plausibly the logical form of (44); see Higginbotham (1983), Vlach (1983).

(44a)  $\exists e\exists f[\text{Heard}(e, \text{Peacock}, f) \ \& \ \text{Yell}(f, \text{Mustard})]$

This hypothesis is further confirmed by the ambiguity of (47).

(47) Peacock heard Mustard yell in the hall.

<sup>8</sup> See Schein (2002). Perhaps Alvin did some piano-lifting. But (43) implies that some event was a *lifting of the piano* by Alvin. Moreover, ‘the piano’ can be replaced with ‘five pianos at once’.

<sup>9</sup> The phrase ‘heard that Mustard yelled’ is different again. If (44) is true, and Mustard was the tallest officer, then Peacock heard the tallest officer yell. But if she heard that Mustard yelled—say, because Plum passed on the rumor—she need not have heard that the tallest officer yelled.

Peacock may have been in the hall when she perceived the yell, or Mustard may have been in the hall when he yelled. These readings are captured with (47a) and (47b).

(47a)  $\exists e \exists f [\text{Heard}(e, \text{Peacock}, f) \ \& \ \text{Yell}(f, \text{Mustard}) \ \& \ \text{In}(e, \text{TheHall})]$

(47b)  $\exists e \exists f [\text{Heard}(e, \text{Peacock}, f) \ \& \ \text{Yell}(f, \text{Mustard}) \ \& \ \text{In}(f, \text{TheHall})]$

This raises the question of whether (44-46) can have the same truth makers. Positing multiple events of perception seems gratuitous. So suppose that Peacock’s perception  $\alpha$  can be described as hearing Mustard, hearing his yell, or hearing Mustard yell. And suppose that ‘heard’ is true of  $\langle \alpha, \text{Peacock}, \beta \rangle$ ; where  $\beta$  is the yell, which can be described with ‘Mustard yell’ or ‘his yell’. But to accommodate (46) and (48), ‘heard’ must also true of  $\langle \alpha, \text{Peacock}, \text{Mustard} \rangle$ .

(48) Peacock heard Mustard.

By itself, that might seem acceptable. While Mustard is distinct from his yell, one might hear him by hearing his yell. But it seems *ad hoc* to say that a single event can be a hearing of two things, even though a single event cannot have two Agents.

On the other hand, if Simon plays a song by playing a tuba, one might say that the single performance can be described in terms of either “thing played.” Though if the song-playing *is* the tuba-playing, then ‘Played(e, Simon, the song)’ and ‘Played(e, Simon, his tuba)’ are both true of the performance, which can be reported with (49) or (50).

(49) Simon played the song on his tuba.

(49a)  $\exists e [\text{Played}(e, \text{Simon}, \text{the song}) \ \& \ \text{On}(e, \text{his tuba})]$

(50) Simon played his tuba.

(50a)  $\exists e [\text{Played}(e, \text{Simon}, \text{his tuba})]$

In which case, ‘On(e, his tuba)’ is true of the performance, and so (51a) is true.

(51) Simon played his tuba on his tuba.

(51a)  $\exists e [\text{Played}(e, \text{Simon}, \text{his tuba}) \ \& \ \text{On}(e, \text{his tuba})]$

Yet an utterance of (51) would be false. The muddle spreads.

#### 4. Trying to Restore Comfort: Distinguish but Relate

I grant that *some* apparent puzzles for event analyses can be dealt with via two strategies: posit distinct but related events; or posit some relativization to description. I focus on the latter strategy in section five. But in my view, neither strategy plausibly extends to the hard cases.

Suppose that Scarlet shot Green exactly once, shortly after marrying him. In doing so, Scarlet will have acted in a way that can be described in many ways, say, with (52) and (53).

(52) Scarlet shot Green with a revolver.

(53) Scarlet pulled the trigger with her ring finger.

But let’s suppose that (54) and (55) are *not* correct ways of reporting what happened.

(54) Scarlet shot Green with her ring finger.

(55) Scarlet pulled the trigger with a revolver.

If (52a) and (53a) are true, but (54a) and (55a) are not,

(52a)  $\exists e [\text{Shot}(e, \text{Scarlet}, \text{Green}) \ \& \ \text{With}(e, \text{a revolver})]$

(53a)  $\exists e [\text{Pulled}(e, \text{Scarlet}, \text{the trigger}) \ \& \ \text{With}(e, \text{her ring finger})]$

(54a)  $\exists e [\text{Shot}(e, \text{Scarlet}, \text{Green}) \ \& \ \text{With}(e, \text{her ring finger})]$

(55a)  $\exists e [\text{Pulled}(e, \text{Scarlet}, \text{the trigger}) \ \& \ \text{With}(e, \text{a revolver})]$

then ‘Shot(e, Scarlet, Green)’ and ‘Pulled(e, Scarlet, the trigger)’ are satisfied by distinct events; see, e.g., Pietroski (1998). That’s not surprising. The event sortals differ. Green differs from the trigger. And the trigger was affected *first*, with the *subsequent* result that Green was affected; cp. Feinberg (1965) on the “accordion effect.” So one might say that the event of Scarlet pulling the

trigger was *part* of the event (or process) of her shooting Green, which may have been part of her killing Green; see Thalberg (1972), Thomson (1971, 1977). The trigger-pulling may itself have included a certain motion of Scarlet's ring finger, and perhaps a mental cause of that bodily motion. But here, it's enough to note that Green wasn't shot until the bullet entered him. The trigger was pulled a moment before. So plausibly, the predicates 'Shot(e, Scarlet, Green)' and 'Pulled(e, Scarlet, the trigger)' are satisfied by *distinct but related* events.

I think it's less plausible that *one* of Scarlet's actions is the truth maker for both (52a) and (53a).<sup>10</sup> Davidson (1967a) tried this "identificationist" strategy, according to which the apparent falsity of (54a) and (55a) must be explained away, in response to examples like (56) and (57).

(56) Scarlet shot Green at dawn, and he died (later that day) at noon.

(57) Scarlet killed Green at dawn, and he died (later that day) at noon.

Intuitively, (56) can be a correct report of what happened, while (57) is not. But Davidson held that if (56a) is true, so is (57a): (57) just *sounds* wrong because Green wasn't dead at dawn.

(56a)  $\exists e[\text{Shot}(e, \text{Scarlet}, \text{Green}_i) \ \& \ \text{At}(e, \text{dawn}) \ \& \ \exists f[\text{Died}(f, \text{he}_i) \ \& \ \text{At}(f, \text{noon})]]$

(57a)  $\exists e[\text{Killed}(e, \text{Scarlet}, \text{Green}_i) \ \& \ \text{At}(e, \text{dawn}) \ \exists f[\text{Died}(f, \text{he}_i) \ \& \ \text{At}(f, \text{noon})]]$

The idea was that while 'Stabbed(e, Scarlet, Green)' and 'Killed(e, Scarlet, Green)' are both true of Scarlet's action at dawn, an action not correctly described *as* a killing until Green died, much as an award-winning performance is not to be described as such until the award is given.

According to Davidson, an action occurs wholly where the actor is. If the action was a killing, it follows that someone died; though it doesn't follow the death was part of the action. I agree. But one can grant this point, taking actions to be causal contributions of agents, and conclude that 'Killed(e, Scarlet, Mustard)' is not true of an action in this technical sense. For one might think that utterances of (57) are false, and not merely odd, given that (58) sounds fine.

(58) Scarlet shot Green fatally at dawn, and he died at noon.

A stabbing, like an illness, can be described as fatal before the relevant death. So it seems that the killing differs from the fatal stabbing after all: the killing, unlike Scarlet's action, is not over until Green dies. So positing *distinct but related* events is plausible for some cases, especially where it is independently plausible that the relevant event predicates are satisfied by processes that exhibit part-whole relations. But this strategy seems unsuited to examples like (2) and (3).

(2) Alvin chased Theodore gleefully and athletically but not skillfully.

(3) Theodore chased Alvin gleelessly and unathletically but skillfully.

If there are *two* chasings, they occupy the same region of spacetime and have the same participants. Such events, satisfying the same sortal term, would be *very* intimately related. Perhaps one can distinguish a statue from the lump of material that constitutes it, even if their careers (as existents) start and finish together. For perhaps statues and lumps of material are just things of different sorts, and this underpins certain modal differences. (Likewise, an event of heating is plausibly distinct from any co-located event of spinning.) But it begs the questions at hand to insist that Alvin's chase of Theodore differs modally from Theodore's chase of Alvin. One can try to argue that chases of Theodore and chases of Alvin are events of different sorts.

<sup>10</sup> See Wilson (1989), Ginet (1990), Pietroski (2000). Perhaps (52) and (53) can both be used to talk about the relevant "root action," whatever it turns out to be. Speakers can use expressions to talk about things that the expressions are not true of; see, e.g., Donnellan (1966). One can posit forms like the following:  $\exists a \exists e[R(a, e) \ \& \ \text{Shot}(e, \text{Scarlet}, \text{Green})]$ ; where  $R(A, E)$  is true of  $\langle \alpha, \beta \rangle$  if and only if  $\alpha$  is the action "at the root of"  $\beta$ . But even if this formal claim is true if and only if Scarlet shot green, this may reflect the metaphysics of shooting, not the meaning of 'shoot'.

But then one needs some account of event sorts. Gleeful chases of Theodore and athletic chases of Theodore had better not be events of different sorts, in any way that precludes (token) identity claims, on pain of spoiling Davidsonian accounts of implications and nonimplications. One can say that “direct objects matter” for these purposes. But then it’s hard to see the difference between positing *two* chases, and positing *one* chase along with the claim that a certain difference in *linguistic description* is semantically relevant.

In this respect, examples like (49) and (50) are again instructive.

(49) Simon played the song on his tuba.

(49a)  $\exists e[\text{Played}(e, \text{Simon}, \text{the song}) \ \& \ \text{On}(e, \text{his tuba})]$

(50) Simon played his tuba.

(50a)  $\exists e[\text{Played}(e, \text{Simon}, \text{his tuba})]$

Suppose that Simon played the song in question exactly once. Let  $\pi$  be the event of him playing that song, so that  $\pi$  is the truth maker for (49a) and plausibly a truth maker for (50a). Even if (49a) does not logically imply (50a), the latter is true if the former is true. Of course, (50a) would be true if Simon only played part of the song on his tuba. But let  $\pi'$  be the event of tuba playing that has the same spatiotemporal properties as  $\pi$ . Then  $\pi'$  is one among many truth makers for (50a). And intuitively,  $\pi'$  is the same event as  $\pi$ . If  $\pi$  was a performance of “My Way” that started at noon and ended three minutes later, then  $\pi'$  can also be described this way. Moreover,  $\pi$  and  $\pi'$  appear to have all the same causes and effects: if event  $\alpha$  was a vibration of air caused by  $\pi$ , then  $\alpha$  was caused by  $\pi'$ ; if  $\pi$  was caused by a desire to impress the audience, then so was  $\pi'$ .<sup>11</sup>

It begs the questions at hand to insist that  $\pi$  differs modally from  $\pi'$ . One can try to argue that song-playings and tuba-playings are events of different sorts. But then one needs an account of event sorts. And insisting that “direct objects matter” will lead to grief. For suppose that Simon flipped a certain switch and thereby played: *a record, a song, a Beatles tune, a cover of a Beatles Tune, his favorite track, a recording of a song, a hit record, a top ten hit*. (Indeed, if Simon is a deejay, he may have played all those things on the radio.) It seems perverse to say that Simon is the agent of so many *distinct but related* events, occupying the same region of spacetime, instead of saying that these are many *ways of reporting* some of what happened when he flipped the switch. Reporters can choose from boundlessly many different descriptions of certain effects of making a certain grooved piece of vinyl spin.

I can’t prove that the strategy of positing distinct but related events is wrong for these cases. (Perhaps someone else can construct a suitable diagonalization.) But this strategy does not merely suffer from metaphysical profligacy. It threatens the very idea that event variables have values that can satisfy boundlessly many predicates, many of which are logically independent. And if this idea is abandoned, it’s hard to see point of saying that Human Language predicates are often satisfied by (or true of) the values of event variables. This is not to deny the attractions of positing distinct but related events. Many reports of “what happened” in a given region of spacetime may have the logical form ‘ $\exists e[\Phi(e)]$ ’, for some complex predicate ‘ $\Phi$ ’. But it may not be possible to identify any event as both the relevant “thing that happened” and the common truth maker for (the logical forms of) the reports. This can make it tempting to posit many events—at the limit, one per report—until one thinks about the implications.

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<sup>11</sup> Of course, Simon played the song by playing his tuba, and not vice versa. But this asymmetry, which may well reflect order of *intentions*, is not yet any reason for distinguishing  $\alpha$  from  $\alpha'$ ; see Anscombe (1957), Thomson (1977), Hornsby (1980).

If we could be sure that our judgments in these cases coherently reflect the things that happened, however many there were, then our judgments concerning the truth of sentential utterances might favor the strategy of positing surprisingly many events. But in using Human Languages to report and think about what happened, we may report and think only in frame-dependent ways. And there is no guarantee that our various ways of framing what happened can be coherently viewed as representations of description-neutral events. Indeed, we have independent evidence of framing effects that run deep in human cognition, but no independent evidence for co-located playings/chasings/etc. So absent good reasons for thinking that our judgments in these cases reflect the existence of distinct but intimately related events, positing such events seems *less* motivated than revising the relevant assumptions about how meaning, truth, and logical form are related. But there remains the question of whether such revision is better motivated than less metaphysically profligate ways of responding to the puzzle cases.

### 5. Trying to Restore Comfort: Identify but Relativize

Return now to the event  $\pi$  of Simon playing the song on his tuba, and the corresponding event  $\pi'$  of Simon playing his tuba. As noted above, simply identifying  $\pi$  with  $\pi'$  won't do.

Suppose that  $\pi$  satisfies 'Played(e, Simon, his tuba)' and 'Played(e, Simon, the song)' and 'On(e, his tuba)'. Then  $\pi$  is a truth maker for (51a). This predicts, implausibly, that (51) is true.

(51) Simon played his tuba on his tuba.

(51a)  $\exists e[\text{Played}(e, \text{Simon, his tuba}) \ \& \ \text{On}(e, \text{his tuba})]$

If (59a) and (60a) are also true, then  $\pi$  satisfies 'In(e, three minutes)' and 'For(e, three minutes)'.

(59) Simon played the song in three minutes.

(59a)  $\exists e[\text{Played}(e, \text{Simon, the song}) \ \& \ \text{In}(e, \text{three minutes})]$

(60) Simon played his tuba for three minutes.

(60a)  $\exists e[\text{Played}(e, \text{Simon, his tuba}) \ \& \ \text{For}(e, \text{three minutes})]$

In which case, (61a) is true. Yet (61) is almost incomprehensible, and so presumably not true.

(61) \*Simon played his tuba in three minutes.

(61a)  $\exists e[\text{Played}(e, \text{Simon, his tuba}) \ \& \ \text{In}(e, \text{three minutes})]$

This raises the question of why (61) cannot be understood as a way of expressing (61a). Note that (62) is comprehensible, despite being defective. It has the meaning of (62a), not (62b);

(62) \*The child seems sleeping.

(62a) The child seems to be sleeping.

(62b) The child seems sleepy.

see Chomsky (1965), Higginbotham (1985). So why isn't (61) understood as a (perhaps odd) way of saying what one says with (60)?

One can describe the unacceptability of (61) in terms of a formal property exhibited by 'in' but not 'for'. Indeed, the facts are well known, and not hard to describe. Roughly speaking, a "telic" modifier like 'in three minutes' is licensed only if the modified phrase specifies an "endpoint" condition on potential satisfiers.<sup>12</sup> Compare (63) with (64).

(63) Alvin ran to/through/past the park in three minutes.

(64) \*Alvin ran towards/in/near the park in three minutes.

An event of running *to* the park ends when the runner reaches the park, while 'towards the park' has no corresponding implication. Of course, every run ends somewhere; but the prepositional phrase does not specify an endpoint. Note that 'ran around the park *in* an hour' implies a loop, but 'ran around the park *for* an hour' does not. Likewise, an event of playing the song ends

<sup>12</sup> See especially Tenny (1994) and further references there.

(modulo vagueness) when the final notes are sounded. But ‘played his tuba’ has no corresponding implication, even though no tuba playing goes on forever.

That, however, is no defense of the idea that ‘played his tuba’ and ‘in three minutes’ are satisfied by language-independent events. On the contrary, it suggests that meanings have to do with how events are *represented*. The triviality of (65) suggests that in some sense,

(65) If Simon played the song on his tuba in three minutes,  
then Simon played his tuba for three minutes.

speakers recognize that any event of playing a song on a tuba in three minutes is an event of playing that tuba for three minutes. Yet replacing ‘for’ with ‘in’—the very preposition used in the antecedent of—makes a mess of the consequent.

(65-i) If Simon played the song on his tuba in three minutes,  
then Simon played his tuba in\* three minutes.

This can be explained if ‘in three minutes’ is *unlike* ‘In(e, three minutes)’, in that the Human Language phrase is a grammatically coded instruction for how to build a certain kind of telic concept, while ‘played his tuba’ is a grammatically coded instruction for how to build a certain kind of atelic concept. But if ‘in three minutes’ is *like* ‘In(e, three minutes)’ in being satisfied by  $\pi$  if and only if  $\pi$  took place in three minutes, then why can’t (61) and (65-i) be so understood?

Given these considerations, one might supplement an identification strategy with some appeal to description-relative predicates. In particular, one might draw attention to an example that Davidson (1967a) discussed. Suppose an athlete swims across the English Channel. Presumably, an event can be quick for a channel-swimming yet slow for a channel-crossing, much as an insect can be large for an ant yet small for an animal. So it would be rash to conclude that the swimming was an event distinct from the crossing, just because both (66) and (67)

(66) The athlete swam the channel quickly.

(67) The athlete crossed the channel slowly.

can be used to report what the athlete did. Formalism like (66a) and (67a) can be viewed as shorthand for more articulated logical forms of the sort indicated in (66b) and (67b).

(66a)  $\exists e[\text{Swam}(e, \text{the athlete, the channel}) \ \& \ \text{Quick}(e)]$

(66b)  $\exists e[\text{Agent}(e, \text{the athlete}) \ \& \ \text{Swam}_i(e, \text{the channel}) \ \& \ \text{Quick-For}(e, \Delta_i)]$

(67a)  $\exists e[\text{Crossed}(e, \text{the athlete, the channel}) \ \& \ \text{Slow}(e)]$

(67b)  $\exists e[\text{Agent}(e, \text{the athlete}) \ \& \ \text{Crossed}_i(e, \text{the channel}) \ \& \ \text{Slow-For}(e, \Delta_i)]$

The (b)-forms encode the idea that ‘quickly’ and ‘slowly’ are relativized to ‘crossed the channel’ and ‘swam the channel’, allowing for comparisons to other events of the same sort, perhaps done by other agents. And I have no objection to separating out ‘Agent(e, the athlete)’; see Castañeda (1967), Davidson (1985), Parsons (1990), Schein (1993), Kratzer (1998), Pietroski (2005).

This suggests an obvious extension to examples like (68-69).

(68) Simon played his tuba well.

(69) Simon played the song well.

Taking ‘well’ to be the adverbial version of ‘good’, one might say that an event can be good *for a tuba-playing* without being good *for a song-playing*. But if only because ‘big’, ‘slow’, and ‘good’ can appear in constructions like (70),

(70) Of those two ants, Adam is the big/slow/good one,  
but other ants are even bigger/slower/better.

it isn’t clear how to plausibly extend the “identify but relativize” strategy to other modifiers. Put another way, it’s not implausible that ‘big’, ‘slow’, and ‘good’ are understood in terms of the



relational concepts that we often express with comparative morphemes. To a first, though only first approximation: to be a big/slow/good  $\Phi$  is to be a  $\Phi$  that is bigger/slower/better than most; and if  $x$  is big/slow/good, then for some  $\Phi$ ,  $x$  is a big/slow/good  $\Phi$  (cp. Thomson [2008]). But prima facie, this pattern does not extend to all modifiers, lexical or phrasal. Consider (71).

(71) Simon played the song in the style of Sinatra.

I don't think that 'in the style of Sinatra' is understood, on its own, in terms of what it is to be in the style of Sinatra *for a*  $\Phi$ . But one can hypothesize that the relativization is introduced compositionally, as a reflex of modifying a phrase with a grammatical adjunct. Perhaps all phrases of the form [[VERB OBJECT] MODIFIER] have the logical form indicated in (72),

(72) VERB<sub>*i*</sub>(e, OBJECT) & MODIFIER-For(e,  $\Delta_i$ )

whose instances include 'Played<sub>*i*</sub>(e, the song) & In-The-Style-of-Sinatra-For(e,  $\Delta_i$ )'. But note that this changes—and arguably trivializes—the Davidsonian account of predicate modification: it's not that modifiers apply to the very events that unmodified verb phrases apply to; rather, modifiers express relations that can be exhibited by verb phrases and whatever they apply to. Moreover, for many modifiers as in (73), any relativization has to be truth-conditionally inert.

(73) Yesterday, Simon played his tuba while Phosphorus was still visible.

Recall the similar point concerning 'struck forcefully' vs. 'struck from the east'.

It's also hard to know what the "identify but relativize" strategy predicts, once we get beyond examples like (66-69). If a theory predicts that (71) is true only if some event of Simon playing the song satisfies a certain metalanguage predicate  $P$ , then one wants to know if Simon's song-playing satisfies  $P$ . Now it's already a little unclear what it is for an event to be in the style of Sinatra. But as a competent speaker of English who knows what a personal style is, I could—perhaps after reviewing some of Sinatra's performances—make judgments about whether certain performance by others were Sintraesque. I would, however, be confused by the following instruction: don't say whether what Simon did on stage (with his tuba) was done in the style of Sinatra; rather, say whether Simon's playing of the song was Sintraesque for an event of that sort, and whether his tuba-playing was Sintraesque for an event of that sort. So even if the logical form of (71) is more complex than (71a), (71b) seems complex in a wrong way.

(71a)  $\exists e[\text{Played}(e, \text{Simon, his tuba}) \ \& \ \text{In}(e, \text{the style of Sinatra})]$

(71b)  $\exists e[\text{Agent}(e, \text{Simon}) \ \& \ \text{Played}_i(e, \text{the song}) \ \&$

$\text{In-The-Style-of-Sinatra-For}(e, \Delta_i)]$

Again, my point is not that relativizing to descriptions is always illegitimate. A musical performance can trigger the spontaneous judgment that the instrument was played well, while the music was not. We know that a four-minute mile is quick in some contexts but not others. The quick/slow contrast can also be deployed to modify boundlessly many intuitively diverse predicates—e.g., 'crossed the Channel', 'proved a theorem', and 'removed an appendix'. Correlatively, we tacitly know what it is to be quick for a Channel-swimming yet slow for a Channel-crossing: it is (roughly) to be an event of swimming across the Channel in significantly less than the average time required for such a swim, though significantly more than the average time required to get across the Channel in a more standard way. So plausibly, speakers know that this is what it is for a value of an event variable to be one in which the Channel is swum quickly but crossed slowly. Many other dimensions of variation can be relativized to predicates in this way. But prima facie, boundlessly many modifiers do not fit this model.

I think we know—or at least can come to know—what it is for a vocal performance, or an acting performance, or perhaps a whole life to be Sintraesque. And we may know what it is for

a performance to be Sinatraesque for a vocal (as opposed to acting) performance. But it doesn't follow that we know what it is for a singing of "Happy Birthday" to be Sinatraesque *for a singing of that song*, as opposed to being Sinatraesque simpliciter. Given Marilyn Monroe's famous singing of that song for John Kennedy, we know how to construe (74).

(74) At the party, someone sang "Happy Birthday" in the style of Monroe.  
But (75) does not imply there is a distinctly Sinatraesque version of that particular song.

(75) At the party, someone sang "Happy Birthday" in the style of Sinatra.

Likewise, we may have a dim sense of what it would be to prove a theorem (remove an appendix, play a tuba) Sinatraesquely—perhaps it involves holding a cigarette, wearing a Fedora at just the right angle, and making the task at hand seem easy—without having any independent sense of what it would be for an action to be Sinatraesque *for a theorem-proving*. In short, I think that apart from some important special cases, the relativization component of the "identify but relativize" strategy is otiose. It does provide formalism that insulates Davidsonian event analyses from certain objections. But that is not a virtue. Let me change the example to stress this point.

Suppose that Simon played the song in the way his Uncle Jim taught him: in a certain key, with a certain lilt, and introducing a few unexpected notes during the bridge. Suppose that Simon also played his tuba in the way his Aunt Joan taught him: with a certain embouchure, back straight, and using certain alternate fingerings for improved tone. For simplicity, let's say that Simon played the song *Jimishly*, and that he played his tuba *Joanishly*. Again, let  $\pi$  be the event that allegedly satisfies both 'Played(e, Simon, the song)' and 'Played(e, Simon, his tuba)'. Then  $\pi$  was Jimish and Joanish. We don't need to say that  $\pi$  was *Jimish for a playing of the song* and *Joanish for a playing of Simon's tuba*. Moreover, I don't think we should say this.

It's not clear what the difference is, or could be, between  $\pi$  being Jimish—in D-major, lilting, etc.—and being Jimish *for a playing of the song*. We can say that the logical form of (74)

(74) Simon played the song in the way his Uncle Jim taught him.

is (74a), without recasting (74a) as (74b).

(74a)  $\exists e[\text{Agent}(e, \text{Simon}) \ \& \ \text{Played}(e, \text{the song}) \ \& \ \text{Jimishly}(e)]$

(74b)  $\exists e[\text{Agent}(e, \text{Simon}) \ \& \ \text{Played}_i(e, \text{the song}) \ \& \ \text{Jimishly-For}(e, \Delta_i)]$

Likewise, we can say that the logical form of (75) is (75a), without recasting (75a) as (75b).

(75) Simon played the song in the way his Aunt Joan taught him.

(75a)  $\exists e[\text{Agent}(e, \text{Simon}) \ \& \ \text{Played}(e, \text{his tuba}) \ \& \ \text{Joanishly}(e)]$

(75b)  $\exists e[\text{Agent}(e, \text{Simon}) \ \& \ \text{Played}_i(e, \text{his tuba}) \ \& \ \text{Joanishly-For}(e, \Delta_i)]$

The supplementary analyses of 'Jimishly(e)' and 'Joanishly(e)' seem unneeded and unwanted, except as side-effects of insulating Davidsonian event analyses from certain objections.

Of course, if  $\pi$  satisfies 'Played(e, Simon, the song)' and 'Played(e, Simon, his tuba)' and 'Jimish(e)' and 'Joanish(e)', then  $\pi$  satisfies 'Played(e, Simon, the song) & Joanish(e)' and 'Played(e, Simon, his tuba) & Jimish(e)'. In which case, (76a) and (77a) are true.

(76) Simon played the song in the way his Aunt Joan taught him.

(76a)  $\exists e[\text{Agent}(e, \text{Simon}) \ \& \ \text{Played}(e, \text{the song}) \ \& \ \text{Joanishly}(e)]$  d

(77) Simon played his tuba in the way his Uncle Jim taught him.

(77a)  $\exists e[\text{Agent}(e, \text{Simon}) \ \& \ \text{Played}(e, \text{his tuba}) \ \& \ \text{Jimishly}(e)]$

And that predicts, wrongly, that (utterances of) the English sentences (76) and (77) are true.

This makes a relativization strategy initially attractive. Many reports of "what happened" on a stage may have the logical form ' $\exists e[\Phi(e) \ \& \ J(e)]$ '. But it may not be possible to identify any "thing that happened" as the common truth maker for (the logical forms of) the reports. This

makes it tempting to posit rampant relativization, until one thinks about the implications. If we could be sure that our judgments of truth/falsity in these cases coherently reflected the degree of relativization in logical forms, then judgments concerning the truth of sentential utterances might favor a relativization strategy. But in using Human Languages to report and think about what happened, we may report and think only in frame-dependent ways. And while we have independent evidence for framing effects that run deep in human cognition, we have no independent evidence for the requisite rampant relativization in logical forms.

## 6. Resolutions and Final Remarks

It would be nice to just stop here. Nonspecialists may want to. But Schein (2002, forthcoming) offers sophisticated event analyses according to which: the relevant domain—the world in which we think and talk—includes not just description-neutral events, but also “scenes” in which these events are grammatically presented or “resolved” in particular ways; and logical forms include variables for *both* description-neutral events *and* grammatically individuated resolutions.

In terms of notation, Schein replaces Davidsonian conjuncts of the form ‘ $\Phi(e)$ ’ with conjuncts of the form  $\exists e_1[R(e, e_1) \ \& \ \Phi(e_1)]$ ; where;  $R(e, e_1)$  is in turn cashed out in terms of  $e_1$  being the resolution of  $e$  in some scene. For example, ‘Agent( $e$ , Alvin)’ is to be replaced with ‘ $\exists e_1 \exists s_1[R(e, s_1, e_1) \ \& \ \text{Agent}(e_1, \text{Alvin})]$ ’; where ‘ $R(e, s_1, e_1)$ ’ is satisfied by  $\langle \alpha, \beta, \gamma \rangle$  iff  $\gamma$  is the resolution in  $\beta$  of the Davidsonian (description-neutral) event  $\alpha$ , and ‘Agent( $e_1, x$ )’ is satisfied by  $\langle \gamma, \delta \rangle$  iff  $\delta$  is (presented as) the Agent in  $\gamma$ . Sentential logical forms like (41a) and (42a)

$$(41a) \exists e[\text{Agent}(e, \text{Alvin}) \ \& \ \text{Past}(e) \ \& \ \text{Chase}(e) \ \& \ \text{Patient}(e, \text{Theodore})]$$

$$(42a) \exists e[\text{Agent}(e, \text{Theodore}) \ \& \ \text{Past}(e) \ \& \ \text{Chase}(e) \ \& \ \text{Patient}(e, \text{Alvin})]$$

are thus replaced with “two-tiered” variants that imply (41b) and (42b), respectively;

$$(41b) \exists e\{\exists e_1[R(e, e_1) \ \& \ \text{Agent}(e_1, \text{Alvin})] \ \& \ \exists e_1[R(e, e_1) \ \& \ \text{Patient}(e_1, \text{Theodore})]\}$$

$$(42b) \exists e\{\exists e_1[R(e, e_1) \ \& \ \text{Agent}(e_1, \text{Theodore})] \ \& \ \exists e_1[R(e, e_1) \ \& \ \text{Patient}(e_1, \text{Alvin})]\}$$

where for readability, quantification over scenes has here been folded back into ‘ $R(e, e_1)$ ’.

The *one* chase can be the relevant value of the matrix variable ‘ $e$ ’ in both (41b) and (42b). But on Schein’s view, this event can be resolved (or “redrawn”) in many ways, including ways that correspond to seeing the chase *as* an event that has a certain Agent, or a certain Patient. The hypothesized resolutions of the chase are the relevant values of the indexed variables. Each chipmunk can be seen as either an Agent or a Patient. But (41) presents Alvin as the Agent and Theodore as the Patient, while (42) presents Theodore as the Agent and Alvin as the Patient. So once ‘Chase( $e$ )’ is replaced with ‘ $\exists e_1[R(e, e_1) \ \& \ \text{Chase}(e_1)]$ ’, it is clear that the verb phrases—‘chased Theodore’ and ‘chased Alvin’—can be consistently modified with, respectively, ‘gleefully and athletically but not skillfully’ and ‘gleelessly and unathletically but skillfully’.

Suppose these modifiers correspond to predicates of the form ‘ $\Phi(e_1)$ ’ and ‘ $\sim\Phi(e_1)$ ’. Then (2b) can be replaced with a two-tiered logical form that implies both (41b) and (2c);

$$(2b) \exists e[\text{Chased}(e, \text{Alvin}, \text{Theodore}) \ \& \ \Phi(e)]$$

$$(2c) \exists e\{\exists e_1[R(e, e_1) \ \& \ \text{Chase}(e_1)] \ \& \ \exists e_1[\Phi(e_1)]\}$$

where (2c) might be simplified, at least for many purposes, as (2d).

$$(2d) \exists e\exists e_1[R(e, e_1) \ \& \ \text{Chase}(e_1) \ \& \ \Phi(e_1)]$$

Likewise, (3b) can be replaced with a logical form that implies both (42b) and (3c/3d).

$$(3b) \exists e[\text{Chased}(e, \text{Theodore}, \text{Alvin}) \ \& \ \sim\Phi(e)]$$

$$(3c) \exists e\exists e_1[R(e, e_1) \ \& \ \text{Chase}(e_1) \ \& \ \sim\Phi(e_1)]$$

$$(3d) \exists e\{\exists e_1[R(e, e_1) \ \& \ \text{Chase}(e_1)] \ \& \ \exists e_1[\sim\Phi(e_1)]\}$$

The idea is that the chase can be *simultaneously seen as* a  $\Phi$ -ish chase *and* something Alvin did. The chase can also be *simultaneously seen as* a  $\sim\Phi$ -ish chase *and* something Theodore did. With regard to Simon's performance, the idea is that a played-the-song *resolution of* that performance differs from played-his-tuba *resolution*; where the former resolution is telic, supporting modifiers like 'in an hour', while the latter is not.

I cannot here do full justice to Schein's discussion of various puzzle cases, and the implications of taking telicity considerations seriously. But much of his discussion is devoted to arguing, quite compellingly, against other responses to the puzzle cases. And I agree that his two-tiered approach is better than invoking rampant relativization, at least for purposes of providing logical forms that reflect the ways in which competent speakers *understand* sentences. Indeed, my own views have been deeply influenced by Schein's work. But for purposes of providing logical forms that specify alleged *truth conditions* of Human Language sentences, I don't think Schein's two-tiered approach is significantly better than positing lots of intimately related events that share their participants and a spatiotemporal address; see section four. That said, the difference between my view and his may be more terminological than substantive. We are both primarily concerned with the natural phenomenon of linguistic understanding; and while Schein characterizes understanding in terms of truth, the truth conditions he specifies are overtly perspectival and description-sensitive in ways at odds with Davidson's program.<sup>13</sup>

In any case, one wants to know what the posited scene-relative resolutions *are*. Schein starts with an animating example. The event (or state) of Carnegie Deli facing Carnegie Hall *is* the event of Carnegie Hall facing Carnegie Deli. But whichever way one heads on Seventh Avenue in Manhattan, there is a left side and right side. So one can speak of a northward scene and a distinct southward scene such that everything on the left side of the former is on the right side of the latter. Though as Schein notes, other examples will strain any simple dyadic notion of scenes as perspectives on events. For example, one can weigh a car by weighing its parts. Like Davidson, Schein does not want to posit an *event* of weighing the car that is distinct from the co-located *event* of weighing the car's parts. But here, appeal to spatiotemporal reference frames seems irrelevant. So drawing on the idea that each scene comes with a degree of resolution—think about zooming in or out with a lens—Schein suggests that every scene *s* comes with a "reticule" that resolves the event that *s* is a scene of.

The idea is that if *w* is the worldly event of weighing, there is a complete-car scene *c* and a car-parts scene *p* such that:  $\text{Resolves}(c, w)$ ;  $\text{Resolves}(p, w)$ ; but *c* and *p* resolve *w* differently. But note that even if the world includes many perspectives on each event, with perspectives individuated a Fregean way, that doesn't yet get us *resolutions* as domain entities. The posited scenes have to be suitably loaded with reticules. In this sense, Schein's appeal to scenes is not innocuous. The ontology is tendentious.

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<sup>13</sup> In personal correspondence, Schein says that he finds theses (H) and (D)—from section one—untenable, and that he does not identify meanings with truth conditions. He is, though, inclined to retain a modified version of (H): if *S* is a sentence of a Human Language, and *S\** is the logical form of *S* then *S* has no truth condition that deviates from the truth condition if any that *S\** specifies. This is because Schein takes a logical form to represent both subjective and objective aspects of a speaker's situation—her mental state and ambient conditions, at a moment of utterance—in a way that capture certain invariance(s) across expressions, thoughts, and contexts; cp note 2 above. See Ludlow (2011) for related discussion.

This matters, and not just for metaphysicians. On Schein's view, (41) and (42) are *false*  
(41) Alvin chased Theodore.  
(42) Theodore chased Alvin.

if the world includes the two chipmunks who chased each other, and the event of them chasing each other, but not the requisite resolutions of the chase. Put another way, his theory implies that these sentences (logically) imply that there *are* resolutions, as indicated in (41b-42b) and (2c-3c). That's a tendentious claim about sentences of a Human Language. One might instead view the formal sentences as proposed theoretical representations of both the language-independent events/participants that speakers think and talk about, and some ways in which speakers represent those spatiotemporally located particulars. For certain purposes, it may be legitimate to mix ontology and psychology in this way. Theorists may want to say *both* that speakers use sentences like (41) and (42) to assemble thoughts of a certain sort *and* that if all goes well, the assembled thoughts will be true or false depending on whether or not an event of a certain sort occurred. But absent independent grammatical evidence for scene variables, I don't think that speakers tacitly quantify over scenes and resolutions, as if they are (qua competent speakers) cognizant of how complicated word-mind-world relations are.

That's not yet an argument against Schein, as opposed to an alternative diagnosis of his conclusions. And again, sorting out the differences between views may not be easy. (Though if theories that assign truth conditions to Human Language sentences can be recast as theories that don't, that's already significant.) Like Schein and many others, I think speakers understand sentences of a Human Language by virtue of relating these sentences to *representations of* events and their participants. If one also wants to say that these sentences have truth conditions, then given the puzzle cases, the difficulties that beset other responses make Schein's response relatively attractive and perhaps unavoidable: specify the truth conditions in terms of abstracta—viz., resolutions of events—that reflect the representations. But perhaps sentences are tools with which we often make truth evaluable claims, in contexts where all goes well, and not expressions that have truth conditions relative to contexts. Given this Strawsonian view, perhaps we can make do with less intellectualized logical forms, while also remembering that there are many ways in which things can fail to go well. In particular, the very linguistic capacities that let us generate sentences may render us subject to deep framing effects.<sup>14</sup>

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