

Against a Davidsonian Analysis of Copula Sentences*

Claudia Maienborn

Humboldt University Berlin

1. Introduction

Semantic research over the past three decades has provided impressive confirmation of Donald Davidson's famous claim that "there is a lot of language we can make systematic sense of if we suppose events exist" (Davidson 1980:137). Nowadays, Davidsonian event arguments are no longer reserved only for action verbs (as Davidson originally proposed) or even only for the category of verbs, but instead are widely assumed to be associated with any kind of predicate (e.g. Higginbotham 2000, Parsons 2000).¹ The following quotation from Higginbotham and Ramchand (1997) illustrates the reasoning that motivates this move:

Once we assume that predicates (or their verbal, etc. heads) have a position for events, taking the many consequences that stem therefrom, as outlined in publications originating with Donald Davidson (1967), and further applied in Higginbotham (1985, 1989), and Terence Parsons (1990), we are not in a position to deny an event-position to any predicate; for the evidence for, and applications of, the assumption are the same for all predicates. (Higginbotham and Ramchand 1997:54)

In fact, since Davidson's original proposal the burden of proof for postulating event arguments seems to have shifted completely, leading Raposo and Uriagereka (1995), for example, to the following verdict:

* This paper is based on parts of my Habilitation thesis (published as Maienborn 2003a). Thanks to the NELS 33 audience as well as to Manfred Bierwisch, Johannes Dölling, Veronika Ehrich, Stefan Engelberg, Werner Frey, Bart Geurts, Gerhard Jäger, Hans Kamp, Manfred Krifka, Fred Landman, Ewald Lang, Barbara Partee, Benjamin Shaer and Arnim von Stechow for helpful discussion and comments. Special thanks to Ben for checking my English.

¹ Throughout this paper, I use the term "event" as a cover term for events proper, processes and (certain) states; cf. Bach's (1986) notion "eventuality". Other labels that can be found in the literature for an additional Davidsonian event argument include "spatiotemporal location" (e.g. Kratzer 1995) and "Davidsonian argument" (e.g. Chierchia 1995).

it is unclear what it means for a predicate not to have a Davidsonian argument
(Raposo and Uriagereka 1995:182)

That is, Davidsonian eventuality arguments apparently have become something like a trademark for predicates in general.

The goal of the present paper is to subject this view of the relationship between predicates and events to real scrutiny. By taking a closer look at the simplest independent predicational structure – viz. copula sentences – I will argue that current Davidsonian approaches tend to stretch the notion of events too far, thereby giving up much of its linguistic and ontological usefulness. More specifically, the paper will tackle the following three questions:

1. Do copula sentences support the current view of the inherent event-relatedness of predicates?
2. If not, what is a possible alternative to an event-based analysis of copula sentences?
3. What does this tell us about Davidsonian events?

The paper is organized as follows: Section 2 first reviews current event-based analyses of copula sentences and then gives a brief summary of the Davidsonian notion of events. Section 3 examines the behavior of copula sentences with respect to some standard (as well as some new) eventuality diagnostics. Copula expressions will turn out to fail all eventuality tests. They differ sharply from state verbs like *stand*, *sit*, *sleep* in this respect. (The latter pass all eventuality tests and therefore qualify as true “Davidsonian state” expressions.) On the basis of these observations, section 4 provides an alternative account of copula sentences that combines Kim’s (1969, 1976) notion of property exemplifications with Asher’s (1993, 2000) conception of abstract objects. Specifically, I will argue that the copula introduces a referential argument for a temporally bound property exemplification (= “Kimian state”). The proposal is implemented within a DRT framework. Finally, section 5 offers some concluding remarks and suggests that supplementing Davidsonian eventualities by Kimian states not only yields a more adequate analysis for copula expressions and the like but may also improve our treatment of events.

2. Event-based analyses of copula sentences

Within the Davidsonian paradigm, copula sentences are standardly analyzed as referring to eventualities or, more specifically, to states, in which a property given by the predicate holds of the subject referent. There are basically two strategies for implementing this idea, that differ with respect to the source that they claim for the eventuality argument, one taking this to be introduced by the copula and the other taking it to originate in the predicate.

2.1. The copula as the source of the eventuality argument

The assumption that the eventuality argument is introduced by the copula is advocated, for example, by Bierwisch (1988), Kamp and Reyle (1993), and Rothstein (1999). According to this view, English *be*, German *sein* etc. are semantically poor full verbs. They provide a verbal shell that is filled by the lexical content of the predicate. As Rothstein (1999:363) argues, *be* “[l]ike any verb, [...] introduces a Davidsonian eventuality argument, but unlike lexical verbs, it does not express any property of that argument.” This approach predicts, then, that combinations of copula and predicate behave like regular eventuality expressions; cf. Maienborn (2003a) for a more detailed discussion of Rothstein’s account especially.

2.2. The predicate as the source of the eventuality argument

The alternative view, that the eventuality argument is introduced by the predicate, has been adopted and further developed by Kratzer and others against the background of the ongoing stage-level/individual-level debate. According to Kratzer’s original (1995) proposal, only stage-level predicates (SLPs) have an additional eventuality argument, while individual-level predicates (ILPs) lack such an argument.² Thus, adopting a Parsons-style notation, we would assign a copula sentence with a SLP, like *tired* in (1a), a semantic representation like (1b), whereas an ILP like *blond* in (2a) would yield (2b). Under this assumption only SLPs pattern with eventuality expressions like the state verb *sleep* in (3).

- (1) a. Carol was tired.
b. $\exists e$ [tired (e) & theme (e, carol)]
- (2) a. Carol was blond.
b. blond (carol)
- (3) a. Carol was sleeping.
b. $\exists e$ [sleep (e) & theme (e, carol)]

Most advocates of the stage-level/individual-level distinction now agree that SLPs and ILPs alike have an extra eventuality argument; and different ways of accounting for their differences are currently being considered. For example, Chierchia (1995) and McNally (1998) have suggested that SLPs and ILPs refer to different types of eventualities (viz. location dependent vs. location independent eventualities); while authors like Ramchand (1996) and Fernald (2000) have considered the possibility that SLPs are equipped (either

² The distinction between stage-level predicates, which express temporary/accidental properties, and individual-level predicates, which express (more or less) permanent/inherent properties, goes back to Milsark (1974, 1977) and Carlson (1977). Following Kratzer (1995) and Diesing (1992), most current treatments of the stage-level/individual-level contrast take it to be a grammatical distinction that reflects a (still not fully understood) conceptual opposition; cf. Maienborn (2003a) for a critical evaluation. An overview of the linguistic phenomena that have been associated with the stage-level/individual-level distinction can be found in Higginbotham and Ramchand (1997), Fernald (2000), and Jäger (2001).

structurally or lexically) with yet another eventuality argument besides the “regular” one shared by all predicates.

The brief remarks just given might suffice to illustrate how basic the notion of events has become for an analysis of predicates in current research. Moreover, despite the significant differences that exist between the approaches discussed so far, what all of them have in common is the prediction they make that copula-predicate combinations behave like other verbs with respect to Davidsonian eventualities. The grammar does not distinguish, then, between the expression of a property holding of an individual and the expression of an eventuality and its participants. If a grammatically significant distinction is drawn at all, this rests on the difference between temporary and permanent properties.

2.3 Eventualities: ontological properties and linguistic diagnostics

In order to examine whether the predictions of these event-based approaches are correct, let us briefly review the basic tenets of the Davidsonian paradigm. Crucially, events, on this view, are conceived of as spatiotemporal entities. Moreover, according to many authors (e.g. Carlson 1998, Eckardt 1998, Asher 2000 Maienborn 2003a), events necessarily involve participants serving some function. Although there is still no commonly accepted way to turn these ontological requirements into exact identity criteria for events, and there may never be one,³ I will adopt (4) as a working definition for subsequent discussion.

- (4) *Working definition of eventualities:*
Eventualities are spatiotemporal entities with functionally integrated participants.

Several properties, as given in (5), follow from this definition:

- (5) *Ontological properties of eventualities:*
- a. Eventualities are perceptible.
 - b. Eventualities can be located in space and time.
 - c. Eventualities can vary in the way they take place.

These ontological properties can, in turn, be used to derive a set of linguistic eventuality diagnostics:

- (6) *Linguistic diagnostics for eventualities:*
- a. Eventuality expressions can serve as infinitival complements of perception verbs; cf. Higginbotham (1983).
 - b. Eventuality expressions combine with locative and temporal modifiers.
 - c. Eventuality expressions combine with manner adverbials, instrumentals, comitatives, etc.

³ In their recent state-of-the-art article on the ontological nature of events, Pianesi and Varzi (2000:12) conclude: “the idea that events are spatiotemporal particulars whose identity criteria are moderately thin [...] has found many advocates both in the philosophical and in the linguistic literature. [...] But they all share with Davidson’s the hope for a ‘middle ground’ account of the number of particular events that may simultaneously occur in the same place.”

This, in a nutshell, is the Davidsonian view of events shared (explicitly or implicitly) by current event-based approaches. It is worth emphasizing that there is unanimity with regard to the validity of the linguistic diagnostics given in (6).⁴ Thus, (4)-(6) remind us (in the words of Raposo and Uriagereka 1995) “what it means for an expression to have a Davidsonian argument”.

3. Evidence against event-based accounts of copula sentences

The diagnostics in (6) provide a way to test the predictions of event-based accounts of copula sentences. In what follows, these eventuality tests will be applied to the German copula *sein*; cf. Maienborn (2003a, 2003b) for a discussion of the Spanish copula forms *ser* and *estar*.

3.1. Infinitival complements of perception verbs

The sentences in (7) show that copula constructions do not show up as infinitival complements of perception verbs. SLPs and ILPs do not differ in this respect; cf. (7a/b) and (7c). This has already been discussed by Carlson (1977:125f).

- (7) a. * Ich sah Carol müde sein. *copula + SLP*
I saw Carol tired be.
b. * Ich hörte das Radio laut sein. *copula + SLP*
I heard the radio loud be.
c. * Ich sah Carol blond/intelligent/Französin sein. *copula + ILP*
I saw Carol blond/intelligent/French be.

If we compare copula constructions with full verbs, we observe that there is a class of verbs – what Lakoff (1966) calls “statives” – that display exactly the same behavior, as shown in (8).

- (8) a. * Ich sah die Tomaten 1 Kg wiegen. *statives*
I saw the tomatoes 1 kg weigh.
b. * Ich hörte Carol die Antwort wissen.
I heard Carol the answer know.

⁴ Evidence that ordinary eventuality expressions (i.e. events proper and processes) indeed conform to the diagnostics given in (6) can be found in any work on event semantics. I will therefore not repeat this evidence here. However, I will, for sake of comparison, take into account the murky class of state expressions when discussing the behavior of copula sentences. Most relevant here is that states differ from processes in their subinterval properties: while processes have a lower bound for the size of subintervals that are of the same type, states have no such lower bound, i.e., states also hold at atomic times (e.g. Dowty 1979, Krifka 1989). Notice that under this criterion verbs like *sleep* and *wait*, which are sometimes classified as process verbs, denote states.

Yet, there is another class of verbs – let us call them “state verbs” for now – that can serve as infinitival complements of perception verbs. Included in this class are locative verbs like *sit*, *stand*, and *lie* as well as verbs like *sleep* and *wait*. These are illustrated in (9).⁵

- (9) a. Ich sah Carol am Fenster stehen. *state verbs*
 I saw Carol at.the window stand.
 b. Ich sah Carol warten/schlafen.
 I saw Carol wait /sleep.

The differences between (7)-(8) and (9) are clearly not a matter of interpretability and thus most likely have a grammatical source. Consider the minimal pair in (10). Both sentences could describe one and the same scenario. Yet, while (10a) is perfectly fine, (10b) is plainly unacceptable.

- (10) a. Ich sah das Buch auf dem Tisch liegen.
 I saw the book on the table lie.
 b. *Ich sah das Buch auf dem Tisch sein.
 I saw the book on the table be.

In sum, copula sentences fail to pass our first eventuality test and in this respect pattern with stative verbs.

3.2. Combination with locative modifiers

What about the occurrence of copula constructions with locative modifiers?⁶ Sentences like those in (11) are generally understood to provide strong evidence that at least SLPs have an underlying eventuality argument, which may serve as a target for a locative modifier (e.g. Kratzer 1995, Chierchia 1995, Fernald 2000).

- (11) a. Carol war im Auto müde/hungrig.
 Carol was in.the car tired /hungry.
 b.?? Carol war im Auto blond/intelligent/eine kluge Linguistin.
 Carol was in.the car blond/intelligent /a smart linguist.

Data like these lead Fernald (2000:24) to conclude: “It is clear that SLPs differ from ILPs in the ability to be located in space and time”.

However, there are good reasons to be skeptical of this claim. I have argued in (Maienborn 2001) that there are three types of locative modifiers that can be distin-

⁵ The observation that stative verbs do not show up as infinitival complements of perception verbs has also been made by Katz (2000). Katz does not take into account the behavior of state verbs illustrated in (9), though. This leads him to draw the conclusion – which to my mind is incorrect – that the relevant difference can be traced to the difference between states and events. As I will argue in the text, an adequate analysis of both eventive and stative expressions requires us to recognize that the Davidsonian category of eventualities includes static eventualities besides events and processes.

⁶ The occurrence of copula constructions with temporal modifiers will be discussed in sec. 4.1.

Against a Davidsonian Analysis of Copula Sentences

guished on syntactic as well as semantic grounds. These three types, which I describe as “frame-setting”, “event-external”, and “event-internal”, are indicated in (12).

- (12) weil in den Anden Schafe auf dem Marktplatz an den Ohren markiert werden
because in the Andes sheep on the market place at the ears marked are
- ↑ ↑ ↑
frame-setting *event-external* *event-internal*

While event-external and event-internal modifiers have a base adjunction site inside the VP, frame-setting modifiers are base generated outside it, within the verb’s functional shell. Moreover, unlike VP-internal modifiers, frame-setting modifiers do not relate to an underlying eventuality argument but provide a semantically underspecified domain restriction for the overall proposition; see Maienborn (2001) for syntactic and semantic details. Given their semantic indeterminacy, frame-setting modifiers may be interpreted in several ways. Take, for example, the sentence in (13), which has at least three readings, as paraphrased in (13a-c). (The sentence adverb *leider* is used to indicate the VP boundary; cf. Diesing 1992, Frey 2000.)

- (13) weil Diego Armando Maradona in Italien (leider) verheiratet war.
because Diego Armando Maradona in Italy (unfortunately) married was.
- a. When he was in Italy, Maradona was married. *temporal reading*
b. According to the laws in Italy, Maradona was married.
c. According to the belief of the people in Italy, Maradona was married.

Most importantly for our present concerns, frame-setting modifiers may be interpreted as restricting the *topic time* of a sentence (cf. Klein 1994), thus yielding a temporal reading, as illustrated in (13a). That is, temporally interpreted frame-setting modifiers restrict the time for which the speaker makes a claim; they do *not* locate the verb’s eventuality argument. Hence, they should not be confused with event-external modifiers.⁷

The examples given in (11) might now be seen in a different light. The locatives in (11) do not belong to the class of event-related modifiers but are frame-setting modifiers. More specifically, the observed difference between (11a) and (11b) involves the acceptability of these sentences under a temporal reading of the locative frame. That is, what the data in (11) really show is this: among the potential readings of frame-setting modifiers

⁷ Notice that a sentence such as (i), with a frame-setting locative ‘in Italy’ and an event-external locative ‘in France’, is not contradictory but may receive the interpretation ‘during his stay in Italy, Maradona used to buy his suits in France’. In (ii) the absence of conflicting information might invite the inference that the buying events took place in Italy, but this kind of inference relies on world knowledge and may easily be overridden, i.e., such inferences are not legitimated by the sentence’s logical structure.

- (i) In Italien kaufte Maradona seine Anzüge in Frankreich.
In Italy bought Maradona his suits in France.
- (ii) In Italien kaufte Maradona seine Anzüge mit Carol.
In Italy bought Maradona his suits with Carol.

there appears to be one reading that excludes ILPs as main predicates.⁸ However, these and similar data do *not* present any evidence for the presence or absence of an underlying event argument.

Frame-setting modifiers are not event-related. Therefore, they cannot be used in eventuality diagnostics. If we want to check for underlying event arguments we have to make sure that we are testing for real event-related, i.e. VP-internal, locative modifiers. Modifiers of this type are given in (14). (The temporal adverbials prevent the locatives from being “rescued” by a temporal frame-setter analysis.)

- (14) a. * Das Kleid ist auf der Wäscheleine nass. *SLP*
 The dress is on the clothesline wet.
 b. * Paul war (zu dieser Zeit) unter der Straßenlaterne betrunken.
 Paul was (at this time) under the street lamp drunk.
 c. * Der Sekt ist (immer noch) im Wohnzimmer warm.
 The champagne is (still) in.the living room warm.
 d. * Carol ist (gerade) im Auto müde.
 Carol is (at the moment) in.the car tired.
 e. * Carol war (die ganze Zeit) vor dem Spiegel blond/eitel/intelligent. *ILP*
 Carol was (the whole time) in-front-of the mirror blond/vain/intelligent.

If either the copula or the predicate introduced an eventuality argument, we would expect a locative modifier expressing the location of the eventuality to be possible. That is, a sentence like (14a) should be able to indicate that there is a state of the dress being wet and that this state is located on the clothesline. Yet there is no such interpretation for (14a). Even worse, all of the sentences in (14) are unacceptable regardless of whether they contain SLPs (14a-d) or ILPs (14e). Again, we see that copula sentences pattern with statives (15) and not with state verbs (16).

- (15) a. * Die Tomaten wiegen neben den Paprikas 1 Kg. *statives*
 The tomatoes weigh besides the paprikas 1 kg.
 b. * Carol weiß (gerade) an der Tafel die Antwort.
 Carol knows (at the moment) at the blackboard the answer.

⁸ Apparently, a temporal reading of the locative frame forces us to interpret the main predicate as holding only temporarily. In (Maienborn 2003a), I propose a pragmatic explanation for this *temporariness effect* in terms of Blutner’s (2000) OT version of the Gricean maxims.

If the main predicate resists this move, as we find with ILPs, a frame-setting locative may still be interpreted along the lines of (13b-c), which gives us the preferred readings for (i) and (ii) below. That is, the grammar does not prohibit ILPs from combining with frame-setting modifiers; cf. Maienborn (2001).

- (i) In Deutschland ist Juhnke berühmt. ‘Among the people in Germany, Juhnke is famous.’
 In Germany is Juhnke famous.
 (ii) In Deutschland ist Juhnke weltberühmt. ‘According to the belief of the people in Germany,
 In Germany is Juhnke world famous. Juhnke is world famous.’

Against a Davidsonian Analysis of Copula Sentences

- (16) a. Paul schläft (gerade) im Auto. *state verbs*
Paul sleeps (at the moment) in.the car.
b. Carol steht am Fenster.
Carol stands at.the window.

Summing up, there is no grammatical difference between SLPs and ILPs with respect to locative modifiers. Both combine with frame-setting locatives and both exclude event-related locatives. Despite what has commonly been claimed (cf. the quotation from Fernald 2000), SLPs and ILPs do *not* differ in their (in-)ability to be located in space.

3.3. Combination with manner adverbials and the like

The same picture emerges with manner modification. Copula expressions and statives do not combine with manner adverbials, comitatives and the like, whereas state verbs do, as (17)-(19) show. (See also (Katz 2000, 2003) for the inability of manner adverbs to occur with stative verbs.)

- (17) a. * Carol war unruhig durstig.
Carol was restlessly thirsty.
b. * Paul war friedlich/mit seinem Teddy/ohne Schnuller müde.
Paul was calmly /with his teddy/ without dummy tired.
c. * Paul war reglos im Zimmer.
Paul was motionless in.the room.
- (18) a. * Maria ähnelt mit ihrer Tochter Romy Schneider. *statives*
Maria resembles with her daughter Romy Schneider.
b. * Paul besitzt sparsam/spendabel viel Geld.
Paul owns thriftily /generously much money.
- (19) a. Paul schläft friedlich/mit seinem Teddy/ohne Schnuller. *state verbs*
Paul sleeps calmly /with his teddy/without dummy.
b. Carol saß reglos /kerzengerade am Tisch.
Carol sat motionless/straight as a die at.the table.

Further evidence for this contrast, and for the existence of underlying eventuality arguments, is given in (20). Sentences like (20a) provide evidence for such arguments, since it is not Carol but the state of Carol standing on the ladder that is steady and the state of her holding the box that is unsteady (e.g. Eckardt 1998). It would make perfect sense to interpret (20b) in the same vein. Yet, (20b) is clearly unacceptable.

- (20) a. Carol stand sicher auf der Leiter und hielt zur gleichen Zeit unsicher
Carol stood steadily on the ladder and held at.the same time unsteadily
die Kiste.
the box.
b. * Carol war sicher Alpinistin und unsicher Pianistin.
Carol was steadily alpinist and unsteadily pianist.

Sentences like (21) might, at first sight, be taken to provide counter-evidence to my claim that copula constructions do not combine with manner adverbials.

- (21) a. Carol war schnell in der Stadt.
Carol was quickly in the town.
b. Paul war mit Begeisterung Opa.
Paul was with enthusiasm grandpa.
c. Das Fenster war weit offen.
The window was widely open.

Yet, closer inspection reveals that they all involve some kind of non-compositional reinterpretation; cf. their ill-formed variants in (22).

- (22) a. * Carol war langsam in der Stadt.
Carol was slowly in the town.
b.?? Paul war mit Begeisterung Verwandter (von Grit).
Paul was with enthusiasm relative (of Grit).
c.?? Die Höhle war weit offen.
The cave was widely open.

Sentence (21a), for example, is subject to an ingressive coercion; *quickly* does not modify a state of Carol being in the city but an event of her going to the city. Similarly, the adverbial *with enthusiasm* triggers an agentive coercion in (21b). What Paul is enthusiastic about are the activities associated with being a grandpa. No such activities come into mind in the case of *being a relative (of Grit)*. This is the reason why (22b) is odd. Finally, despite first appearances, there is likewise no straightforward integration for the adverb *widely* in (21c), since the variant (22c) should otherwise be fine. Roughly speaking, *widely* modifies the resultant object of an opening event. Caves, being natural openings, do not lend themselves to such a reinterpretation; cf. Geuder (2000), Maienborn (2003a) for details.

We may conclude that sentences such as (21)/(22) are based on (more or less plausible) non-compositional reinterpretations, which are triggered by a sortal conflict between the modifier and the copula construction. Thus, sentences like these, though they seem to counterexemplify the claim that copula constructions do not combine regularly with manner adverbials, actually turn out to support this claim.

3.4. A new eventuality diagnostic: *ein bisschen* ('a little bit')

In this section, I will suggest a new eventuality diagnostic based on the modifier *ein bisschen* 'a little bit'. In combination with a process verb like *sweat*, as given in (24), *ein bisschen* displays two readings. As a degree modifier, it indicates that the amount of sweat was small. As an eventive modifier, it indicates that the run-time of the process was short. (The eventive reading applies only to homogeneous eventualities.)

- (23) Carol hat gestern ein bisschen geschwitzt. *degree and eventive reading*
Carol has yesterday a little bit sweated.

Against a Davidsonian Analysis of Copula Sentences

When combining with state verbs, *ein bisschen* always supports the eventive reading, as shown in (24). Whether or not there is also an additional degree reading depends on the verb meaning.

- (24) a. Carol hat ein bisschen geschlafen. *eventive reading*
Carol has a little bit slept.
b. Paul hat ein bisschen im Garten gesessen. *eventive reading*
Paul has a little bit in.the garden sat.
c. Das Fenster hat ein bisschen offen gestanden. *degree and eventive reading*
The window has a little bit open stood.

Strikingly, copula sentences and statives like those in (25)-(26) lack the eventive reading of *ein bisschen* and display only the degree reading:

- (25) a. Carol war ein bisschen müde/wütend/hungrig. *only degree reading*
Carol was a little bit tired /angry/ hungry.
b. * Die Ampel war ein bisschen gelb.
The traffic light was a little bit yellow.
c. * Carol trug die Kiste selbst, denn sie war erst ein bisschen schwanger.
Carol carried the box herself, because she was only a little bit pregnant.
d. Die Telekom-Aktie war ein bisschen billig. *only degree reading*
The Telekom share was a little bit cheap.
- (26) a. * Nach ihrer 5. Heirat hieß Liz ein bisschen Burton.
After her 5th marriage was-named Liz a little bit Burton.
b. * (Kaufen Sie jetzt!) Diese Aktie kostet nur ein bisschen so wenig.
(Buy now!) This share costs only a little bit so little.
c. Carol ähnelte ein bisschen ihrer Großmutter. *only degree reading*
Carol resembled a little bit her grandmother.

Notice that the eventive reading of *ein bisschen* would definitely make sense in these cases. If copula constructions or statives did introduce an eventuality argument, then we would expect the addition of *ein bisschen* to indicate that some state lasted for a short time. Yet the grammar does not appear to support such a reading.

The various eventuality tests described above thus produce the following convergent results:

1. Copula sentences fail all of these eventuality tests, just as statives do.
2. SLPs and ILPs exhibit no grammatically significant differences on these tests.
3. State verbs pass all of the eventuality tests.

Two conclusions can be drawn from these findings. First, there are no good reasons to assume that copula constructions (and statives) introduce a Davidsonian argument, regardless of whether they are classified as SLPs or ILPs. Thus, we definitely *are* “in a

position to deny an event-position to (copula plus) any predicate” (contra, i.a., Higginbotham and Ramchand 1997).

Secondly, the borderline drawn by the eventuality diagnostics does not coincide with a difference between events and states (contra Katz 2000, 2003). State verbs qualify as true eventuality expressions, denoting static Davidsonian eventualities. In the remaining part of this paper, I will call these entities “Davidsonian states” or “D-states”.

If we take the Davidsonian notion of eventualities seriously – and the progress achieved by event semantics provides good reasons to do so – we have little choice but to reject event-based approaches to copula sentences. Event arguments apparently are not as freely available as currently assumed within the Davidsonian paradigm. This concludes the destructive part of the paper.

4. An alternative account of copula sentences

4.1. Evidence for an underlying argument

If copula sentences do not introduce a Davidsonian eventuality argument, this raises two obvious possibilities: that they do not introduce any referential argument at all; and that they just refer to a different kind of entity. In this section, I will present some linguistic evidence in support of the latter possibility.

First of all, copula constructions clearly combine with all kinds of temporal modifiers, as (27) shows. If we want to give (standard) temporal adverbials a straightforward analysis as intersective modifiers, in the spirit of Davidson, then the combination of copula plus predicate should at least contribute a temporal argument. This might then serve as a target for temporal modification.

- (27) a. Carol war gestern /immer/zweimal/tagelang müde.
Carol was yesterday/always/twice /for days tired.
b. Die 3 war gestern /immer/zweimal/jahrelang Pauls Glückszahl.
The 3 was yesterday/always/twice /for years Paul’s lucky number.

Secondly, data such as (28) indicate that copula constructions are subject to a specific kind of anaphoric reference. In (28a), for example, the anaphoric pronoun *das* refers back to some “state” of Carol being angry. Notice that *das* cannot be analyzed as a fact anaphor here, given that facts are atemporal (e.g., Asher 1993, 2000).

- (28) a. Carol ist wütend. Das wird bald vorbei sein.
Carol is angry. This will soon over be.
b. Der Schlüssel war weg und das seit dem Wochenende.
The key was away and this since the weekend.

This suggests that copula plus predicate indeed introduce an underlying argument that can be located in time and allows for anaphoric reference. A further piece of evidence comes from the German anaphoric expression *dabei* (literally: “there-at”) illustrated in (29), which adds some accompanying circumstance to its antecedent.

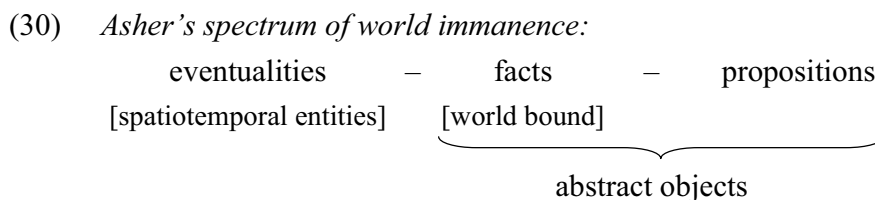
- (29) a. Es war kalt und dabei regnerisch.
 It was cold and there-at rainy.
- b. Carol war krank und lief dabei ohne Schal herum.
 Carol was ill and walked there-at without scarf about.
- c. Die Zwei ist eine Primzahl und dabei gerade.
 The two is a prime number and there-at even.

Sentence (29b), for example, indicates that the “state” of Carol being ill is accompanied by (possibly iterated) events of Carol walking about without a scarf. Notice that the antecedent of *dabei* may also be an ILP like ‘being a prime number’ as in (29c). In (Maienborn 2003a), I argue that *dabei* does not express mere temporal overlap but relates to the substance of its antecedent. This calls for a reification of the denotatum of copula-predicate combinations. In what follows, I will call the entities denoted by copula constructions (and statives) “Kimian states” or “K-states”.

4.2. On the nature of Kimian states

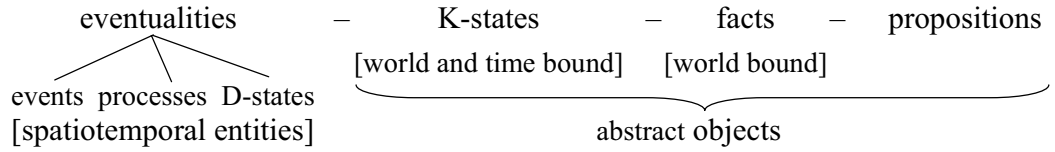
In the philosophical discussion initiated by Davidson’s (1967) “invention” of events, Kim (1969, 1976) advocated an alternative view, according to which events should be understood as temporally bound property exemplifications. While there are good reasons to reject Kim’s proposal as a substitute for the Davidsonian approach summarized in (4)-(6) (cf., e.g., Engelberg 2000, Maienborn 2003a), Kim’s alternative becomes more attractive if it is taken as description for the entity referred to by copula expressions and statives.

More specifically, my copula analysis will combine Kim’s approach with Asher’s (1993, 2000) conception of abstract objects as mentally constructed entities. According to Asher, abstract objects are introduced for efficient natural language processing and other cognitive operations but do not exist independently of them. Roughly speaking, abstract objects only exist because we talk and think about them. Asher (1993:57f) assumes furthermore that there is a *spectrum of world immanence* that spans real and abstract objects. At one pole we find eventualities, which are real things in the world. At the other pole we have propositions, which are entirely abstract objects. Facts have a position somewhere in between, as shown in (30): they are abstract objects but they are bound to certain worlds.



In view of our preliminary assumptions about the referents of copula expressions, let us augment this spectrum by introducing K-states as a further type of abstract object between eventualities and facts. K-states are bound to worlds and times, as indicated in (31).

(31) *Locating K-states:*



Against this background, K-states can be characterized as follows:

(32) *Working definition of K-states:*

K-states are abstract objects for the exemplification of a property P at a holder x and a time t.

The tentative definition given in (32) is just a first step towards clarifying the nature of the entity referred to by copula constructions and statives. Even so, several properties of K-states may be derived from it, as shown in (33):

(33) *Ontological properties of K-states:*

- a. K-states, being abstract objects, are not accessible to direct perception.
- b. K-states, being abstract objects, are accessible to (higher) cognitive operations.
- c. K-states can be located in time.

(34) gives the corresponding linguistic diagnostics.

(34) *Linguistic diagnostics for K-states:*

- a. K-state expressions cannot serve as infinitival complements of perception verbs.
- b. K-state expressions are accessible for anaphoric reference.
- c. K-state expressions combine with temporal modifiers.

The outline of K-states given in (32)-(34) parallels the characterization of eventualities in (4)-(6). Taken together, they account for the ways in which the behavior of copula constructions (and statives) deviates from that of eventive expressions.

4.3. A K-state-based account of copula sentences in DRT

In this section, I will sketch a K-state-based account of copula sentences within the framework of DRT (Kamp 1981, Kamp and Reyle 1993).⁹ The lexical entry for English *be*, German *sein* etc. is given in (35):

(35) *be/sein/...*: $\lambda P \lambda x \lambda z [z \approx [P(x)]]$ (z ranges over K-states)

⁹ Cf. Asher (1993) for the compositional DRT variant with λ -abstraction employed here. I use a flat notation for DRSs: discourse referents are separated from DRS conditions by “|”.

Against a Davidsonian Analysis of Copula Sentences

The copula introduces a referential argument z of type K-state which is characterized by the predicate P applying to the individual x .¹⁰ The compositional derivation of a copula construction is illustrated in (36). In (37) the corresponding composition of a D-state verb is given for comparison.

- (36) a. Carol ist müde. ('Carol is tired')
 b. Carol: $[v \mid \text{carol}(v)]$
 c. müde: $\lambda y [\text{tired}(y)]$
 d. [müde sei-]: $\lambda x \lambda z [z \approx [\text{tired}(x)]]$
 e. [_{VP} Carol müde sei-]: $\lambda z [v \mid z \approx [\text{tired}(v)], \text{carol}(v)]$
 f. Infl: $\lambda P [s \mid P(s)]$ (s ranges over eventualities and K-states)
 g. [_{IP} Carol ist müde]: $[z, v \mid z \approx [\text{tired}(v)], \text{carol}(v)]$
- (37) a. Carol schläft. ('Carol is sleeping')
 b. schlafen: $\lambda x \lambda e [\text{sleep}(e), \text{theme}(e, x)]$ (e ranges over eventualities)
 c. [_{VP} Carol schlaf-]: $\lambda e [v \mid \text{sleep}(e), \text{theme}(e, v), \text{carol}(v)]$
 d. [_{IP} Carol schläft]: $[e, v \mid \text{sleep}(e), \text{theme}(e, v), \text{carol}(v)]$

The difference between K-state and D-state expressions reduces to a sortal contrast. No further argument-structural or syntactic differences are required (or expected). The sortal difference can be exploited in the course of building up the compositional meaning. That is, while an eventuality argument is a suitable target for locative modifiers etc., K-state arguments won't tolerate them. The difference disappears as soon as the referential argument is existentially bound by Infl. Thus, the analysis predicts that the difference between stative and eventive expressions is basically confined to the VP. No further contrasts are expected at higher functional levels.

5. Some implications for Davidsonian eventualities

By way of conclusion I want to make two additional remarks, which suggest that K-states not only fare better for an analysis of copula sentences but may also simplify our assump-

¹⁰ Asher (1993:145f) defines " \approx " as relating a discourse referent for an abstract object (i.e. facts, propositions etc.) to a DRS that characterizes this discourse referent. In order to add K-states, the syntactic well-formedness conditions for DRSs (Asher 1993:95f) must be augmented by the condition in (i); and the conditions on DRS embedding (Asher 1993:97) could be augmented by (ii). There might be alternative solutions but I do not want to discuss these issues here.

- (i) *Syntactic well-formedness condition for DRSs:*
 If z is a discourse referent of type K-state and X is a DRS, then $z \approx X$ is a DRS condition.
- (ii) *DRS embedding:*
 If ψ is a DRS condition of the form $z \approx X$, then ψ is satisfied in a model M wrt w, t and an embedding function f , iff f embeds X in M relative to w, t with $t = \tau(z)$.

tions about Davidsonian eventualities. These remarks concern closure conditions and the latent infinite regress of eventualities.

5.1. Closure conditions

On the received view, there is a split within the category of eventualities with respect to closure conditions: states but not events are closed under complementation (e.g. Herweg 1991, Asher (1993, 2000)). Our distinction between K-states and D-states calls for a more careful inspection of the relevant data. In fact, it turns out that only K-states are closed under negation, as (38) indicates. The denotatum of *Carol was in the Studio* and its negation are both K-states. As such they can be combined, for example, with temporal modifiers.¹¹

- (38) Carol war (nicht) im Studio, und zwar eine Stunde lang. *K-states*
 Carol was (not) in.the studio, “in fact” for one hour.

D-states, on the other hand, pattern with events and processes. (39) illustrates the behavior of events. The result of negating *The train arrived* does not express an event anymore. Thus, the addition of, for example, a locative modifier or a manner adverbial is excluded. Our category of D-states shows exactly the same behavior. Once we negate a D-state expression, locative modifiers or manner adverbials aren’t acceptable anymore, as (41) shows. (Ability to occur with temporal modifiers does not discriminate between K-states and D-states and therefore is not a reliable diagnostic for D-states.)

- (39) Der Zug ist (*nicht) angekommen, und zwar auf Gleis drei /pünktlich. *events*
 The train did (*not) arrive, “in fact” on platform three/on time.
- (40) Eva aß (*nicht) Pizza, und zwar gierig /im Garten /mit Renate. *processes*
 Eva ate (*not) pizza, “in fact” greedily /in.the garden /with Renate.
- (41) Paul wartete (*nicht) auf den Bus, und zwar dort /lässig /mit Carol. *D-states*
 Paul waited (*not) for the bus, “in fact” there /coolly /with Carol.

The discussion of (38)-(41) shows that once we disentangle D-states as a subtype of eventualities from K-states, the category of eventualities turns out to behave more uniformly than generally assumed. There is no split within the category of eventualities with respect to closure under complementation.

5.2. Latent infinite regress of eventualities

The second remark is related to a latent problem with the Davidsonian paradigm, which has so far received little attention. This concerns sentences like (42) and event-based semantic representations for them like (43); see section 2 above.

¹¹ German *und zwar* ‘in fact’ is a means of attaching VP-modifiers sentence-finally. This reduces the risk of confusing sentence negation with constituent negation.

Against a Davidsonian Analysis of Copula Sentences

(42) Carol is tired.

(43) $\exists e$ [tired (e) & theme (e, carol)]

(43) indicates that there is an eventuality of tiredness and Carol is its theme. That is, the fact that Carol has a certain property apparently suffices to introduce an eventuality e. But what prevents us from taking the fact that e has a certain property to introduce another eventuality? That is, why can't we replace (43) by (44) – or then go on even further, creating an infinite regress of eventualities?¹²

(44) $\exists ee'$ [be-tired (e') & theme (e', e) & theme (e, carol)]

A similar problem arises in the case of adverbial modification. It is not clear why a sentence like (45) should be given an analysis like (45a) instead of (45b).

(45) Carol was driving quickly.

a. $\exists e$ [drive (e) & agent (e, carol) & quick (e)]

b. $\exists ee'$ [drive (e) & agent (e, carol) & quick (e') & theme (e', e)]

This dilemma is acknowledged by Geuder (2000):

It is a puzzle of neo-Davidsonian semantics that predication of an individual can define a state, but the otherwise similar predication of an eventuality never does; still we have to accept it as a matter of fact.

(Geuder 2000:104)

In my view, this is not a matter of fact – an empirical issue – but a weakness of the theory caused by stretching the notion of events too far. What we are confronted with here is the price of assuming that predication is inherently event-related. Under the account developed here, simple predication does not suffice to define a D-state. So, there is no risk of running into an infinite regress of eventualities.¹³

To conclude, I hope to have shown that it is not only very useful to introduce events but – changing Davidson's slogan somewhat – there is also a lot of language we can make systematic sense of if we stop misusing events.

¹² To my knowledge, Bennett (1988:177) was the first to raise this criticism.

¹³ What about K-states? Could they become subject to infinite regress? That is, how do we exclude (i) as a semantic representation for (42)?

(i) $[z, z', v \mid z' \approx [z \approx [\text{tired}(v)]]], \text{carol}(v)]$

First, within the analysis proposed here there is no way to derive structures like (i) compositionally. K-states are not introduced by arbitrary predicates but originate as referential arguments of the copula. Given this, it would be attractive to have a more restrictive formal system that excludes representations like (i) as syntactically ill-formed right from the start. The DRS well-formedness condition given in fn. 10 allows K-states to be characterized by any DRS. But it would be simple (and legitimate) to impose further structural restrictions on admissible DRSs.

On the one hand, introducing K-states as a supplement to (rather than a substitute for) Davidsonian eventualities enables us to account for the linguistic behavior of copula constructions (in terms of anaphoric reference and occurrence with temporal modifiers) as well as for the differences between copula constructions and eventuality expressions (with respect to infinitival complements of perception verbs, occurrence with locative modifiers, manner adverbials, etc.).

On the other hand, taking some load off of eventualities allows us to stick to a well-motivated understanding of them as spatiotemporal entities and to simplify some of our assumptions about their logical properties.

References

- Asher, Nicholas. 1993. *Reference to Abstract Objects in Discourse*. Dordrecht: Kluwer.
- Asher, Nicholas. 2000. Events, Facts, Propositions, and Evolutive Anaphora. In *Speaking of Events*, eds. J. Higginbotham, F. Pianesi and A. Varzi, 123-150. New York, Oxford: Oxford University Press.
- Bach, Emmon. 1986. The Algebra of Events. *Linguistics and Philosophy* 9:5-16.
- Bennett, Jonathan. 1988. *Events and their Names*. Indianapolis, Cambridge, Mass.: Hackett.
- Bierwisch, Manfred. 1988. On the Grammar of Local Prepositions. In *Syntax, Semantik und Lexikon*, eds. M. Bierwisch, W. Motsch and I. Zimmermann, 1-65. Berlin: Akademie-Verlag.
- Blutner, Reinhard. 2000. Some Aspects of Optimality in Natural Language Interpretation. *Journal of Semantics* 17:189-216.
- Carlson, Gregory N. 1977. Reference to Kinds in English, University of California: Ph.D. Diss.
- Carlson, Gregory N. 1998. Thematic Roles and the Individuation of Events. In *Events and Grammar*, ed. S. Rothstein, 35-51. Dordrecht: Kluwer.
- Chierchia, Gennaro. 1995. Individual-Level Predicates as Inherent Generics. In *The Generic Book*, eds. G. N. Carlson and F. J. Pelletier, 176-223. Chicago, London: The University of Chicago Press.
- Davidson, Donald. 1967. The Logical Form of Action Sentences. In *The Logic of Decision and Action*, ed. N. Resher, 81-95. Pittsburgh: University of Pittsburgh Press.
- Davidson, Donald. 1980. The Logical Form of Action Sentences: Criticism, Comment, and Defence. In *Essays on Actions and Events*, ed. Donald Davidson, 105-148. Oxford: Clarendon Press.
- Diesing, Molly. 1992. *Indefinites*. Cambridge Mass.: The MIT Press.
- Dowty, David R. 1979. *Word Meaning and Montague Grammar*. Dordrecht: Reidel.
- Eckardt, Regine. 1998. *Adverbs, Events and Other Things. Issues in the Semantics of Manner Adverbs*. Tübingen: Niemeyer.
- Engelberg, Stefan. 2000. *Verben, Ereignisse und das Lexikon*. Tübingen: Niemeyer.
- Fernald, Theodore B. 2000. *Predicates and Temporal Arguments*. Oxford, New York: Oxford University Press.
- Frey, Werner. 2000. Über die syntaktische Position der Satztopiks im Deutschen. *ZAS Papers in Linguistics* 20:137-172.

Against a Davidsonian Analysis of Copula Sentences

- Geuder, Wilhelm. 2000. Oriented Adverbs. Issues in the Lexical Semantics of Event Adverbs, Universität Tübingen: Diss.
- Herweg, Michael. 1991. Perfective and Imperfective Aspect and the Theory of Events and States. *Linguistics* 29:969-1010.
- Higginbotham, James. 1983. The Logic of Perceptual Reports: An Extensional Alternative to Situation Semantics. *Journal of Philosophy* 80:100-127.
- Higginbotham, James. 1985. On Semantics. *Linguistic Inquiry* 16:547-593.
- Higginbotham, James. 2000. On Events in Linguistic Semantics. In *Speaking of Events*, eds. J. Higginbotham, F. Pianesi and A. Varzi, 49-79. New York, Oxford: Oxford University Press.
- Higginbotham, James, and Gillian Ramchand. 1997. The Stage-Level/Individual-Level Distinction and the Mapping Hypothesis. *Oxford University Working Papers in Linguistics, Philology & Phonetics* 2:53-83.
- Jäger, Gerhard. 2001. Topic-Comment Structure and the Contrast between Stage Level and Individual Level Predicates. *Journal of Semantics* 18:83-126.
- Kamp, Hans. 1981. A Theory of Truth and Semantic Representation. In *Formal Methods in the Study of Language*, eds. J. Groenendijk, T. Janssen and M. Stokhof, 277-322. Amsterdam: Mathematisch Centrum.
- Kamp, Hans, and Uwe Reyle. 1993. *From Discourse to Logic: Introduction to Model-theoretic Semantics of Natural Language, Formal Logic and Discourse Representation Theory*. Dordrecht: Kluwer.
- Katz, Graham. 2000. Anti Neo-Davidsonianism: Against a Davidsonian Semantics for State Sentences. In *Events as Grammatical Objects*, eds. C. Tenny and J. Pustejovsky, 393-416. Stanford, CA: CSLI Publications.
- Katz, Graham. 2003. Event arguments, adverb selection, and the Stative Adverb Gap. In *Modifying Adjuncts*, eds. E. Lang, C. Maienborn and C. Fabricius-Hansen, 455-474. Berlin: Mouton de Gruyter.
- Kim, Jaegwon. 1969. Events and their Descriptions: Some Considerations. In *Essays in Honor of Carl G. Hempel*, ed. N. Rescher et al, 198-215. Dordrecht: Reidel.
- Kim, Jaegwon. 1976. Events as Property Exemplifications. In *Action Theory: Proceedings of the Winnipeg Conference on Human Action*, eds. M. Brand and D. Walton, 159-177. Dordrecht: Reidel.
- Klein, Wolfgang. 1994. *Time in Language*. London, New York: Routledge.
- Kratzer, Angelika. 1995. Stage-Level and Individual-Level Predicates. In *The Generic Book*, eds. G. N. Carlson and F. J. Pelletier, 125-175. Chicago, London: The University of Chicago Press.
- Krifka, Manfred. 1989. Nominal Reference, Temporal Constitution and Quantification in Event Semantics. In *Semantics and Contextual Expression*, eds. R. Bartsch, J. van Benthem and P. van Emde Boas, 75-115. Dordrecht: Foris.
- Lakoff, George. 1966. Stative Adjectives and Verbs in English, 1-16. Cambridge, Mass.: Mathematical Linguistics and Automatic Translation. The National Science Foundation.
- Maienborn, Claudia. 2001. On the Position and Interpretation of Locative Modifiers. *Natural Language Semantics* 9:191-240.
- Maienborn, Claudia. 2003a. *Die logische Form von Kopula-Sätzen* (studia grammatica 56). Berlin: Akademie-Verlag.

Claudia Maienborn

- Maienborn, Claudia. 2003b. A discourse-based account of Spanish *ser/estar*. Ms. Berlin.
- McNally, Louise. 1998. Stativity and Theticity. In *Events and Grammar*, ed. S. Rothstein, 293-307. Dordrecht: Kluwer.
- Milsark, Gary L. 1974. Existential Sentences in English, MIT: Ph.D. Diss.
- Milsark, Gary L. 1977. Toward an Explanation of Certain Peculiarities of the Existential Construction in English. *Linguistic Analysis* 3:1-29.
- Parsons, Terence. 1990. *Events in the Semantics of English. A Study in Subatomic Semantics*. Cambridge Mass.: The MIT Press.
- Parsons, Terence. 2000. Underlying States and Time Travel. In *Speaking of Events*, eds. J. Higginbotham, F. Pianesi and A. Varzi, 81-93. Oxford, New York: Oxford University Press.
- Pianesi, Fabio, and Achille C. Varzi. 2000. Events and Event Talk: An Introduction. In *Speaking of Events*, eds. J. Higginbotham, F. Pianesi and A. Varzi, 3-47. Oxford, New York: Oxford University Press.
- Ramchand, Gillian C. 1996. Two Subject Positions in Scottish Gaelic: The Syntax-Semantics Interface. *Natural Language Semantics* 4:165-191.
- Raposo, Eduardo, and Juan Uriagereka. 1995. Two Types of Small Clauses (Toward a Syntax of Theme/Rheme Relations). In *Small Clauses*, eds. A. Cardinaletti and M.T. Guasti, 179-206. New York: Academic Press.
- Rothstein, Susan. 1999. Fine-grained Structure in the Eventuality Domain: The Semantics of Predicative Adjective Phrases and *Be*. *Natural Language Semantics* 7:347-420.

Department of German Language and Linguistics
Humboldt University Berlin
Schützenstr. 21, 10117 Berlin
Germany

c.maienborn@rz.hu-berlin.de