

On Being outside Time: States and Temporal Interpretation

States differ from events and processes (henceforth, ‘occurrences’) in temporal behavior in two well-known ways. First, present tense state sentences can refer to present time (1); present tense occurrence sentences only have a habitual reading (2-3):

- (1) Frodo is happy.
- (2) Bilbo drinks a cup of coffee (every morning).
- (3) Bilbo drinks coffee.

Second, in past tense narratives, states and occurrences yield different interpretations. The sentence sequences in (5-6) yield a *progression* reading (Occurrence N follows Occurrence M) while that in (5) yields an *overlap* reading (State N overlaps Occurrence M).

- (4) Frodo walked into the kitchen.^M Bilbo was asleep at the table.^N
- (5) Frodo walked into the kitchen.^M Bilbo sneezed violently.^N
- (6) Frodo walked into the kitchen.^M Bilbo laughed.^N

Several attempts have been made to account for the overlap reading of states. Typically, the theories assume an axiomatic distinction between states and non-states: states include their reference time while non-states are necessarily included in or follow their reference time (Dowty 1986, Kamp and Ryle 1993). The present time interpretation of states is frequently noted but rarely accounted for (other than by implication in interval-semantics based accounts). This behavior has led to an informal view of states as being timeless or ‘atemporal’ (Bach 1981). The question remains as to what precisely about states results in the atemporal behavior noted above.

In this paper, I argue that the temporal behavior of states is the consequence of the more basic property of homogeneity. By homogenous, we mean that all subparts of a thing are equivalent to the thing itself. For states, homogeneity is apparent in the sub-interval property. The state sentence “Bilbo was sad” is true for all sub-intervals of the time for which the state holds. In contrast, events are *antissubdivisible* (Bach 1981). Although processes are often grouped with states, they are not truly homogenous. With respect to the sub-interval property, limitations on sub-interval size have to be taken into account (Dowty 1979). In the following, I take homogeneity to be unique to states in the domain of eventualities.

A consequence of homogeneity is that a strict partial order (i.e., an irreflexive, asymmetric and transitive relation) cannot hold for states. On the other hand, our conception of time involves the binary relation ‘before’ which is a strict partial order. It follows that the internal structure of states is incompatible with temporal order. But what of a state as a whole? Surely, the state of being pregnant, for instance, is ordered with respect to the event of giving birth. I suggest that orderings to which states are subject are causal in nature, and though causal relations have temporal consequences (cf. Lascarides and Asher 1993), they are distinct from the temporal order based on the before relation. I posit that it is contradictory to allow that states, in general, can be homogenous and be subject to a total linear order (the time-line). As such, states cannot be constitutive of the time-line, i.e., they cannot be said to be located on the time-line. Rather, only eventualities with an internal ‘temporal’ order (i.e., occurrences) can constitute the time-line (on the assumption that there is no such thing as an independent temporal dimension). In more familiar terms, occurrences can be said to have locations on the time line, while states cannot.

If we adopt this view, the following predictions about tense and time adverbials, two phenomena directly related to time, follow. First, tense can semantically restrict occurrences but not states. Second, states cannot be ‘bounded’ by definite temporal adverbials (henceforth, ‘DTA’) marking duration (e.g., *from noon to 4 o’clock*), while processes are.

The usual interpretation of past tense is that the situation described holds only for times before NOW, the utterance/evaluation time. The sentences in (7-8) all get this interpretation:

- (7) Bilbo was irritable
- (8) a. Bilbo baked a cake.

b. Bilbo ran in the park.

However, the state sentence in (7) also gets an unbounded-in-the-past interpretation, i.e., (7) is consistent with the interpretation that the state continues into the present. Similarly, DTAs like *from 2 to 5 o'clock* are normally interpreted to mark the beginning and endpoints of situations:

(9) Bilbo worked in the garden from 2 to 5 o'clock

(10) Bilbo was irritable from 2 to 5 o'clock.

Both (9) and (10) describe situations that began at 2 o'clock and ended at 5 o'clock. Further, both (9) and (10) can also be followed by the sentences in (11) and (12), respectively:

(11) In fact, he worked in the garden all day.

(12) In fact, he was irritable all day.

This seems to suggest that the situations described by (9-10) need not be bounded by the DTA. However, (9) is not consistent with a state of affairs where Bilbo did not start working at 2 or stop at 5. It is irrelevant whether there were also other occasions of Bilbo working in the garden during the day so that (11) also is true. In contrast, (10) is perfectly compatible with the interpretation that Bilbo did not stop being irritable at 5.

I posit that, since states are not on the time-line, they cannot be operated on either by tense or by DTAs. The completely-in-the-past interpretation of (7) and the bounded interpretation of (10) are not the result of the state being located at a specific interval on the time-line but instead are scalar implicatures. For instance, since it is informative that Bilbo was irritable all day, my asserting (10) must mean that I believe that (12) is not true or that I know for certain that the time between 2 and 5 o'clock was the only time that Bilbo was irritable.

With the reasonable assumption that all sentences must be interpreted with respect to times, it is now possible to account for the behavior of states observed in (1) and (4). Note first, that tense is deictic, and, second, that deixis necessarily involves a relationship between two loci, one of which is the position of the observing/speaking consciousness. On the view of the time-line posited above, tense is fully interpretable only for temporally located entities, i.e., occurrences. With states, tense can only be interpreted pragmatically, as shown for DTAs above. Further, since states are not located on the time-line, there cannot be a *semantic* constraint on their extents. It is part of our world knowledge that states can be brought into existence or terminated by occurrences. However, barring explicit statement of such causal occurrences, states introduced in the discourse exist at all intervals of the discourse world. Hence it follows that a state sentence evaluates to true both with respect to the time of an occurrence introduced (by an event or process sentence either before or after the state sentence) into the discourse (giving the Overlap reading of (4)) and also with respect to the time of utterance, a necessary part of every discourse world (giving the present time reading of (1) and, incidentally, the unbounded-in-the past reading of (7)).

References:

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