Concepts from Event Semantics in Cognition

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Concepts of Events

Common sense intuition distinguishes between events and regular objects; events *happen*, after all, and objects don't. This distinction is deployed in linguistics, psychology and philosophy. Linguists say that sentences describe events, while nouns describe objects. Psychologists describe the principles of event perception, and philosophers debate the metaphysics of event identity. But how do these various discussions relate to each other?

Casati and Varzi (2008) emphasize the importance of delimiting 'common sense' understandings from theoretical usages; it could turn out that the representations posited to explain object or event perception share important common features, and that neither obviously resemble what is actually 'out there'. Worse, what determines whether a given portion of experience falls into a particular event category can seem intimately bound up with the language that we use to describe it (e.g. *chase* versus *flee*).

A prominent strand of theorizing in natural language semantics holds that the basic logic of sentences involves a hidden 'event variable', posited to explain the intuitive validity of a wide variety of productive inferences in natural language (e.g. from *A kicked B in the shin* to *A kicked B*; Davidson 1967). It has sometimes also been taken to burden the theorist with substantial ontological commitments. In contrast, some views suggest that understanding the 'event variable' is a fundamentally cognitive question (see Pietroski 2015).

This symposium aims to illuminate the psychological notion of 'event' from the perspective of event semantics, connecting posits in formal semantics to shared aspects of our perception and cognition. For the semanticist, such attempts encourage a different understanding of the entities that pop-ulate our models. For the psychologist, they suggest a rich arena in which to derive empirically-testable predictions about the mind. And, for the philosopher, they could provide new insight into why the common sense notion of 'event' has the structure that it does (Casati & Varzi 2008).

Two questions are broadly relevant here: what is the relationship between formal semantics and cognitive science? And, how can results in formal semantics be used to generate predictions about how the mind works? More specifically, what structure does natural language semantics imply for event perception and cognition? Investigating these questions will enhance interdisciplinary research on events from a lesser-explored perspective in cognitive science.

Intuitive iconicity for events and objects

J. Kuhn, P. Schlenker, C. Geraci, B. Strickland

Telic verbs refer to events bound in time (*decide*), while atelic verbs (*think*) refer to events that are not. Analogously, count nouns typically refer to objects bound in space (*coin*) while mass nouns typically refer to entities that are not (*rain*). Semantic theory (Jackendoff 1991, Bach 1986) draws formal parallels between the logical properties of two domains. Here, we ask whether the notion of boundedness (in space or time) is present in the fundamental cognitive representation of the objects the words denote. A first experiment showed unfamiliar Italian Sign Language signs to non-signers. Participants readily assigned telic and count meanings to signs containing "gestural stops" while they assigned atelic and mass meanings to signs lacking such stops. A second experiment asked if similar results may extend in spoken language. Here, written non-words either contained or lacked a phonological stop. "Stop" words were again more readily assigned telic and count meanings while non-stop words were more readily assigned atelic and mass meanings. Collectively, these results suggest that the telic/atelic and count/mass distinctions play

similar roles in an abstract iconic system (mapping meaning to symbols), thus suggesting that these categories share deep similarities in how their typical referents are represented.

Object : substance :: event : process

A. Wellwood, S. Hespos, L. Rips

Beginning with Bach (1986), semanticists have suggested that the objects/events and substances/processes picked out by nouns and verbs are strongly parallel. We investigate whether these parallels can be understood to reflect a shared representational format in cognition. We hypothesized that a criterion for counting is necessary for 'object' and 'event' representations, unlike 'substance' or 'process' representations (cf. Barner et al 2008). This criterion is strongly implied by plural (e.g. *some gorps*, for novel *gorp*) but not mass language (e.g. *some gorp*). We tested the salience of numerical differences between pairs of minimally different images and animations, designed with 'natural' spatial gaps (images) or temporal gaps (animations), suggesting countability, versus 'unnatural'. We tested preference for matching these stimuli with mass or count language (Expt.1), then compared similarity ratings between pairs presented without linguistic information (Expt.2), with 'matching' linguistic information (Expt.3), and 'mismatching' linguistic information (Expt.4). Our results support Bach's analogy in perception, and highlight the role of countability in object and event representation.

Countability in eventualities and beyond

E. M. Husband

Researchers interested in how our linguistic system structures ontological semantic domains have observed striking parallels between the domain of objects in their count/mass interpretation and the domain of events in their aspectual classification. These parallels have guided research to formalize an underlying property of countability that is shared between the domains of objects and events (e.g. Bach 1986). In this talk, I provide evidence that the parallels found between the domains of objects and events can be extended to the domains of degrees and states with considerations of scale structure on the one side and existential interpretation on the other. Such evidence suggests a role for countability in our linguistic system than is broader and deeper than typically considered. More speculatively, I observe that countability may extend beyond the linguistic system into other cognitive domains. The visual system, for instance, shows certain signature behaviors that distinguish between objects and visual substances. This suggests countability may be a core property reflecting the organization of our minds more broadly.

Thematic relations in different views of meaning

A. Williams

I discuss how different views of semantics affect our understanding of so-called event variables. After Davidson (1967),
the semantics of complex predicates has been used to support the view that subjects, objects, adverbs and verbs contribute separate predicates of the same variable, call it an E. The predicates that result from this analysis, such as 'Agent' and 'Patient', have forced either rejection of the analysis (Dowty 1991), or one of three accommodations. The choice depends on the background understanding of sentence meanings and their Es. Taking Es to range over events leads to a surprising metaphysics (Parsons 1990). Taking them to range over events-under-a-perspective leads to a surprising psychology (Schein 2002). The third, less familiar response has Es range over the structured thoughts that sentence-tokens express (Pietroski 2015). 'Agent' and 'Patient' then indicate, not properties satisfied by events(-as-we-view-them), but different positions in a relational thought. This avoids the other problems, but implies a very different view of the generalizations that initially motivate the analysis. I map this landscape to facilitate discussion among linguists and psychologists on the varying relevance of terms like 'Agent' and 'Patient' in our understanding of inference, event perception and language acquisition.

Acknowledgments

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