

## Structured-Ness and Contextual Retrieval Underlie Language Comprehension

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**Abstract :** While grammatical devices are essential to language processing, how comprehension utilizes cognitive mechanisms is less emphasized. This study addresses this issue by probing the complement coercion phenomenon: an entity-denoting complement following verbs like begin and finish receives an eventive interpretation. For example, (1) "The queen began the book" receives an agentive reading like (2) "The queen began [reading/writing/etc....] the book." Such sentences engender additional processing cost in real-time comprehension. The traditional account attributes this cost to an operation that coerces the entity-denoting complement to an event, assuming that these verbs require eventive complements. However, in closer examination, examples like "Chapter 1 began the book" undermine this assumption. An alternative, Structured Individual (SI) hypothesis, proposes that the complement following aspectual verbs (AspV; e.g. begin, finish) is conceptualized as a structured individual, construed as an axis along various dimensions (e.g. spatial, eventive, temporal, informational). The composition of an animate subject and an AspV such as (1) engenders an ambiguity between an agentive reading along the eventive dimension like (2), and a constitutive reading along the informational/spatial dimension like (3) "[The story of the queen] began the book," in which the subject is interpreted as a subpart of the complement denotation. Comprehenders need to resolve the ambiguity by searching contextual information, resulting in additional cost. To evaluate the SI hypothesis, a questionnaire was employed. Method: Target AspV sentences such as "Shakespeare began the volume." were preceded by one of the following types of context sentence: (A) Agentive-biasing, in which an event was mentioned (...writers often read...), (C) Constitutive-biasing, in which a constitutive meaning was hinted (Larry owns collections of Renaissance literature.), (N) Neutral context, which allowed both interpretations. Thirty-nine native speakers of English were asked to (i) rate each context-target sentence pair from a 1~5 scale (5=fully understandable), and (ii) choose possible interpretations for the target sentence given the context. The SI hypothesis predicts that comprehension is harder for the Neutral condition, as compared to the biasing conditions because no contextual information is provided to resolve an ambiguity. Also, comprehenders should obtain the specific interpretation corresponding to the context type. Results: (A) Agentive-biasing and (C) Constitutive-biasing were rated higher than (N) Neutral conditions ( $p < .001$ ), while all conditions were within the acceptable range ( $> 3.5$  on the 1~5 scale). This suggests that when lacking relevant contextual information, semantic ambiguity decreases comprehensibility. The interpretation task shows that the participants selected the biased agentive/constitutive reading for condition (A) and (C) respectively. For the Neutral condition, the agentive and constitutive readings were chosen equally often. Conclusion: These findings support the SI hypothesis: the meaning of AspV sentences is conceptualized as a parthood relation involving structured individuals. We argue that semantic representation makes reference to spatial structured-ness (abstracted axis). To obtain an appropriate interpretation, comprehenders utilize contextual information to enrich the conceptual representation of the sentence in question. This study connects semantic structure to human's conceptual structure, and provides a processing model that incorporates contextual retrieval.

**Keywords :** ambiguity resolution, contextual retrieval, spatial structured-ness, structured individual

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