Electrophysiological evidence of additional structure in intensional transitive constructions
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According to a widely accepted view, intensional verbs like ‘want’ and ‘need’ select for clausal complements denoting states of affairs or propositions (e.g., Quine 1956; Larson, 2002), though they naturally and frequently combine with direct object NPs as in ‘John wants a beer’. Recent psycholinguistic work (Delogu et al., 2010) has shown that intensional transitive constructions (ITs) result in longer reading times relative to control expressions (e.g., John drinks a beer), suggesting that interpretation of ITs requires complex compositional operations that interpolate additional structure to meet the selectional requirements of the verb (e.g., John wants [to have/drink a beer]). It is still an open question, however, whether such compositional operations are syntactically or semantically driven.

Some linguistic approaches (e.g., Larson et al., 1997) would attribute the complexity of ITs to the interpretation of a covert syntactic head, i.e., a silent V node (HAVE) in the syntactic structure of the sentence. Lexical semantic accounts (e.g., Pustejovsky, 1995), on the other hand, would attribute the processing cost to an independent semantic operation (called complement coercion) that shifts the semantic type of the NP object from an entity (<beer>) into an event or proposition (<drinking/having a beer>) that meets the selectional restrictions of the verb.

The present study used Event-Related Potentials (ERPs) to discriminate between these two alternative accounts of IT complexity. 20 native Italian speakers read 30 sentences in two conditions: Control Transitive (1a) and Intensional Transitive (1b).

The covert syntax account predicts that an ERP effect should be elicited already at the determiner (una), i.e., the earliest sentence position at which the two conditions differ in terms of the assumed underlying syntactic structure. In particular, the occurrence of a determiner is consistent with a direct-object complement as required by the verb in (1a), but inconsistent with a clausal/infinitival complement as required by the intensional verb in (1b). The complement coercion account, on the other hand, predicts that an ERP effect should be elicited at the noun (birra), i.e., the earliest sentence position at which the two conditions differ in terms of satisfaction of the semantic requirements of the verb. More specifically, the entity-type NP beer satisfies the selectional restrictions of the verb in the control condition but not in the intensional condition, where a proposition/event-denoting complement would be required (cf., for example, John wanted an exiting life/party).

The analyses revealed a broadly distributed negativity between 400-600 ms post onset of the determiner in the intensional transitive condition compared to the control transitive condition. The ERP modulation evoked by the noun did not differ across conditions.

In general, our result provides further evidence that intensional transitive constructions such as John wanted a beer are harder to process than control transitives such as John drank a beer. In addition, the time-course of the effect provides initial evidence in favor of the covert syntax hypothesis, according to which ITs are only apparently transitives. Our findings will be further discussed with reference both to ERP patterns associated with the processing of closed-class words and to recent ERP and MEG studies investigating other categories of linguistic expressions that are argued to require enriched compositional operations.

(1)

a. Giorgio bevve una birra dopo la passeggiata. (Control Transitive)  
   Giorgio drank a beer after the walk.

b. Giorgio voleva una birra dopo la passeggiata. (Intensional Transitive)  
   Giorgio wanted a beer after the walk.