

Explaining DPs vs. CPs without syntax

Overview: We argue that the role of syntax can be eliminated in explaining selection for DPs vs. CPs, with the verb *explain* as a case study. Building on Pietroski's (2000) claims, we provide novel evidence from, e.g., *special quantifiers* and embedded interrogatives. We ultimately argue for an elimination of the basic type-distinction between *individuals* and *events*, favouring instead a sortal distinction within D_e implemented via presuppositions. This enables a purely semantic account of Pietroski's observations with wider empirical coverage.

Explain and the DP/CP distinction: Pietroski (2000, p. 1) shows that the interpretation of a sentence with *explain* depends on the syntactic category of its complement.

- (1) a. Nora explained [_{CP} why Fido barked]. *explanandum reading*
- b. Nora explained [_{DP} the fact that Fido barked]. *explanandum reading*
- c. Nora explained [_{CP} that Fido barked]. *explanans reading*

In (1-a) and (1-b), the complement specifies the content of what is explained, whereas in (1-c), the complement specifies the content of the explanation. As Pietroski points out, the contrast between (1-b) and (1-c) is problematic on the view that facts are true propositions, meaning that *the fact that Fido barked* and *that Fido barked* should be inter-substitutable if the latter is true.

Pietroski's account: Pietroski captures the distinction by assigning (1-b) and (1-c) the Logical Forms in (2-a) and (2-b), in the framework of neo-Davidsonian event semantics.

- (2) a. $\llbracket (1-b) \rrbracket = \exists e[\text{AGENT}(e, \text{Nora}) \wedge \text{explaining}(e) \wedge \text{THEME}(e, \text{the fact that Fido barked})]$
- b. $\llbracket (1-c) \rrbracket = \exists e[\text{AGENT}(e, \text{Nora}) \wedge \text{explaining}(e) \wedge \text{CONTENT}(e, \text{that Fido barked})]$

Pietroski's solution is that the complements to *explain* fulfill different thematic roles in (1-b) and (1-c) (THEME vs. CONTENT). There are several aspects of Pietroski's discussion which are unsatisfactory.

Ambiguity: Positing (2-a) and (2-b) commits Pietroski to a view on which *explain* is ambiguous, but the two meanings are clearly systematically related. This phenomenon is not limited to *explain*, but also arises with other verbs such as *describe*.

- (3) a. John described [_{CP} that Mary was wearing a feather bower].
- b. #John described [_{DP} the fact that Mary was wearing a feather bower].
- c. John described [_{DP} Mary's attire].

In (3-a) the *that*-clause specifies the content of what is described. (3-b) is infelicitous since *facts* cannot be described, and therefore cannot fulfill the THEME role.

Compositionality: Pietroski does not consider how the two Logical Forms are composed, glossing over the fact that in both (1-b) and (1-c) the *that*-clause actually fulfills the CONTENT role – in (1-c) it specifies the content of the *explaining*, and in (1-b) it specifies the content of the *fact*. It is implausible that the CONTENT role is specified as part of the lexical semantics of the verb, but rather it seems that *that*-clauses are inherently content-providers.

Special quantifiers and c-selection: Most importantly, Pietroski implicitly assumes, and Kastner (2015) explicitly states, that DP complements always fulfill the THEME role, whereas CP complements always fulfill the CONTENT role. This cannot be correct however, based on evidence from Moltmann's (2013) class of "special quantifiers", which include *something*, *everything*, *nothing* and *several things*. These expressions may substitute in for clausal complements.

- (4) a. John {thinks|believes} [_{CP} that Mary is moving to Germany].
- b. John {thinks|believes} [_{DP} something].
- c. John {*thinks|believes} [_{DP} the rumour that Mary is moving to Germany].
- d. It is {thought|believed} [_{CP} that Mary is moving to Germany].
- e. It is {*thought|*believed} [_{DP} something].

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The standard assumption is that *believe* combines with DPs, whereas *think* does not. The majority of theories locate the explanation in the syntax proper (Grimshaw 1979, Pesetsky 1982). Special quantifiers undermine this approach: (4-b) is a counter-example. Special quantifiers cannot be CPs, since they cannot appear in all CP positions: they do not survive when the verb is passivised, as shown in (4-d) and (4-e). Furthermore, they appear in positions in which CPs are disallowed, such as the complement to P: *John hopes for something – namely that Mary will leave soon*. Now, consider what happens when *explain* takes a special quantifier as its complement.

(5) John explained $[_{DP} \text{something}]$ – namely, $\{[_{DP} \text{the fact that Fido barked}] [_{CP} \text{that Fido barked}]\}$

(5) shows that a special quantifier allows both the *explanandum* and *explanans* readings. The correct generalization is therefore that CPs receive *explanans* readings whereas DPs can receive either.

Embedded interrogatives: Pietroski takes (1-a) to illustrate the *explanandum* reading. Rather, (1-a) must be an instance of the *explanans* reading. The reasoning goes as follows: *explain* is a *responsive* predicate (Lahiri, 2002). Responsive predicates with interrogative complements express relations between the agent and an answer to the question. If (1-a) receives the *explanandum* reading, we predicate the Logical Form in (6-a). This would mean that *Nora provided an explanation for the explanation for why Fido barked*. Rather, the *answer* to the embedded question is interpreted as the *explanans*, as in (6-b). This is not predicted on the view that *explanandum* vs. *explanans* correlates with DP vs. CP.

- (6) a. $\exists e[\text{AGENT}(e, \text{Nora}) \wedge \text{explaining}(e) \wedge \text{THEME}(e, \text{ANS}(\text{why Fido barked}))]$
 b. $\exists e[\text{AGENT}(e, \text{Nora}) \wedge \text{explaining}(e) \wedge \text{CONTENT}(e, \text{ANS}(\text{why Fido barked}))]$

Analysis: Following Moulton (2015), we propose that *that*-clauses are of type $\langle e, t \rangle$ – they denote properties of entities with propositional content. Departing from Moulton, we implement sortal types as presuppositions. This captures the intuition that *that*-clauses are inherently content providers.

(7) $\llbracket \text{that Mary left} \rrbracket = \lambda x_e : \exists q_{st} [\text{CONT}(x, q) = 1]. \text{CONT}(x, \lambda w. \text{Mary left}_w) = 1$

We further depart from Moulton in assuming no basic type distinction between *individuals* and *events* (see Bach et al. 1995) – rather, this also represents a sortal distinction within D_e . Verbs denote properties of *events*. Certain verbs, like *explain*, denote properties of events with propositional content. When a CP (type $\langle e, t \rangle$) merges with a verb (type $\langle e, t \rangle$), they combine via *Predicate Modification* (PM).

- (8) a. $\llbracket \text{explain} \rrbracket = \lambda x : \text{EVENT}(x) = 1 \wedge \exists q_{st} [\text{CONT}(x, q) = 1]. \text{explaining}_w(x) = 1$
 b. $\llbracket \text{explain that Mary left} \rrbracket = \lambda x : \text{EVENT}(x) = 1. \text{explaining}_w(x) \wedge \text{CONT}(x, \lambda w. \text{Mary left}_w)$

Moulton conversely assumes that *that*-clauses combine with CPs via a complex remnant movement derivation. In the talk, we provide arguments for the simpler approach. *That*-clauses also combine with nouns via PM. *The fact that Q* denotes the unique fact with propositional content specified by *Q*. The result of combining this directly with a verb is undefined, since verbs presuppose that the entity they combine with is an *event*. The DP is therefore integrated into the argument structure via merger of a thematic predicate THEME (details suppressed):

- (9) $\llbracket \text{explain the fact that Mary left} \rrbracket = \lambda x : \text{EVENT}(x) = 1. \text{explaining}_w(x) \wedge \text{THEME}(x, \iota y [\text{fact}(y) \wedge \text{CONT}(y, \lambda w. \text{Mary left}_w)])$

We have derived the generalization that *that*-clauses receive an *explanans* reading, whereas DPs headed by content nouns receive an *explanandum* reading, while maintaining one simple meaning for *explain*. As for special quantifiers, we assume they are generalized quantifiers of type

$\langle et, t \rangle$. They are special, because they place no sortal restriction on the individuals they quantify over, other than that supplied by context. Hence, special quantifiers are compatible *explanandum* and *explanans* readings. When *something* ranges over events with propositional content, its trace combines with the verb via *Functional Application*. When *something* ranges over individuals with propositional content, the result of applying the trace to the verb is undefined. The trace is therefore integrated into the structure via THEME. In the talk, we elaborate on how this account extends to questions by fleshing out the semantics of ANS.

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