

The two readings of the complement of ‘explain’: experimental evidence from extraction

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The complement of ‘explain’ is ambiguous as to whether it refers to the thing explained (‘explanandum’) or the thing explaining (‘explanans’). Moreover, the reading of the complement correlates with whether the complement clause is embedded in a nominal layer or not, as in (1) (Elliott 2017, a.o.). Bondarenko (2021, 2022) revises the above correlation at least for Russian, noting that while *overtly* nominalized clauses (with *to*) require the explanandum reading, clauses without *to* are ambiguous between the two readings, as in (2).

- (1) a. *Context: Everyone is wondering why Boris resigned, and Angela announces that Boris has long-term health issues.*
Angela explained [_{DP} the fact that Boris resigned]. (explanandum)
- b. *Context: One day Boris does not come in to work, and everyone is wondering why. Angela announces that Boris resigned (which is true), but does not say why.*
Angela explained [_{CP} that Boris resigned]. (explanans)
- (2) a. Lena (ètim) ob”jasnila (to), čto xleba net. (explanandum)
‘Lena explained the fact that there is no bread (by this)’
- b. Lena ob”jasnila (*to), čto xleba net. (explanans)
‘Lena explained (something, saying) that there is no bread’

Bondarenko preserves the strict correlation, however, by suggesting that the complement on the explanandum reading is *covertly* nominalized (with null D). To support this, she argues that on the explanandum (but not the explanans) reading a clause without *to* disallows extraction behaving like a strong islands, on a par with overtly nominalized clauses, as in (3).

- (3) a. *Kogo Lena ob”jasnila [_{DP} to / Ø [čto “Zenit” legko odoleet?]] (explanandum)
‘Who did Lena explained the fact that *Zenit* will beat?’
- b. Kogo Lena ob”jasnila (*to), čto “Zenit” legko odoleet? (explanans)
‘Who did Lena explain (this, saying) that *Zenit* will beat?’

The evidence in (3a), however, is weakened by two facts. First, the explanandum reading may be independently hard to get for clauses without *to*, at least without a disambiguating instrumental/manner phrase (cf. (2a)), which are not used in Bondarenko’s examples. This is informally suggested by corpus data, where the relevant examples virtually always contain instrumental/manner phrases. Second, extraction from *čto*-clauses in Russian is independently degraded (Bailyn 2020), suggesting that the two factors may combine to mimic strong islands.

The goal of the paper was to experimentally test Bondarenko’s covert nominalization/null D analysis for explanandum clauses without *to*. The study had a $2 \times 2 \times 2$ factorial design, crossing READING (explanans vs. explanandum), COMPLEMENT TYPE (without *to* vs. with *to*) and SENTENCE TYPE (decl(arative) vs. extr(action)), as in (4). Bondarenko’s analysis predicts that extraction from explanandum clauses without *to* should be worse compared to explanans complements (relative to declarative baselines). In addition, it predicts that extraction from explanandum clauses with and without *to* should be similar, whereas extraction from explanans clauses should be worse in the presence of *to* (assuming *to* creates a strong island).

- (4) a. *Context: The CEO was asked why he summoned one of the employees in his office.*
On ob”jasnil (to), čto eë neobxodimo uvolit’. [explanans | decl | ±to]
‘He explained that it is necessary to fire her’

- b. Context: *The CEO was asked why he summoned one of the employees in his office. He explained that it is necessary to fire her.*
 Kogo on ob''jasnil (to), čto neobxodimo uvolit'? [explanans | extr | ±to]
 'Who did he explain that it is necessary to fire?'
- c. Context: *The CEO said that one of the employees was involved in espionage.*
 Ètim on ob''jasnil (to), čto eë neobxodimo uvolit'. [explanand | decl | ±to]
 Intended: 'He said this to explain the fact that it is necessary to fire her'
- d. Context: *The CEO said that one of the employees was involved in commercial espionage. By saying this, he explained the fact that it is necessary to fire her.*
 Kogo on ètim ob''jasnil (to), čto neobxodimo uvolit'? [explanand | extr | ±to]
 Intended: 'Who did he say this to explain the fact that it is necessary to fire?'

Discourse context, as well as instrumental/adjunct phrases in explanandum sentences, were used to control the reading. Interrogative targets were preceded by corresponding declaratives that always contained a pronoun matching the extracted element (so that the question queried the identity of the pronominal referent). Four verbs were tested, with 2 sets per verb: *ob''jasnit* 'explain', *argumentirovat* 'argue', *prokomentirovat* 'comment', *obosnovat* 'justify'. Acceptable and unacceptable fillers (with selectional and complex NP violations) were also used, as well as extraction baselines with nonfactive and cognitive factive verbs. The experiment was run on PCIBex Farm and was completed by 70 people.

The results (see Fig. 1) were analyzed using a linear mixed-effects model that included the three factors (treatment-coded) and their interactions. Extraction conditions were rated low. Crucially, there was also an interaction between extraction and reading ($p = 0.002$), such that extraction

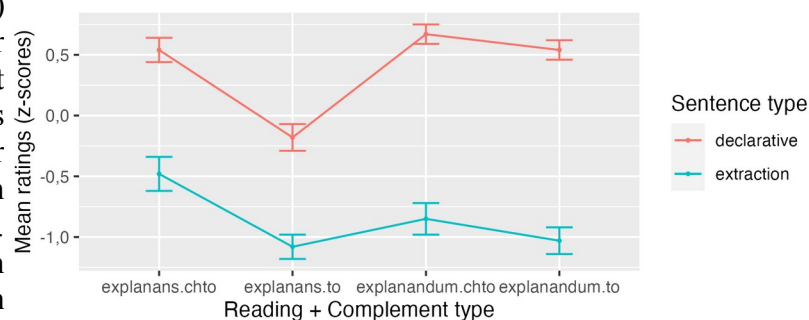


Fig. 1. Standardized mean ratings for the experimental conditions

from explanans clauses without *to* was better compared to explanandum clauses (wrt to declarative baselines). Moreover, multiple comparisons showed the latter did not differ from extraction from clauses with *to*, which were rated low on a par with complex NP violations. In addition, in the declarative condition explanandum clauses with *to* were rated higher compared to explanans clauses, as expected (cf. (2)), although the latter received intermediate ratings, presumably due to the influence of nonstandard Russian. Overall, the results support Bondarenko's analysis, i.e. the correlation between the explanandum reading and nominalization (DP-shell). But they also raise further questions for her overall theory.

For Bondarenko, there are two paths to integrate a CP (viewed as a predicate of contentful entities, see Moulton 2015): (i) if the verb has a true (*e*-type) argument and assigns a θ -role (Theme, Causer, etc.), the CP is nominalized (with a definite D); (ii) if the verb does not have such an argument (and is thus a predicate of events), the CP directly modifies it, giving the meaning whereby the CP specifies the content of the speech act/attitude. The explanandum reading corresponds to path i, leading to nominalization, whereas explanans corresponds to path ii, disallowing nominalization. The underlying assumption is that 'explain' is associated with two different lexical entries. This, however, becomes problematic for cognitive factives like *ponjat* 'understand' (and response-stance verbs), which show mixed behaviour. Although they allow clauses with *to* (hence integration via a theta-role) they do not lead to strong island behaviour (hence allow the modifier path). In fact, in the experimental results, they showed extraction rating (in the bare clause condition) similar to explanans clauses. Bondarenko

would be forced to posit lexical ambiguity on a par with ‘explain’, which is problematic as there is no comparable semantic difference for complements of cognitive factives. A possible solution (cf. Stephen 2022) is to allow *e*-type arguments to combine with a CP *either* by Saturation (after nominalization) *or* directly by Restriction (Chung & Ladusaw 2004). This would allow to keep a single lexical entry for the verb, while avoiding strong islandhood.

References

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