

How Do We Explain That CPs Have Two Readings with Some Verbs of Speech?

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1. Introduction

How do embedded clauses combine with matrix verbs in syntax, and how do their meanings compose with the meanings of matrix verbs in semantics? This paper investigates these questions by examining the syntax and semantics of CPs that combine with verbs of speech like *objasnit'* 'explain' in Russian. An interesting feature of such clauses is that they can receive two distinct interpretations:

- (1) Lena objasnila [_{CP} čto xleba net].
Lena explained COMP bread no
'Lena explained that there's no bread.'
- a. CT: Lena explained the fact that there's no bread.
(e.g., by saying that Katya made sandwiches last night)
- b. CU: Lena said "there's no bread" as an explanation for some other fact.
(e.g., for the fact that she sent Petya to the grocery store)

On the first reading of (1), the embedded clause describes the fact that was explained by Lena: the fact was that there is no bread, and she provided an explanation for it. On this interpretation we don't know what Lena actually said or did in order to explain the bread's absence. I call this the **Content of Theme (CT)** reading: the intuition behind this name is that there is some Theme argument (in (1a)—a fact) that undergoes the process specified by the verb (in (1a)—explaining), and the embedded clause provides the propositional content associated with this argument (in (1a)—tells us what fact this is).

On the second reading of (1), the embedded clause describes what Lena said as her explanation: there was some other fact that Lena was explaining, and her explanation for that fact was "There is no bread". On this interpretation we don't know what fact Lena actually was trying to explain. I call this the **Content of Utterance (CU)** reading: the CP provides the content of what was uttered in the manner specified by the verb (in (1)—what was uttered by Lena in an explaining manner).

Besides *objasnit'* 'explain', these two readings in Russian exist with a number of verbs of speech, e.g., with *argumentirovat'* 'argue' (the position that was argued for vs what was said to argue for some position), *prointerpretirovat'* 'interpret' (what was interpreted vs what the content of the interpretation was), *prokomentirovat'* 'comment on' (what was commented on vs what was said as a comment), *ocenit'* 'evaluate' (what was evaluated vs what the content of the evaluation was). Consider (2).

- (2) Olja argumentirovala /prokomentirovala, [čto èto nespravedlivo].
Olya argued /commented.on COMP this unfair
'Olya argued /commented that this is unfair.'
- a. CT: Olya argued for /commented on the position that this is unfair.
- b. CU: Olya said "this is unfair" as an argument for something /as a comment on something.

On the CT interpretation, there must exist a previous claim or opinion that this is unfair, and Olya argued for it or commented on it. On the CU reading, we do not know what position Olya was arguing for or commenting on, all we know is that she said "this is unfair".

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The verbs of this class can also combine with DPs, which, unlike CPs, receive only one interpretation: they are interpreted as the Theme argument of the verb. For example, in (3) the DP ‘this utterance’ must be understood as denoting the object that is being explained or interpreted. The interpretation where ‘this utterance’ is what Lena produced in an attempt to explain or interpret some other thing is not available.

- (3) Lena objasnila /prointerpretirovala [_{DP} èto vyskazyvanije].
 Lena explained /interpreted this utterance
 ‘Lena explained /interpreted this utterance.’
 a. THEME: Lena explained /interpreted this utterance, e.g., by suggesting what its author meant.
 b. WHAT-WAS-UTTERED: *Lena explained /interpreted some fact by producing this utterance.

A Content-of-Utterance CP cannot co-occur with a Theme DP or a Content-of-Theme CP, as is illustrated in (4). This suggests that the Theme argument and the CU-CP occur in different syntactic configurations.

- (4) *Lena objasnila [ètot fakt] / [čto xleba net]_{CT} [čto Katja delala buterbrody nočju]_{CU}.
 Lena explained this fact /COMP bread no COMP Katya made sandwiches at.night
 ‘Lena explained this fact / that there’s no bread (by saying) “Katya made sandwiches last night”.’

The CU and CT interpretations have been previously noted for English *explain*, under the names of *explanans* and *explanandum* readings respectively (Elliott 2017, Halpert & Schueler 2013, Pietroski 2000, 2005). The reported judgement has been that declarative CPs only get the Content-of-Utterance reading, and so CPs and DPs receive different interpretations. However, this might be not an accurate generalization. Halpert & Schueler (2013) show that CPs in the subject position receive a CT interpretation, Roelofsen & Uegaki (2021: ft.11) provide an example with a CT-CP in the complement position, and it seems that CPs in *how*-questions with *explain* are unambiguously interpreted as describing the objects of explanation (5).

- (5) How do we explain that Cameroon have won twice as many UCL golds as Nigeria?¹

Thus, it seems that CT readings of CPs in English are in principle possible, just like in Russian, but some additional restrictions on how easily it is available might apply.²

The availability of two different readings for declarative CPs raises the question of how these readings arise. Do embedded clauses and verbs under the two interpretations have different denotations? Are the syntactic structures corresponding to the two readings different? This paper investigates these questions.

I argue that the denotations of verbal roots and CPs remain uniform across the two readings, but sentences with CT-CPs and CU-CPs have different argument and event structures, which is reflected in their syntax. I propose that CT-CPs are nominal modifiers of internal arguments in causative constructions. As illustrated in (6), the causative construction involves the causative head v_{CAUS} combining with a root (e.g., $\sqrt{explain}$) which denotes a result state. There is a phonologically null DP which denotes the holder of this result state, and the CP modifies this DP and specifies the propositional content associated with it. I propose that CU-CPs, on the other hand, are event modifiers of intransitive verbs that are built by combining roots like $\sqrt{explain}$ with a silent verbal head $\emptyset_{SAY-manner}$ (7), and that denote predicates of events of saying with an intention to achieve the result state specified by the root of the lexical verb. The CP describes the content of the saying event in this case.

- (6) [_{v_{CAUS}} v_{CAUS} [_{ResultP} $\sqrt{explain}$ [_{DP} \emptyset_D [_{NP} \emptyset_N CP]]]]

- (7) [_{VP} [_V [_V $\emptyset_{SAY-manner}$] [_V $\sqrt{explain}$]] CP]

This paper is structured as follows. Sections 2 and 3 describe the syntactic and semantic differences between the sentences with Content-of-Theme CPs and Content-of-Utterance CPs respectively. In section 4 I present my analysis, and show how it derives the observed distinctions. Section 5 concludes the paper.

¹ <https://www.goal.com/en-us/news/african-football-hq-mane-or-salah-win-the-champions-league/1h3qioyb5y9851mz6bs6137hxt>.

² Whether English has other verbs with which CPs receive both CT and CU readings remains to be investigated.

- a. CT: Lena explained / commented on the fact that there's no bread.
(e.g., by saying that Katya made sandwiches last night)
- b. CU: *Lena said "there's no bread" as an explanation /comment for some other fact.
(e.g., for the fact that she sent Petya to the grocery store)

Again, we see that CT-CPs behave like DPs (both can move), whereas CU-CPs do not (they cannot move). Given Takahashi's generalization about moving clausal complements (12), this distinction in ability to move might indicate that CT-CPs are base-generated in a DP position, but CU-CPs are not.⁵

(12) *The Moved Clausal Complement Generalization*

A clausal complement is allowed to move only if its base-generated position is one in which a DP is allowed to appear.

(Takahashi 2010, via Knyazev 2016: 16)

2.3. Need for case

In this section I would like to argue that CT-CPs, unlike CU-CPs, occur inside a constituent that needs case. The evidence comes from CPs that occur with nominalizations of verbs like *objasnit'* 'explain'.

There is evidence that oblique cases like dative, instrumental or genitive must be overtly realized in Russian (Knyazev 2016). For embedded clauses the requirement to realize oblique cases amounts to the need to occur with a demonstrative that is marked for case when the clause is in an oblique position.⁶ Here I illustrate this requirement with the verb *dobit'sja* 'obtain'. This verb assigns genitive case (13). When the argument of this verb is a clause, the complementizer has to occur with a genitive demonstrative (14). Realizing genitive case is obligatory, as is evidenced by the ungrammaticality of the bare CP.

- (13) Lena *dobilas'* *podedy* /**pobedu*.
Lena obtained victory.GEN /victory.ACC
'Lena obtained the victory.'
- (14) Lena *dobilas'* **togo** **čto** /**to* *čto* /**čto* oni *prigotovili obed vovremja*.
Lena obtain **that.GEN COMP** /that.ACC COMP /COMP they prepared lunch on.time
'Lena succeeded in ensuring (lit. 'obtained') that they cooked lunch on time.'

While verbs like *objasnit'* 'explain' assign accusative case to DPs (15), they lose the ability to assign accusative when they undergo nominalization (16): nominalized verbs have to mark their arguments with genitive case. Thus, nominalizing these verbs creates an environment in which case must be overtly realized, and provides a way to test whether CT-CPs and CU-CPs occur inside constituents that need case.

- (15) Ja *objasnila* /(pro)*interpretirovala* /(pro)*kommentirovala* *ètot fakt*.
I explained /interpreted /commented.on this **fact.ACC**
'I explained /interpreted/commented on this fact.'
- (16) *objasnenije* /*interpretacija* /*kommentirovanije* *ètogo fakt-a* /**ètot fakt*.
explanation /interpretation /comment this **fact-GEN** /this **fact.ACC**
'explanation /interpretation /commenting of this fact.'

The embedded clauses that occur with nominalized verbs like *objasnit'* 'explain' can have two morphological appearances: they either occur with a genitive demonstrative (17) or are bare (18). The interpretation of the embedded clause depends on its form. CPs that occur with genitive demonstratives (17) can only have the reading where they describe the content of some fact/position/claim that is being explained/interpreted/commented on. Bare CPs (18) can only be interpreted as providing the content of the utterance that was carried out in order to explain/interpret/comment on something.

⁵ My analysis (see section 4) will be that CT-CPs are base-generated inside a DP, and not in a DP position itself.

⁶ Alternatively, we might say that only DPs can occupy positions in which oblique cases are assigned, and CPs have to be nominalized to occur in these positions. This view is compatible with the conclusion that I will argue for: that CT-CPs occur inside of nominal structures, but CU-CPs do not. I refrain from comparing the two alternatives here.

(17) *that.GEN + CP: only Content-of-Theme interpretation*

Objasnjenje /interpretacija /komentarivanje [togo što drugogo vixoda net]
 explanation /interpretation /commenting that.GEN COMP other way not.exist
 rasstroilo/a nas.
 upset.N/F us

‘The explanation /interpretation /comment of the fact that there is no other way upset us.’

- a. CT: ‘The explanation/interpretation of/commenting on the fact that there’s no way upset us.’
 b. CU: *‘The explanation/interpretation of/comment on (some fact) that said “there’s no other way” upset us.’

(18) *Bare CP: only Content-of-Utterance interpretation*

Objasnjenje /interpretacija /komentarivanje [što drugogo vixoda net] rasstroilo/a nas.
 explanation /interpretation /commenting COMP other way not.exist upset.N/F us

‘The explanation /interpretation /comment that there is no other way upset us.’

- a. CT: *‘The explanation/interpretation of/comment on the fact that there’s no way upset us.’
 b. CU: ‘The explanation/interpretation/comment on (some fact) that said “there’s no other way” upset us.’

The fact that CT-CPs require a genitive demonstrative when they occur with nominalized verbs suggests that they are generated inside of constituents that need case—DPs, and thus in an environment where case must be realized the demonstrative has to occur. The fact that CU-CPs do not occur with a genitive demonstrative with nominalized verbs suggests that they are never part of a constituent that needs case.

2.4. *Extraction*

Another difference between CT-CPs and CU-CPs is that only the former are islands for movement. In (19) we see that when *wh*-movement occurs from the embedded clause with verbs like *objasniti* ‘explain’, the CT interpretation is unavailable: (19) can be only asking details about what was said in the process of explaining or arguing, but not about the details of the fact/position Lena was explaining or arguing for.

(19) Kogo_k Lena objasnila/argumentirovala, što Olja ljubiti *t_k*?

whom Lena explained/argued COMP Olya loves

‘Who did Lena explain /argue that Olya loves?’

- a. CT: *‘Who is *x* such that Lena explained the fact/argued for the position that Olya loves *x*?’
 b. CU: ‘Who is *x* such that Lena explained some fact/argued for some position by saying “Olya loves *x*”?’

In (20) we see that relativization behaves in the same way: CT-CPs are islands, CU-CPs are not.

(20) Vot [tot čelovek]_k, katorogo Lena objasnila/prokomentirovala, što Olja uvolila *t_k*.

here that person that.REL Lena explained/commented.on COMP Olya fired

‘Here’s the person that Lena explained/commented that Olya fired.’

- a. CT: *‘Here’s the person *x* such that L. explained/commented-on the fact that Olya fired *x*.’
 b. CU: ‘Here’s the person *x* such that L. explained/commented-on some fact by saying “Olya fired *x*”.’

This result might seem unexpected. So far CT-CPs were behaving similar to argument DPs, and CU-CPs behaved more like adjuncts, so shouldn’t extraction from CT-CPs be more available than from CU-CPs? I would like to suggest that neither CT-CPs nor CU-CPs are directly arguments of the verb: both are modifiers, but they modify different things. CT-CPs are modifiers of internal arguments of the verbs: they modify phonologically null nouns that the verb combines with. Thus, moving out of them violates the Complex NP Constraint. I suggest that CU-CPs modify the event argument of the verb. It has been noted that not all verbal modifiers act as islands for movement: e.g., in (21) we see *wh*-movement out of an adjunct.

(21) What_k did Mina come in [whistling *t_k*]?

I conjecture that CU-CPs are like *whistling*: they too are adjuncts that are not islands for movement. Truswell (2011) claims that adjuncts can be moved out of when they “describe a single event with the main clause”. CU-CPs provide the content of the matrix event, and so are good candidates for the single-event condition.

3. Semantic differences

3.1. Presuppositionality

The first semantic difference between CT-CPs and CU-CPs has to do with presuppositionality. If a verb of speech introduces some presupposition, CT-CPs are subject to it, but CU-CPs are not. For example, *objasnit* ‘explain’ introduces a factive presupposition that the thing being explained is a fact (22).

- (22) Lena objasnila [_{CP} što v škaflu net xleba].
 Lena explained COMP in cupboard no bread
 ‘Lena explained that there’s no bread in the cupboard.’
- a. CT: \Rightarrow there is no bread in the cupboard.
 If *there is no bread* was explained, it has to be a fact.
- b. CU: \nRightarrow there is no bread in the cupboard.
 If “there is no bread” was said as an explanation of some other fact, then it could be a false statement (Lena was mistaken, gave an incorrect explanation).

When a CT-CP combines with the verb in (22), it specifies the fact that is being explained, and thus we get an inference that there is no bread in the cupboard in the actual world. The CU-CP does not describe the fact that is being explained, and thus there is no factive inference. Not all verbs of this class presuppose that their internal arguments are facts. For example, the Theme argument of *prokomentirovat* ‘comment on’ has to be a claim or opinion that has been previously expressed, but it doesn’t have to be true (23).

- (23) Lena ne komentirovala što ona spisala test.
 Lena NEG commented COMP she cheated test
 ‘Lena didn’t comment on (the claim) that she cheated.’
- a. CT, SCENARIO 1: OK It’s common ground that the accusations of Lena cheating are false.
- b. CT, SCENARIO 2: # No one claimed that Lena cheated.
Presupposition: There is a claim/opinion that Lena cheated.

In contrast to CT-CPs, I was unable to find any verb that would impose a presupposition on a CU-CP with verbs like *objasnit* ‘explain’. Here is a way to think about this contrast. It seems plausible that predicates can introduce presuppositions about their arguments, but not about their modifiers. If this is the case, then only CPs that specify propositional content of arguments of the verb will be subject to its presuppositions. Thus, CT-CPs are subject to presuppositions because they describe the content of the Theme argument, and CU-CPs are never subject to presuppositions of the verb because they are its modifiers.

3.2. Event structure

Sentences with CT-CPs and CU-CPs also differ in their event structures: eventualities involved in the former kinds of sentences are accomplishments, and the ones involved in the latter are achievements. This distinction is illustrated in (24), where we see that when a verb like *objasnit* ‘explain’ is modified by an adverbial like *za dve sekundy* ‘in two seconds’, which specifies the duration of the event, only CT-CP interpretation is available.⁷ Unlike accomplishments, achievements are instantaneous, and (24) shows that only predicates in sentences with CT-CPs have both duration and an endpoint.

- (24) Lena objasnila [što v škaflu net xleba] za dve sekundy.
 Lena explained COMP in cupboard no bread in two seconds
 ‘Lena explained that there is no bread in the cupboard.’

⁷ The CU-CP interpretation is available for some speakers if the adverbial *za dve sekundy* ‘in two seconds’ describes the time interval *before* the explaining event took place. This is still consistent with the achievement interpretation.

- a. CT: Lena explained the fact that there is no bread in the cupboard in two seconds.
 b. CU: ??Lena explained some fact by saying “there is no bread in the cupboard”, which took her two seconds.

Thus, it seems that verbs in sentences with CU-CPs are achievements, just like the verb *skazat* ‘say’ (25).

- (25) ??Lena skazala čto v škafu net xleba za dve sekundy.
 Lena said COMP in cupboard no bread in two seconds
 ‘Lena said that there’s no bread in two seconds.’

Another difference between predicates in sentences with CT-CPs and CU-CPs is that the former are bi-eventive, while the latter describe a single event. The two subevents of the bi-eventive predicate that we see with CT-CPs are presented in (26): there is a causing subevent and a resulting state that the Theme argument is the holder of (e.g., state of being explained/interpreted/argued for).

- (26) **e₁ caused e₂:**
 a. e₁ is an event of causation by the subject
 b. e₂ is the result state of the Theme (fact/claim/opinion) being explained/interpreted/argued-for

Here I will illustrate this difference in the event structure with *počti* ‘almost’. Consider (27).

- (27) Maša počti objasnila [_{CP} čto v klasse nikogo net].
 Masha ALMOST explained COMP in class nobody no
 ‘Masha almost explained that there is no one in the class.’
- a. CT-CP reading:
 (i) **almost(e₁ + e₂) OK:** ‘Masha almost started explaining the fact that there’s no one in class, but changed her mind and did not do anything.’
 (ii) **almost(e₂) OK:** ‘Masha was explaining the fact that there’s no one in class for a while, and almost succeeded, but did not.’
- b. CU-CP reading:
 (i) **almost(e₁ + e₂) OK:** ‘Masha almost uttered “there’s no one in class” as an explanation of some fact, but changed her mind and did not do anything.’
 (ii) **almost(e₂) *:** ‘Masha said “there’s no one in class”, which almost explained some fact, but did not.’

The sentence in (27) has 3 out of 4 logically possible readings. There are two parameters that determine the readings: the interpretation of the CP (CT-CP vs CU-CP), and the scope of *počti* ‘almost’. Assuming the potentially possible subevents e₁ and e₂ described in (26), *počti* ‘almost’ could either scope just above the result state (e₂), or scope above the combination of the two subevents (e₁ + e₂).⁸ Under the CT-CP reading, both scopes of *počti* ‘almost’ are available (27): it could either be that Masha almost started explaining but then changed her mind and didn’t say a word (*almost*(e₁ + e₂)), or that she actually talked for some time but did not succeed in explaining the fact that there’s no one in the class (*almost*(e₂)). Under the CU-CP reading however, only one scope is possible: Masha almost uttered “There is no one in the class”, but changed her mind and didn’t. The reading where Masha said “there’s no one in class” and that almost explained some fact is not available. I suggest that the absence of this reading shows us that predicates in sentences with CU-CPs describe a single event without a causing subevent and a result state as its subparts. This distinction between a complex eventuality consisting of two subevents (sentences with CT-CPs) and an eventuality that is not decomposable into two distinct subevents (sentences with CU-CPs) makes it very implausible that the sentences with CT-CPs and CU-CPs would be derivationally related in any way.

To sum up, we have seen that CT-CPs behave like DP arguments in a number of ways (proform substitution, ability to move, need for case), whereas CU-CPs do not. Only CU-CPs can be extracted out of. Only CT-CPs are subject to the presuppositions introduced by the verb. And the sentences with CT-CPs and CU-CPs have different event structures: the former are bi-eventive accomplishments, while the latter are single-event achievements. The next section provides an analysis of these differences.

⁸ This is indistinguishable from *počti* ‘almost’ having only e₁ in its scope, as negating e₁ implies negating e₁ + e₂.

4. The proposal

I assume that CPs denote predicates of individuals with Content (28) (Bogal-Allbritten 2016, Elliott 2017, Kratzer 2006, 2016, Moulton 2009, 2015). I also assume that both events and individuals are in the domain D_e , so the CP in (28) can modify both predicates of entities and predicates of events.

(28) $\llbracket_{CP} \text{ that there is no bread} \rrbracket = \lambda y_e. \text{Cont}(y) = \lambda w. \text{there is no bread in } w.$

I propose that embedded CPs are always semantically modifiers, but they can modify different things, which is what we see with verbs like *objasnit'* 'explain'. CT-CPs modify (null) internal arguments of the verb. CU-CPs modify the (saying) event argument of the verb. I propose that roots of the verbs like *objasnit'* 'explain' denote functions from individuals to predicates of result states that hold of these individuals (29), and they can be inserted into different syntactic configurations. The Theme argument and the saying event that CT-CPs and CU-CPs respectively modify occur in two different syntactic structures in which roots like $\sqrt{\text{explain}}$ can be inserted, which is the source of the observed syntactic and semantic differences.

- (29)
- $\llbracket \sqrt{\text{explain}} \rrbracket = \lambda x_e. \lambda s_e. \text{be-clear}(s) \wedge \text{Theme}(s) = x.$
 - $\llbracket \sqrt{\text{argue}} \rrbracket = \lambda x_e. \lambda s_e. \text{be-argued-for}(s) \wedge \text{Theme}(s) = x.$
 - $\llbracket \sqrt{\text{interpret}} \rrbracket = \lambda x_e. \lambda s_e. \text{be-interpreted}(s) \wedge \text{Theme}(s) = x.$
 - $\llbracket \sqrt{\text{comment.on}} \rrbracket = \lambda x_e. \lambda s_e. \text{be-commented-on}(s) \wedge \text{Theme}(s) = x.$

My account thus is an account of structural ambiguity: the meaning of the CP is constant (28) across the two readings, and so are the meanings of the verbal roots (29). But the two readings correspond to two different syntactic structures. An ambiguity account is supported by data from gapping like in (30).

- (30) Ira objasnila [čto programma A ne rabotaet], a Ida - [čto programma B ne rabotaet].
Ira explained COMP program A NEG works and Ida COMP program B NEG works
'Ira explained that program A doesn't work, and Ida explained that program B doesn't work.'
- OK: $CP_1=CT, CP_2=CT$
 - OK: $CP_1=CU, CP_2=CU$
 - *: $CP_1=CT, CP_2=CU$
 - *: $CP_1=CU, CP_2=CT$

In (30) the two CPs must receive identical interpretation, patterning with cases like (31): either both describe some fact that is being explained, or both describe what was said as an explanation. This is surprising for underspecification or vagueness accounts, but not if this is ambiguity. Ellipsis requires the underlying structures to match, and sentences with CT-CPs and CU-CPs do not have identical structures.

- (31) Mary saw a boy with the binoculars, and Sue did too.
Cannot mean: Mary saw a boy using her binoculars, Sue saw a boy that has binoculars.

I propose that sentences with CT-CPs are causative structures with LFs like in (32).

- (32)
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- ```

graph TD
 VoiceP --> DP1[DP]
 VoiceP --> Voice_prime[Voice']
 DP1 --> Lena[Lena]
 Voice_prime --> Voice[Voice]
 Voice_prime --> v_causP[v_causP]
 v_causP --> v_caus[v_caus]
 v_causP --> ResultP[ResultP]
 ResultP --> Result[Result]
 Result --> sqrt_explain["√explain"]
 ResultP --> DP2[DP]
 DP2 --> theta_the["θthe"]
 DP2 --> NP[NP]
 NP --> theta_fact["θfact"]
 NP --> CP[CP]
 CP --> that_there_is_no_bread["that there is no bread"]

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In (32) there is a Result phrase headed by the verbal root  $\sqrt{\text{explain}}$  (29a), which takes a phonologically null DP as its complement. With *objasnit* ‘explain’, the null noun is interpreted as ‘fact’ (33a). The CP is a modifier of this null noun. When the noun combines with the CP and with a (null) definite determiner (33b), we get the interpretation of the Theme argument in (33c). The denotation of ResultP is in (34).

- (33) a.  $[\emptyset_{fact}] = \lambda y_e. \text{fact}(y)$   
 b.  $[\emptyset_{def}] = \lambda P_{et}. \iota y[P(y)]$   
 c.  $[\emptyset_{def} + \emptyset_{fact} \text{ that there's no bread}] = \iota y[\text{fact}(y) \wedge \text{Cont}(y)=\lambda w. \text{there's no bread in } w]$
- (34)  $[\text{ResultP}] = \lambda s_e. \text{be-clear}(s) \wedge \text{Theme}(s) = \iota y[\text{fact}(y) \wedge \text{Cont}(y)=\lambda w. \text{there's no bread in } w]$

ResultP then combines with  $v_{caus}$  (35) and with the causer (via Voice), giving rise to the truth-conditions in (36) once the event argument (the causing event) is existentially closed.

- (35)  $[v_{caus}] = \lambda P_{et}. \lambda e_e. \exists s [P(s) \wedge \text{CAUS}(e)(s)]$
- (36)  $[\text{Lena explained } [CT \text{ that there is no bread}]] = 1 \text{ iff } \exists e, s [\text{Causer}(e) = \text{Lena} \wedge \text{CAUS}(e)(s) \wedge \text{be-clear}(s) \wedge \text{Theme}(s) = \iota y [\text{fact}(y) \wedge \text{Cont}(y)=\lambda w. \text{there is no bread in } w].$

The sentence ‘Lena explained that there’s no bread’ will be true under the CT-CP interpretation if there is an event with Lena as a causer which caused the state of the fact that there’s no bread being clear. For *objasnit* ‘explain’, the causer can be inanimate, (37)-(38), which clearly distinguishes it from the external arguments in sentences with CU-CPs.<sup>9</sup> Adverbs like ‘with whisper’ cannot occur in (37)-(38).

- (37) [To, čto Lena ušla], (\*šëpotom) objasnajet, čto Petja grustit.  
 that COMP Lena left (with.whisper) explains COMP Petja is.being.sad  
 ‘That Lena left explains that Petja is being sad.’
- (38) Èta gipoteza (\*šëpotom) objasnajet, čto algorithm ne rabotaet v nekotoryx slučajax.  
 this hypothesis (with.whisper) explains COMP algorithm not work in some cases  
 ‘This hypothesis explains that the algorithm doesn’t work in some cases.’

Here is how this proposal accounts for the properties of CT-CPs. CT-CPs behave like DPs because they are modifiers inside DPs. It is not CPs themselves that are substituted by nominal proforms, undergo movement or need case, but the DP that they are part of. Being a modifier inside of a DP makes CT-CPs into islands due to the Complex NP Constraint. CT-CPs are subject to presuppositions because presuppositions are restrictions that verbs place on their Theme arguments, and CT-CPs specify the propositional content of such Themes. Finally, there are two syntactically represented eventualities in (32), the causing subevent and the result state, which explains why verbs are bi-eventive accomplishments with CT-CPs.

I propose that sentences with CU-CPs are event modifiers of intransitive verbs with a complex head:

- (39)
- $$\begin{array}{c}
 \text{VoiceP} \\
 \swarrow \quad \searrow \\
 \text{DP} \quad \text{Voice}' \\
 \swarrow \quad \searrow \quad \swarrow \quad \searrow \\
 \text{Lena} \quad \text{Voice} \quad \text{VP} \\
 \swarrow \quad \searrow \quad \swarrow \quad \searrow \\
 \text{V} \quad \quad \quad \text{CP} \\
 \swarrow \quad \searrow \quad \swarrow \quad \searrow \\
 \emptyset_{SAY-manner} \quad \sqrt{\text{explain}} \quad \text{that there is no bread}
 \end{array}$$

This complex verbal head consists of a phonologically null verb  $\emptyset_{SAY-manner}$  (40) that takes the lexical root like  $\sqrt{\text{explain}}$  (29a) as its argument, and it thus gets the interpretation in (41).

- (40)  $[\emptyset_{SAY-manner}]^w = \lambda f_{et}. \lambda e_e. \text{say}(e) \wedge \forall w' [\text{in } w' \text{ Ag}(e) \text{ succeeds in their intentions in } e \Rightarrow \exists x, s [ [f]^w(x)(s) = 1 \wedge \text{CAUS}(e)(s) ]]$

<sup>9</sup> This is not true for all verbs of this class, e.g., *prokomentirovat* ‘comment on’ must have an animate causer.

$$(41) \quad \llbracket \emptyset_{SAY-manner} + \sqrt{explain} \rrbracket^w = \lambda e_e. \text{say}(e) \wedge \forall w' \text{ [in } w' \text{ Ag}(e) \text{ succeeds in their intentions in } e \Rightarrow \exists x, s [\text{be-clear}(s)_{w'} \wedge \text{Theme}(s) = x \wedge \text{CAUS}(e)(s)]$$

The denotation of the complex head is a predicate of saying events whose Agent is intending their saying to cause a state of the kind described by the verbal root, e.g. in (41) we get ‘say with intention to explain something’. The CP then combines with the verb by Predicate Modification and adds the information about the Content of the saying event—what was said with a certain intention (42). After the agent is merged and the event argument is existentially closed, we arrive at the truth-conditions in (43).

$$(42) \quad \llbracket \text{VP} \rrbracket^w = \lambda e_e. \text{say}(e) \wedge \text{Content}(e) = \lambda w. \text{there's no bread in } w \wedge \forall w' \text{ [in } w' \text{ Ag}(e) \text{ succeeds in their intentions in } e \Rightarrow \exists x, s [\text{be-clear}(s)_{w'} \wedge \text{Theme}(s) = x \wedge \text{CAUS}(e)(s)]$$

$$(43) \quad \llbracket \text{Lena explained } [_{CU} \text{ that there is no bread}] \rrbracket^w = 1 \text{ iff} \\ \exists e_e [\text{say}(e) \wedge \text{Ag}(e) = \text{Lena} \wedge \text{Content}(e) = \lambda w. \text{there's no bread in } w \wedge \forall w' \text{ [in } w' \text{ Lena succeeds in her intentions in } e \Rightarrow \exists x, s [\text{be-clear}(s)_{w'} \wedge \text{Theme}(s) = x \wedge \text{CAUS}(e)(s)]]$$

The sentence ‘Lena explained that there’s no bread’ will be true under the CU-CP interpretation if Lena said “There’s no bread”, and by doing this she was trying to explain something. Note that since the Theme argument of the result state is existentially closed (the existential quantifier is introduced in the meaning of  $\emptyset_{SAY-manner}$ ), it will not be possible for a DP or a CT-CP to combine within this structure.

Here is how the properties of CU-CPs are accounted for. CU-CPs do not exhibit DP-like behavior because they are not generated inside a nominal structure. This is why they cannot be substituted by nominal proforms and do not acquire case. CU-CPs do not move because they are adverbial clauses. They are not islands for movement because they describe the same event as the matrix verb (Truswell 2011). CU-CPs are not subject to verbal presuppositions because verbs only introduce presuppositions about their arguments, and CU-CPs are verbal modifiers. The verb is a single-event achievement with CU-CPs because it denotes a single saying eventuality; such eventualities (at least Russian *skazat* ‘say’) are achievements (25). The result state happens only in the *worlds-where-intentions-are-fulfilled* and it is not accessible for adverbial modification: there is no constituent in the structure that denotes it.

## 5. Conclusion

Looking into the argument structure of attitude reports allows us to ask many new questions (see Djärv 2021 for discussion). In this paper I argued based on verbs like *explain* that there are at least two different ways how CPs are embedded: they can modify internal arguments of verbs (CT-CPs) and they can modify event arguments (CU-CPs). This raises the issue of whether the Content of the Theme argument can be the same as the Content of the verbal event. Analyzing sentences with CT-CPs as causative structures raises further questions, e.g. when can causing events have Content and what states can saying events cause?

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