

Null Complement Anaphora: A Corpus-Based Perspective

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Van Huong Nguyen and Jong-Bok Kim. 2021. Null Complement Anaphora: A Corpus-Based Perspective. *Studies in Modern Grammar* 111, 143–167. Null complement anaphora (NCA) is a phenomenon where a predicate's complement is elided. Traditionally, NCA has been taken to be deep anaphora whose interpretation make reference to objects in a discourse or other semantic model, not to syntactic structures as surface anaphora does. It has also been noted that there is no uniform semantic class of verbs that license NCA. This paper investigates the real-life uses of NCA with the corpus COCA (Corpus of Contemporary American English), focusing on the authentic uses of a total of 98 NCA-licensing predicates discussed in the previous literature. We then discuss theoretical implications of the corpus data.

[Key words: null complement anaphora, deep anaphor, null complement, corpus, ellipsis]

1. Introduction

Null Complement Anaphora (NCA) refers to the ellipsis of a complement, as illustrated by the following:

- (1) a. When mother told him to clean up his room, Tommy refused.
(Shopen 1972:241)
- b. Sue was attempting to kiss a gorilla, and Harry didn't approve.
(Hankamer and Sag 1976:411)

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- (2) a. John is telling lies again
 b. I agree. (Grimshaw 1979:289)

As observed from the data, the complement of the predicate is unexpressed here. In (1), the infinitival VP complements of the verb *refused* and *approve* are missing here while in (2), the CP complement of the verb *agree* is unexpressed. The missing elements here are in the preceding sentences, assigning them anaphoric nature.

The predicate that licenses NCA seems to be quite lexical as seen from the following contrast (Fillmore 1986:99):

- | | |
|---|--|
| (3) a. She promised. | a'. *She pledged/vowed/guaranteed. |
| b. I tried. | b'. *I attempted. |
| c. They accepted/approved/concurred/agreed. | c'. *They endorsed/authorized/acknowledged |
| d. She found out. | d. *She discovered |
| e. I protest/object. | e. *I oppose. |

As seen from the contrast here, synonymous predicates *differ* in licensing NCA. For instance, as in (3b), the verbs *tried* and *attempted* are quite similar in terms of meaning, but only the former licenses NCA. Observing this, Fillmore (1986) suggests that we cannot characterize the NCA licensors by a semantic condition.

Another key property of NCA is that it behaves like a deep anaphora in that its unexpressed constituent can be recovered by context (Hankamer and Sag 1976:411):

- (4) [Situation: indulgent father feeds baby chocolate bar for dinner]
 Mother: I don't approve ____ !
 (____ = that you feed him chocolate bar for dinner.)

This contrasts with the surface anaphora VPE (VP ellipsis), which in general requires a linguistic antecedent (Hankamer and Sag 1976:392):

- (5) [Hankamer attempts to stuff a 9-inch ball through a 6-inch hoop]
Sag: #It's not clear that you'll be able to ____.

In this paper, we first review key properties of NCA with reference to VPE and then report the findings of the authentic uses of NCA from the largest freely-available corpus of English, COCA (Corpus of Contemporary American English). In particular, we discuss the findings from the extracted data, focusing on the properties of the predicates that allow NCA as well as those of the null complement.

2. Basic Properties

2.1. Deep and Surface Anaphora: NCA vs. VPE

As noted by Hankamer and Sag (1976) and subsequent work, there are two different types of anaphoric relations in the interpretation of an unrealized expression: deep and surface anaphora. As noted in the beginning, the former (e.g., NCA) can have its interpretation based on contextually provided information while the latter (e.g., VPE) requires a linguistic antecedent. This distinction also leads to the assumption that the null constituent of deep anaphora has no internal structure thus behaves like a proform, while that of surface anaphora presents internal structure which may be sensitive to syntactic operations.

These distinctive properties can be observed between NCA and VPE. First, its missing constituent can have either a linguistic or a pragmatic antecedent, as noted earlier. Further, as deep anaphora, the missing constituent cannot contain an antecedent for a pronoun (Missing Antecedents Test). This contrasts with VPE, as seen from the following contrast (Hankamer and Sag 1976):

- (6) a. *He said one of us had to give up his seat, so Sue volunteered ____, because it was too narrow for her anyway.
 b. He said one of us had to give up his seat, so Sue did ____, because it was too narrow for her anyway.

The pronoun *it* in the subordinate clause of (6a) cannot refer to an alleged antecedent within the null complement of NCA. However, this is possible in (6b): the pronoun *it* can be linked to the antecedent *his seat* within the covert VP *give up his seat*.

As deep anaphora representing no internal structure, NCA also allows no syntactic (e.g., voice) parallelism between the null constituent and its antecedent.

- (7) a. The oats had to be taken down to the bin, so Bill volunteered ____
 (____ = to take the oats down to the bin).
 b. #This problem was looked into by John, and Bob did ____ too
 (____ = looked into the problem).

As in (7a), the active null VP allows its antecedent to be passive, but, as in (7b), this kind of mismatch is in general not allowed in VPE.¹

All these differences seem to indicate that the unrealized complement of NCA is discourse-dependent whereas that of VPE is rather syntactic. Further differences between the two can be observed in other environments. As noted by Huddleston and Pullum (2002), NCA requires its full complement to be null while VPE can have a remnant:

- (8) a. *I won't even try to attend the first session, but I will try ____ the others.
 (NCA)
 b. I can't attend the first session, but I can ____ the others. (Pseudogapping)

¹ VPE in general prefers voice matching, but at the same time there are many instances where VPE licenses voice mismatch as in *This problem was to have been looked into*, but obviously nobody did. As noted by Kehler (2002), there are discourse factors (e.g., resemblance and cause/effect) licensing such a voice mismatch in VPE. See Kehler (2002) for further discussion.

Further, as noted by Depiante (2000, 2001), unlike VPE, NCA does not allow overt *wh*-movement or topicalization out of it, as illustrated in the following:

- (9) a. *I know which book Mary volunteered to read and Peter knows which article Sally volunteered _____. (_____ = to read)
 b. I know which book Mary read and Peter knows which book Sally did _____.

The contrast shows us that it is not possible to have the *wh*-movement out of the null complement in NCA as in (9a), but the parallel movement out of the elided VP is acceptable as in (9b). Related to this, unlike VPE, NCA is also not compatible with relatives (Huddleston and Pullum 2002):

- (10) a. *They've asked him to mend the fuse, which he won't even try _____.
 (NCA)
 b. They've asked me to mend the fuse, which I can't _____.

This difference implies that that null complement of NCA has no internal structure, telling us that the two differ in terms of syntactic structure.

2.2. Properties of the NCA Licensing Predicates

As noted earlier, the predicates that license NCA hardly form a natural class. Fillmore (1986) notes that synonymous verbs differ in licensing NCA:

- (11) A: Why did you marry her?
 B: Because mother insisted.
 B': *Because mother demanded.

The meaning of the verb *insisted* is not quite different from the verb *demanded*, but only the former licenses NCA. The NCA licensing thus seems to be quite verb-specific, not linked to the semantic content.

This idiosyncrasy of NCA licensing verbs has been also noted by

Grimshaw (1979). Consider the following:

- (12) A: Did John leave?/Who left?
B: I don't know. (whether John left/who left
B': *It's too bad.
*I agree.
*I'm flabbergasted.
*I'm surprised.
*It can't be true.

The examples illustrate that the predicates which disallow indirect questions as overt complements do not license NCA. However, this cannot be a natural class, as noted by Grimshaw (1979) herself. The following predicates can select an indirect question as its complement:

- (13) I haven't discovered yet.
I haven't figured out yet.
We haven't figured out yet.
They haven't reported yet.

However, they cannot license NCA, as seen from the following dialogue:

- (14) A: Has the Mayor resigned?
B: *John wouldn't disclose.
*We haven't discovered yet.
*We haven't figured out yet.
*They haven't announced yet.
*They haven't reported yet.

It is thus not possible to semantically differentiate NCA licensing predicates from non-NCA licensing ones. It is rather lexical idiosyncrasies.

2.3. Properties of the Null Complement

As noted by Shopen (1972, 1973), the null complement of NCA behaves

like a definite description. Consider the following:

- (15) a. Bill got a letter today.
b. Tommy refused.

(15a) misses a source argument whose prepositional object can be indefinite:

- (16) a. Bill got a letter from someone today.
b. Bill got a letter from somewhere today.

The sentence (15b), on the other hand, has an elided argument for which the speaker assumes to be in common focus for the hearer as well as himself, and the assertion of the sentence exhausts or uniquely refers to the set of referents corresponding to that argument. The missing argument here cannot be indefinite:

- (17) Tommy refused to do something. (\neq (15b))

The definite description of NCA can be further observed from the following:

- (18) When mother told him to clean up his room, Tommy refused.
(19) [Context: Seeing Kim trying to score a basket from distance.]
I don't think you'll succeed ____.

The example (18) includes a linguistic antecedent for the unrealized complement, and it can be further replaced by a definite pronoun like *it* or a VP pro-form like *do so*. In the meantime, the example (19) has no linguistic antecedent for the null complement: the speaker relies on knowledge shared with the hearer or the obviousness of the identity of the referent within the perceivable physical context for the utterance. But the antecedent is still a definite description linked to the provided discourse (Williams 2012).²

² The definiteness effect is not observed in examples like *I bring him soup and*

Related to this definite description, Depiante (2000, 2001) notes that the covert complement can represent a clausal expression, not a nominal one:

- (20) a. The teacher told the children that it was time to leave even though they already know ____.
 b. *The children learned the song on Monday but on Friday they no longer knew ____.

The difference here is that the null complement in (20a) refers to a proposition while the one in (20b) is anaphoric to a nominal. This difference is also led to the supposition that the null element of NCA contains a free variable specified for the semantic types of a property, proposition, or question.³

- (21) Mother asked John to clean up his room but he refused ____ .
 (____ = to clean up his room)
 Semantic type: $\langle s, \langle e, t \rangle \rangle$ Property
- (22) Anne said that they should leave and Bill agreed ____ .
 (____ = that they should leave)
 Semantic type: $\langle s, t \rangle$ Proposition
- (23) a. Anne asked what time it was and Mary inquired ____ .
 (____ = what time it was)
 Semantic type: $\langle \langle s, t \rangle, t \rangle$ Question
- b. Anne asked the time it was and Mary inquired ____ .
 (____ = the time)
 Semantic type: $\langle \langle s, t \rangle, t \rangle$ Concealed Question

However, the null complement cannot be of semantic $\langle \text{type } e \rangle$ for individuals:⁴

- (24) *John plays golf and Peter tried ____ . (____ = golf)

potatoes, but he won't eat. In such an example, the missing complement represents an indefinite, meaning something like *he won't eat anything*.

³ In examples like *Mary asked the time, so I inquired*, Grimshaw (1979) notes that the NCA is not a nominal but a concealed question with a variable like what the time was.

3. Corpus and Data Collection

As noted earlier, the class of predicates that license NCA seems to have no lexical uniformity. Table 1 includes a list of NCA-licensing verbs that Depiante (2018) collected from the previous literature:

Table 1. NCA licensors (from Depiante (2018))

| Strongly supported predicates (assumed by more than 1 author) | | | | | |
|---|-------------|----|------------------|----|--------------|
| 1 | accept | 2 | (dis)agree | 3 | (dis)approve |
| 4 | ask | 5 | begin | 6 | complain |
| 7 | comply | 8 | continue | 9 | convince |
| 10 | explain | 11 | fail | 12 | find out |
| 13 | finish | 14 | force | 15 | forget |
| 16 | guess | 17 | hear | 18 | inquire |
| 19 | insist | 20 | know | 21 | let |
| 22 | look | 23 | make (sb do sth) | 24 | mind |
| 25 | notice | 26 | object | 27 | overhear |
| 28 | persuade | 29 | promise | 30 | quit |
| 31 | recall | 32 | recover | 33 | refuse |
| 34 | remember | 35 | return | 36 | see |
| 37 | start | 38 | stop | 39 | succeed |
| 40 | suppose | 41 | suspect | 42 | tell |
| 43 | try | 44 | understand | 45 | volunteer |
| 46 | wonder | 47 | worry | | |
| Weakly supported predicates (assumed by only 1 author) | | | | | |
| 48 | allow | 49 | answer | 50 | apply |
| 51 | approach | 52 | assume | 53 | be able |
| 54 | be certain | 55 | be convinced | 56 | be delighted |
| 57 | be offended | 58 | be sure | 59 | be surprised |
| 60 | beg | 61 | bother | 62 | care |
| 63 | cease | 64 | check | 65 | concur |
| 66 | confess | 67 | consent | 68 | dare |
| 69 | debate | 70 | desert | 71 | discover |
| 72 | dissent | 73 | encourage | 74 | enter |

⁴ Haynie (2010) notes that NCA can have an individual interpretation when the covert complement replaces a PP with a semantically vacuous preposition.

i) The board considered the new proposal but half of the members objected
 . (_ = to the proposal; _ ≠ to considering the proposal)

| | | | | | |
|----|-----------|----|---------|----|----------------------|
| 75 | escape | 76 | excuse | 77 | expel |
| 78 | help | 79 | intrude | 80 | listen |
| 81 | listen in | 82 | manage | 83 | oblige |
| 84 | offer | 85 | order | 86 | order (sb to do sth) |
| 87 | peek | 88 | permit | 89 | protest |
| 90 | rely | 91 | reply | 92 | rescue |
| 93 | resume | 94 | show | 95 | stay |
| 96 | teach | 97 | wait | 98 | warn |

In this paper, we have tried to investigate the real-life uses of these 98 predicates in the NCA environments that Depiante (2018) obtained from the previous literature. For this, we have used the corpus COCA (Corpus of Contemporary American English). The corpus is the largest structured corpus of Contemporary American English that continues to be updated. In 2020, The corpus contains more than 1 billion words of text from eight genres: spoken, fiction, popular magazines, newspapers, academic texts, and TV and Movies subtitles, blogs and other web pages.

To identify the proper tokens, we searched for tokens of the predicates at the final position of the sentences or before a pronoun that ends the sentences when the predicates require an object such as: *allow, encourage, excuse, expel, force, let, make, order (sb to do sth), permit, persuade, tell* (Fillmore 1986). We collected a total of 289 instances for these 98 predicates, but removed those with the predicate *rely* since they are not NCA examples.⁵

⁵ Three instances of the predicate *rely* which do not meet the condition of NCA were removed:

- (i) In those areas where we lack our own knowledge, we find experts—true experts—on *whom* we can **rely**. (2017 ACAD)
- (ii) Part of the challenge, he says is the lack of robust federal funding for gathering the economic data on *which* policymakers and businesses **rely**. (2008 NEWS)
- (iii) PONNURU: Warren, Sanders and Harris are three of the top candidates and they're all for outlawing (ph) this kind of private health insurance *that* most Americans **rely** on. (2019 SPOK)

NCA is not compatible with relatives (Huddleston and Pullum 2002), but in the above cases, there are relative pronouns *whom, which, and that* which exclude these instances from the cases of NCA.

With the remaining 286 tokens with the 98 predicate types, we have performed a basic quantitative and some qualitative investigation.

4. Corpus Findings and Discussion

4.1. Finiteness of the Licensing Verb

We have first checked the finiteness of the licensing verb. As shown in Figure 1, the percentage of finite verbs and non-finite verbs are relatively similar with 57% of finite verbs (162 instances) and 43% of non-finite verbs which include infinitive, present and past participle:

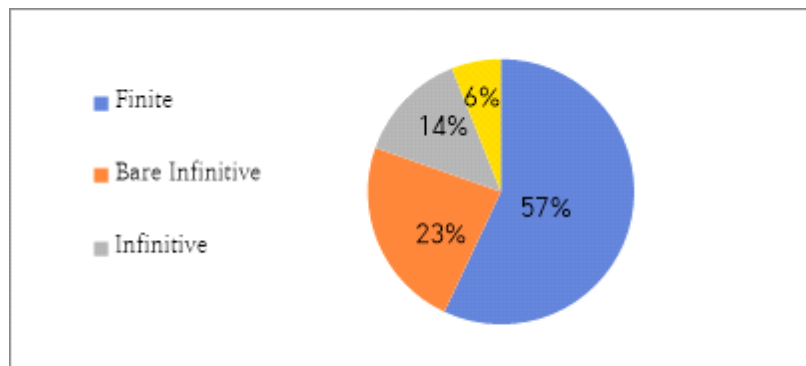


Figure 1. Verb types of the predicates from COCA

(25) Finite verbs

- a. 7 Sinners supposedly is one of their heaviest albums, I somewhat **disagree**.
(2012 BLOG)
- b. ally, what happened after you left Felicity? I didn't want to leave her, but she **insisted**.
(2019 FIC)

(26) Non-finite verbs

- a. I kept coming in to see her every night. Frank warned me to stop.
(1991 MOV)
- b. As for Joyce Lipson, it's now been two months since her surgery and she's all recovered.
(1995 SPOK)

The data imply that the finiteness does not affect the NCA licensing condition.

4.2. Syntactic Categories of the Null Complement

According to Fillmore (1986) and Haynie (2010), a wide variety of grammatical constructions can host the NCA including NP, PP, CP, and VP. As shown in the following table, there are at least five types (NP, PP, CP, *wh*-clause, and VP) of the syntactic category for the unrealized complement in NCA.

Table 2. Categories of NCA from COCA

| Categories | | Number of Instances | Percentage |
|-------------------|-----------------|---------------------|------------|
| NP | | 33 | 11.5% |
| PP | | 82 | 28.7% |
| CP | | 68 | 23.8% |
| <i>Wh</i> -clause | | 19 | 6.7% |
| VP | Infinitive | 65 | 22.7% |
| | Bare infinitive | 6 | 2.1% |
| | -ing | 13 | 4.5% |
| Total | | 286 | 100% |

Among of these, 33 cases are NP direct objects, they follow predicates such as *accept*, *answer*, *approach*, *desert*, *enter*, *oblige*, *offer*, and so forth.

- (27) a. Houston had been pressing hard to complete the trade on that Friday, but Thunder GM Sam Presti waited until Saturday to present his final offer with a 60-minute deadline to **accept** ~~*this final offer*~~. (2013 BLOG)
 b. My son Pradelio... ran away from the army. He **deserted** ~~*the army*~~. (1994 MOV)

Another 82 instances with PP complements following verbs namely *apply*, *(dis)approve*, *be delighted*, *be offended*, *care*, *comply*, *dissent*, *look*, etc.

- (28) a. She couldn't find it, no matter where she **looked** ~~*for-it*~~. (2019 FIC)
 b. Hana's not here, so as the acting commander, I'm ordering you to end the transfer, and I expect you **to comply** ~~*with-my-order*~~. (2018 TV)

Predicates like *notice*, *concur*, *confess*, *debate*, *discover*, *find out*, *notice*, *wonder*, and *have* their direct objects as a CP which is either a *that*-clause or *if/whether*-clause, the latter in most cases takes the meaning of the yes/no question in the antecedent. There is a total of 68 cases of CP:

- (29) a. In school she'd switched her name from Lourdes to Liz, but no one had seemed **to notice** ~~*that-she'd-switched-her-name-from-Lourdes-to-Liz*~~. (2016 FIC)
 b. In some way, maybe, I am enjoying this war? I **wonder** ~~*whether-I-am-enjoying-this-war*~~. (1992 FIC)

The *wh*-clauses in the null complements take their meanings from the *wh*-questions in the antecedents, or syntactically from a *wh*-clause, or even from the context.

- (30) a. Where are you, Megan? Oh, don't tell me. Let me **guess** ~~*where-you-are*~~. (1990 MOV)
 b. At first I didn't know where I was. Then I **remembered** ~~*where-I-was*~~. (1990 FIC)
 c. I went out there for a reason. I just can't **remember** ~~*why-I-went-out-there*~~. (2019 TV)

The remaining 84 cases belong to VP as null complements. The most frequent type of VP is infinitive VP which follows predicates like *agree*, *allow* (+object), *be able*, *bother*, *consent*, *convince* (+object), and so forth.

- (31) a. I'll order you more pain meds. – Don't **bother** ~~*to-order-me-more-pain-meds*~~. (2016 TV)
 b. We'll get her help. Good luck trying to **convince** her ~~*to-help*~~. (2018 TV)

Bare infinitive VP also appear in 6 cases following just 2 verbs *let* (+object)

and *make* (+object).

- (32) a. I wanted to call a cab. Jack, he wouldn't let me ~~*call a cab*~~.
(1992 MOV)
- b. If you're not gonna cooperate willingly, we're gonna have to **make** you
~~*cooperate*~~. (2019 TV)

The 5 predicates *cease*, *finish*, *mind*, *quit* and *stop* require their null complements to be -ing VPs.

- (33) a. Teacher Lori Bogen wrote, "I started to write this letter and I can't seem
to **finish** ~~*writing this letter*~~". (2012 BLOG)
- b. I thought you were supposed to be working. I **quit** ~~*working*~~.
(1992 MOV)

The attested examples we have seen so far tell us that there is no dominant category of NCA that outnumbers the others. The syntactic category of NCA depends on the licensing predicate. One question that remains here is that the tokens where the assumed missing complement is an NP, as in (27). As noted in the literature, the missing complement of NCA can be a concealed question realized as an NP, but not an NP denoting an individual. In (27b), the missing complement is an individual denoting NP as in *deserted the army*, which is linked to the antecedent in the previous context. A further investigation is called upon to figure out the exact nature of the examples where the missing complement appears to be an NP.

4.3. Linguistic vs. Pragmatic Antecedents

As noted earlier, NCA, as a deep anaphora, can gain its interpretation with or without a linguistic antecedent (Hankamer and Sag 1976). The majority of the data have linguistic antecedents, as given in Figure 2.

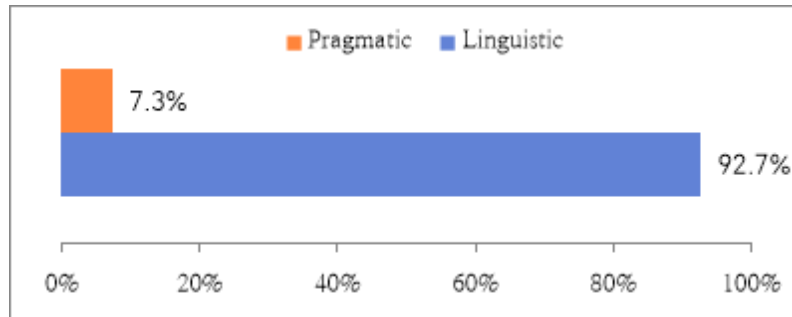


Figure 2. Antecedents of NCA from COCA

As seen from the figure, of the total 286 instances, 265 NCA examples (92.7%) have a linguistic antecedent while only 21 examples (7.3%) have a pragmatic antecedent. The following includes examples with a pragmatic antecedent for the NCA in question:

(34) Pragmatic antecedents

- a. “Ohh. Love,” she said again, and moved her hand back up to his soaked face and wiped at the tears and said, “There now, pet,” and “We’ll see, we’ll see,” over and over again so that her voice sounded like the feel of the brush of her hand on his face and she did not cease until he *ceased ~~frying~~*. (2003 FIC)
- b. So I went in, and on the shelf there were two more books, and I—I debated *with myself*. I picked one up, and I thought, “Well, you know, I’m in the middle of the fourth book, so I’m not ready to read the fifth book yet.” And I – I... thought, “Do I really want this?” (2003 SPOK)

In (34a), there is no overt linguistic antecedent for the complement of *ceased*, but the contextual situation (e.g., wiping the tears on his face) indicates that the putative complement is ‘crying’. (34b) is also similar in that its contextual situation provides the antecedent of the NCA.

The remaining 265 cases all include an overt linguistic antecedent, as illustrated by the following:

(35) Linguistic antecedents

- a. And I wanted a partner in that endeavor and I reached out to David, who I have great great respect for—he’s a fantastic lawyer—and I asked him whether he could *be a partner with me* in this case. And he agreed ~~*to be a partner with me*~~. (2014 SPOK)
- b. Looks like we’re neighbors. Is that *what we are*? It is if anyone asks ~~*what we are*~~. (2018 MOV)
- c. I *email* her my work but she doesn’t reply ~~*to my email*~~. (2019 FIC)

The antecedent of NCA, as a definite ellipsis, needs to be retrieved from something given in the context (Fillmore 1986). Having a linguistic antecedent would be the easier way to have the proper resolution of the unexpressed complement. Finding its antecedent with a definite description requires the salient mutual knowledge shared by the interlocutors. The discourse could provide the salient information, but we need several inference processes to locate this knowledge and link it to the covert complement. This tells us why those with pragmatic antecedents are much less frequently used in daily-life.

4.3. Identity Question

In understanding ellipsis, as noted by Merchant (2016), one key question is identity question concerning the relationship between the understood material in ellipsis and its antecedent.⁶ As discussed earlier, NCA, as deep anaphora, allows nonidentity in voice between the null complement and its antecedent (Hankamer and Sag 1976).

Our NCA corpus data also show us that mismatch between the two is quite prevalent:

⁶ The other two questions are structure question and licensing question. The former asks if there is syntactic structure that is unpronounced or not, while the latter questions What heads or positions or structures allow for ellipsis. See Merchant (2016) and Kim and Nykiel (2020) for detailed discussion.

Table 3. Identities of NCA from COCA

| Identities | Number of instances | Percentage |
|--------------------|---------------------|-------------|
| Syntactic identity | 120 | 45% |
| Mismatches | 145 | 55% |
| Total | 265 | 100% |

Among the 265 extracted instances, we found 120 circumstances that the null complements have the same syntactic identities with their antecedents.

- (36) a. I asked for forgiveness. Got on my knees and **begged** ~~for forgiveness~~.
(2016 TV)
- b. It might not be British anymore, but I can't help worrying about who it is in the process of electing. I hurry back to my computer **to check** ~~who it is in the process of electing~~. (2012 BLOG)
- c. Well, I always liked to draw. My mom **encouraged** me ~~to draw~~.
(2012 MOV)

As deep anaphora, NCA does not require strict parallelism with the antecedents (Hankamer and Sag 1976). Our corpus data show that the null complements that are not syntactically identical with their antecedents outnumber the syntactically identical ones. The patterns of syntactic mismatch also quite vary, as given in the following.

Voice As noted by the literature, NCA allows mismatch in voice between the understood complement and the antecedent (Huddleston and Pullum 2002). The corpus also yields examples like the following:

- (37) In a moment a cart with four large metal deposit boxes is pushed in. The clerk **excuses** himself ~~for pushing in a cart with four large metal deposit boxes~~. (2001 FIC)

The passive voice in the antecedent mismatches with the active voice in the null complement, as the subject is also changed from a cart (an object that *is pushed in*) to the clerk (*who pushes in the cart*).

Tense The tense of the understood NCA differs from that of the antecedent too. An illustrative example is given in the following:

- (38) a. I don't have the quotes or the apostrophe, I just **discovered** *[that I didn't have the quotes or the apostrophe]*. (2012 BLOG)
 b. G. Massey said that There are tribes in Africa that will be baptized with rainwater only. But again he never **explained** *[why they would be baptized with rainwater only]*. (2012 BLOG)

Syntactic category Our data also yield examples where the category of the null complement differs from that of the antecedent:

- (39) a. She never learned to dance when she was a child, she admits, but he offers to teach her, Clancy extends her hand and she **accepts** *[this offer]*. (2019 FIC)
 b. The adults took turns going in so that someone stayed with me under the huge trees where I fed the squirrels, so fat and friendly that they came and sat right in front of me and **begged** *[for food]*. (2001 FIC)

In these examples, the understood NCA is an NP and a PP, but the antecedent is a verb. A different pattern is also observed in examples like the following:

- (40) a. Someone's either a smoker or a nonsmoker, there's no in-between. The trick is to find out which one you are and be that. – Well, I'm trying to **quit** *[smoking]*. (1991 MOV)
 b. The vice president, whenever he comes home to vote, after he casts his ballot, he speaks to a small group of students here. Why don't we **listen** *[on his speech]*. (2010 SPOK)

In (40a), the antecedent is an NP while its linked anaphor is a gerundive verb. Meanwhile, in (40b), the antecedent is a verb while the understood complement is a PP. This type of mismatch again supports the deep anaphoric properties of NCA.

Morphosyntactic mismatch The corpus data yield a variety of morpho-syntactic mismatch between the covert complement and its antecedent. Firstly, there are 22 instances where the understood complement is an infinitival VP while its antecedent is a base VP:

- (41) a. Early today, my mother phoned and demanded I stay in my family home instead of going to a hotel. Reluctantly, I **agreed** ~~*to stay in my family home instead of going to a hotel*~~. (2012 BLOG)
 b. “Will you come backstage afterwards?” # “Yes. If you **permit** me ~~*to come backstage afterwards*~~.” (1996 FIC)

The following also illustrates morphosyntactic mismatch between the two:

- (42) a. You know, I can go and wake them up. I don’t **mind** ~~*going and waking them up*~~. (2012 WEB)
 b. Who’s gonna hold the pillow? I will. I don’t **mind** ~~*holding the pillow*~~. (2019 TV)

As seen from the examples, the understood complement is a gerundive VP while the antecedent is a base VP. A similar mismatching is found in the following examples:

- (43) a. Frustrated and peckish, Klobuchar apparently proceeded to eat the salad using a comb she grabbed from her bag. She then reportedly reprimanded the aide for his mistake and told him to clean off the comb when she **finished** ~~*eating the salad*~~. (2019 MAG)
 b. If she goes, you... you’re gonna have *to work overtime*. It’s okay. I don’t **mind** ~~*working overtime*~~. (2019 TV)
- (44) a. UPDATE 10:27 a.m.: Planning on *going to the Hostess Bakery Thriftshop in Glendale to stock up on Twinkies*? Don’t **bother** ~~*to go to the Hostess Bakery Thriftshop in Glendale to stock up on Twinkies*~~. (2012 BLOG)
 b. But now I do, since she’s been gone: I know now she was *telling* as much truth as she **dared** ~~*to tell*~~. (2016 FIC)

- (45) a. I have talked to them, or tried to. Until their parents refused to allow me ~~to talk to them~~. (2004 FIC)
 b. Up to this point, the GOP has *resisted these efforts*; let's hope they continue ~~to resist these efforts~~. (2012 BLOG)
 c. Commander, you *kept all of these officers alive* by yourself? The kids helped ~~to keep all of these officers alive~~. (2019 TV)
 (46) Blue light flashes within the tunnel. Then, it ceases ~~flashing~~. (2002 FIC)

All these patterns show us that the morphosyntactic (in particular verb form) form of the covert complement need not match with that of its antecedent.

In addition to these, a more complex morphosyntactic mismatch is also found in examples like the following:

- (47) I thought of pawning it, but I was afraid my father would be angry if he found out ~~that I pawned it~~. (2015 FIC)

The understood complement is a CP but its linked antecedent is a gerundive. The mismatch found in examples like the following is also intriguing:

- (48) a. Coming up, President Bush says Congress gave him the authority to eavesdrop on Americans but some now saying *he doesn't even need Congress' permission* at all. That all presidents can do it anyway. Really? We debate ~~whether he needs Congress' permission~~.
 b. So *somebody must be buying a lot of nutmeg*. Can you guys track that down in the morning? Uh-oh! It is morning, I better go over to Derek's house and try to get him to confess ~~that he is buying a lot of nutmeg~~. (2019 MOV)

In (48a), there is a mismatch in polarity whereas in (48b), the mismatch involves not only the morphosyntactic value but also the subject pronoun.

As we have seen, the corpus data yield varied patterns of morphosyntactic mismatches between the understood complement and its antecedent in NCA. We could still require syntactic identity between the two by placing tense or voice morphology in a higher syntactic position as do

Merchant (2013) and others. However, there are also instances like (47 and 48) that challenge such a configurational approach.

Complement category: PP and NPAs noted by Chung et al. (1995), Chung (2006), Kim (2015), Merchant (2016), and others, sluicing is elision of all but the interrogative phrase of a constituent question. It has two main types: merger and sprouting:

- (49) a. They've made an offer to a linguist, but I'm not sure which one.
 b. She insulted somebody but she won't tell me who.
 (50) a. They were firing, but at what was unclear.
 b. A: I went to the movies last night. B: Who with?

In the merger type, the remnant *wh*-phrase has an overt correlate in the antecedent while in the sprouting type the remnant has no overt correlate within the antecedent.

What we can observe in sprouting examples (50) is that the unrealized PP in the antecedent is linked to the realized PP in sluicing. This kind of mismatching, though not exactly identical, is also found in NCA. We have identified a variety of examples where the missing complement is a PP while the antecedent is an NP:

- (51) a. Is *that* really the best answer to the question posed by this post? I don't think so, and, yes, reasonable people can disagree ~~with that~~.
 (2012 BLOG)
 b. The Islamic Society pursued *the new cemetery* because the Muslim graveyard it uses in Enfield, Conn., is a long, 60-mile drive from Worcester, but Dudley objected ~~to the new cemetery~~. (2016 NEWS)
 c. She wanted *to be an opera singer*, but her husband, my father, disapproved ~~of her being an opera singer~~.
 d. Daria, if you don't like *it*, you complain ~~about it~~. (2001 TV)
 e. They held her captive for more than seven years and *they* did a variety of horrible things to her. Finally, in 1984, she escaped ~~from them~~.
 (2012 WEB)

- f. Built me *a shelter* against the rain, but could not have it to myself in peace. The new creature intruded ~~*into my shelter*~~. (1999 FIC)
- g. Stephen, *the photographs*. Come look ~~*at the photographs*~~. (2018 TV)
- h. We used to wrap *his presents* in lead foil so he couldn't peek ~~*in his presents*~~. (2003 TV)
- i. The first time she invited the three of you *to go to the bar with her*, you protested ~~*against going to the bar with her*~~. (2018 FIC)
- j. So we just – Norah just mentioned it's been seven months and said *devastating hurricane*. Give us a sense of how the country's *recovering* ~~*after the devastating hurricane*~~. (2018 SPOK)

In these examples, the missing expression is a variety of PP with a different preposition whereas its antecedent is typically an NP.

More complex examples are also found:

- (52) a. I got *into the FBI*. – Shut the fuck up! I didn't even know you applied ~~*for the FBI*~~. (2003 MOV)
- b. Chair Ajit Pai and his two fellow Republicans voted in favor *of the report*, which concludes that Americans' access to fast Internet service has dramatically improved. The two Democrats dissented ~~*from the report*~~. (2019 MAG)
- c. You can't keep her *out of this school*. I think you'll find I can. You had no grounds for expelling her ~~*from this school*~~. (1998 TV)
- d. A native of Iran, Sepi Asefnia came *to the US* in 1978 without her parents to finish high school. After the revolution in Iran in 1979, she decided to stay ~~*in the US*~~. (2005 NEWS)

The understood complements here are all PPs, but the linked antecedent is a different PP or can be its object NP. This kind of mismatch hints that what matters more in NCA is not syntactic identity but rather identity in semantic role of the missing argument.⁷

⁷ As in other elliptical constructions, vehicle change, the phenomenon whereby a pronoun appears in an ellipsis site, also occur in NCA (Fiengo and May 1994, Merchant 2001). The corpus data also yield a great number of vehicle change examples where the pronoun in the missing complement mismatches with the one in the antecedent:

- (53) a. "I wouldn't know," *Brownell_i said uneasily*. The knots in his_j jaw showed
~~*that he_i said uneasily_j*~~. (2013 FIC)
- b. *"I wouldn't know," *Brownell_i said uneasily*. The knots in his_j jaw showed
~~*that Brownell_i said uneasily_j*~~. (2013 FIC)

5. Conclusion

Null complement anaphora (NCA) is an intriguing type of elliptical constructions that involves an anaphoric relation between the understood expression and its antecedent. The paper first reviewed key properties of NCA and then discussed our investigation of corpus data to understand its real-life uses. We have seen that the NCA predicates used in real-life contexts have the characteristics that mostly agree with previous studies. The predicates of NCA can be both finite and non-finite. Further, NCA allows pragmatic antecedents, but in most cases it is found with a linguistic antecedent. As for syntactic identity, the corpus data have shown us quite different flexibilities: there are varied patterns of mismatch between the understood complement and its antecedent.

The observed data here support the view that NCA is a type of deep anaphora whose interpretation can be recovered either by linguistic antecedents or by situational ones and that eventually presents no internal structure. The corpus data show us various mismatch patterns between the understood complement and its possible antecedent second this. These flexibilities appear to challenge syntax-based accounts of NCA, but support direct-licensing approaches: the implementation of direction of this direction we leave open for future research.

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- i) a. Elaine gave Priscilla a hug. "*You go on now and be safe.*" # "*Okay, if you insist that I go!*" (2017 FIC)
- b. *He* once asked her to do this and she sees no reason not to oblige ~~*him!*~~. (2019 FIC)

References

- Chung, S. 2006. Sluicing and the Lexicon: The Point of No Return. In R. T. Cover and Y. Kim (eds). *Proceedings of the Annual Meeting of the Berkeley Linguistics Society 31*, 73–91. Berkeley Linguistics Society.
- Chung, S., W. A. Ladusaw and J. McCloskey. 1995. Sluicing and Logical Form. *Natural Language Semantics 3*, 239–282.
- Depiante, M. A. 2000. The Syntax of Deep and Surface Anaphora: A Study of Null Complement Anaphora and Stripping/Bare Argument Ellipsis. Doctoral dissertation. University of Connecticut.
- Depiante, M. A. 2001. On Null Complement Anaphora in Spanish and Italian. *Probus 13*, 193–221.
- Depiante, M. A. 2018. Null Complement Anaphora. In J. van Craenenbroeck and T. Temmeman (eds). *The Oxford Handbook of Ellipsis*, 657–680. Oxford: Oxford University Press.
- Fiengo, R. and R. May. 1994. *Indices and Identity*. Cambridge, MA: MIT Press.
- Fillmore, C. J. 1986. Pragmatically Controlled Zero Anaphora. In Nikiforidou V. et al. (eds). *Proceedings of the Twelfth Annual Meeting of the Berkeley Linguistics Society*, 95–107. Berkeley Linguistics Society
- Grimshaw, J. 1979. Complement Selection and the Lexicon. *Linguistic Inquiry 10*, 279–326.
- Hankamer, J. and I. Sag. 1976. Deep and Surface Anaphora. *Linguistic Inquiry 7*, 391–426.
- Haynie, H. 2010. What is Null Complement Anaphora? A Syntactic Account Can Explain. Master's thesis. University of California at Berkeley.
- Huddleston, R. and G. K. Pullum. 2002. *The Cambridge Grammar of English*. Cambridge: Cambridge University Press.
- Kehler, A. 2002. *Coherence, Reference, and the Theory of Grammar*. Stanford, CA: CSLI Publications.
- Kim, J.-B. 2015. Syntactic and Semantic Identity in Korean Sluicing: A Direct Interpretation Approach. *Lingua 166*, 260–293.
- Kim, J.-B. and J. Nykiel. 2020. The Syntax and Semantics of Elliptical Constructions: A Direct Interpretation Perspective. *Linguistic Research 39*, 223–255.
- Merchant, J. 2001. *The Syntax of Silence: Sluicing, Islands, and the Theory of Ellipsis*. Oxford: Oxford University Press.
- Merchant, J. 2013. Voice and Ellipsis. *Linguistic Inquiry 44*, 77–108.

- Merchant, J. 2016. Ellipsis: A Survey of Analytical Approaches. In J. van Craenenbroeck and T. Temmerman (eds). *A Handbook of Ellipsis*, 18–45. Oxford: Oxford University Press.
- Shopen, T. 1972. A Generative Theory of Ellipsis: A Consideration of the Linguistic Use of Silence. Doctoral dissertation. University of California.
- Shopen, T. 1973. Ellipsis as Grammatical Indeterminacy. *Foundations of Language* 10, 65–77.
- Williams, Al. 2012. Null Complement Anaphors as Definite Descriptions. In A. Chereches (ed). *Semantics and Linguistic Theory 22*, 125–145. Ithaca, NY: CLC Publications.

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