Ellipsis meets the reactive *what-x* construction in English[1]

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We suggest a novel theoretical analysis of what is known as the reactive *what-x* construction. This
construction, which has recently been noticed and described in Põldvere & Paradis (2019, 2020),
has primarily clarificational properties and requires the presence of an antecedent in the preceding
context. We begin by summarizing its syntactic properties and main functions, based on data
drawn from the London–Lund Corpora of spoken British English, and then address a pattern
that has escaped notice thus far, i.e. that the majority of the instances of this construction
feature a type of ellipsis known as fragments. Departing from the analysis articulated in
Põldvere & Paradis (2020), we present one that captures the elliptical properties of the reactive
what-x construction by assimilating it to two classes of fragments: those serving as reprise
utterances and those serving as direct utterances. Our analysis relies on Ginzburg & Sag's
(2000) detailed analysis of reprise and direct fragments couched within a non-sententialist
approach to ellipsis. This allows us to analyze the reactive *what-x* construction as a type of an
in-situ interrogative clause whose elliptical properties are licensed by a version of the
constraint Ginzburg & Sag (2000) use to license fragments.

Keywords: reactive *what-x* construction, reprise fragments, direct fragments, ellipsis,
constructional Head-driven Phrase Structure Grammar

1   Introduction

The reactive *what-x* construction has been noticed very recently in spoken British English.
It consists of the *wh*-phrase *what* followed by another phrase (Põldvere & Paradis 2019,
2020), as illustrated by the bolded utterances in (1)–(3). The majority of the examples
cited throughout this article are from the London–Lund Corpora (LLC) of spoken
British English, either the first (LLC–1) or second edition (LLC–2).[2] If no source is
indicated, the examples are made up.

[2] The examples from the LLCs in this article are presented along with annotations (in XML format) of pauses
(<pause/>), non-verbal vocalizations (e.g. <vocal desc='laughs'/>), unclear transcription (<unclear/>) as well as
filled pauses (*uh, uhm*) and repetition. Overlaps and truncated words have not been marked. In (1)–(5), prosodic

(1)   A: after you'd read it over to her <pause/> that's uh about half past two <pause/> she had a rest <pause/> didn't she

    B: yes we both had a rest yes

    C: **what she went to sl\eep # did she**

    B: she went to sleep yes (LLC–1)

(2)   A: but this museum is double the size of Tate Modern even with the the uh the extension

    B: **what the extension that's not \open**

    A: yes (LLC–2)

(3)   A: and we managed to add in Judith Jacobs

    B: yeah thank god you added in Judith she'd've been so upset

    C: **what with her photograph not being cr\edited**

    B: well no no no no no no no it's because I the picture was me stood in front of these two paintings because they're life-sized (LLC–2)

According to Põldvere & Paradis (2019, 2020), this construction has a set of key properties, which we briefly summarize below and return to in section 2. First, it never appears discourse-initially. Note that in each example above, there is a linguistic antecedent (some part of) which the reactive *what-x* construction is a reaction to. Second, the slot that follows *what* may be filled by a range of syntactic categories: S, NP, PP, VP or CP. The first three are illustrated by examples (1)–(3), respectively. Third, the reactive *what-x* construction is a matrix-clause phenomenon with a distinct intonation pattern: *what* and the phrase following it belong to a single tone unit, which we indicate by the absence of a tone unit boundary between them in the examples above and elsewhere. To these general properties we add two more. The entire construction distributes like the syntactic category following *what*. In (1), for instance, it distributes like a matrix clause and in (3) it corresponds to the PP complement of *upset*, suggesting that the grammatical function of *what* is that of an adjunct. This observation is both relevant for the analysis we spell out in section 5 and a departure from Põldvere & Paradis (2020), who propose a head–complement structure for the reactive *what-x* construction, with *what* serving as the head. Finally, *what* itself seems to have little interrogative meaning, which instead is associated with the entire construction's function as an interrogative utterance. As we will see below, our data can be classified as either reprise (i.e. clarificational) or direct (i.e. non-reprise) utterances, which brings it in line with the classification Ginzburg & Sag (2000) propose for interrogative clauses.

What we are concerned with here is a specific kind of phrase that follows *what* in well over half of our data. It has thus far escaped notice that the reactive *what-x* construction hosts ellipsis, that is, phrases that seem syntactically incomplete. This is illustrated in (2)–(3). The phrases that follow *what* are utterances smaller than sentences (i.e. an NP in (2) and a PP in (3)), but they still receive sentential interpretations on the basis of the

annotations are provided in the constructions of interest; they are based on the British tradition of intonation analysis (Cruttenden 1997) where / indicates a rising nuclear pitch accent, \ a falling nuclear pitch accent and # a tone unit boundary.

preceding context. We demonstrate that such examples of the reactive *what-x* construction have all the relevant characteristics of what we more generally term fragments here (we spell out the characteristics of fragments in section 4) and argue that they are analyzable as either reprise or direct fragments. To anticipate our proposal, it is an analysis of the reactive *what-x* construction drawing on Ginzburg & Sag's (2000) constructional Head-driven Phrase Structure Grammar (HPSG) account of a comprehensive network of interrogative constructions, which includes both elliptical (fragments) and nonelliptical ones, the former analyzed as genuinely non-sentential utterances.

The rest of this article proceeds as follows. In section 2, we elaborate on the properties of the reactive *what-x* construction that are familiar from previous research. Section 3 describes our corpus data, along with the criteria for selecting the relevant instances of the reactive *what-x* construction. In section 4, we present our reasons for arguing that a large portion of our data instantiates ellipsis and that these examples are classifiable as reprise or direct fragments. We offer a theoretical analysis of them in section 5, based on Ginzburg & Sag's (2000) non-sententialist (also known as direct-interpretation) approach to ellipsis, that is, one where fragments are generated 'as is' as opposed to the sententialist approach generating them from underlying sentential sources via operations like movement and deletion (Merchant 2001, 2005). Section 6 concludes.

2 Properties of the reactive *what-x* construction

During the compilation of the *London–Lund Corpus 2* (LLC–2) of spoken British English, Põldvere & Paradis (2019, 2020) isolated a construction that had not previously been noticed in the literature. To reflect its idiosyncratic syntactic and dialogic properties in conversation, the construction has come to be known as the reactive *what-x* construction, a conventionalized unit in English. What differentiates the reactive *what-x* construction from other interrogative constructions in English is that *what* connects directly with the phrase following it. As mentioned in the Introduction, the two elements always form one and the same tone unit with the nuclear pitch accent falling somewhere on the latter element (for more detail, see Põldvere & Paradis 2020: 319). In examples (1)–(3) above, the falling nuclear pitch accent is on the last lexical words of the utterances (*sl\eep*, *\open*, *cr\edited*). This intonation pattern sets the reactive *what-x* construction apart from, specifically, the pragmatic marker *what* (4), and split questions (5).

(4) A: what are you going to play us
     B: I was looking for those Indian records we've got
     C: **wh\at** # Panna Lal G/osht
     A: no no not Panna Lal Gosht (LLC–1)
(5) A: uhm general thing I would say about getting yourself out of the defensive mode is
     if you can sprinkle a few rewards around yourself then that is a very good way of
     engaging

B: **wh\at is that # ch/ocolate** # what do you mean
A: well <pause/> do you know it kind of so <pause/> the reward system <pause/> does respond to food (LLC–2)

The pragmatic marker *what* produced by speaker C in (4) looks very similar to the reactive *what-x* construction with one non-trivial exception: *what* is separated from the following phrase by a tone unit boundary (#). This means that *what* is prosodically and interactionally prominent, expressing speaker stance, particularly, surprise, incredulity and positive or negative emotion (Lutzky 2012), and the fragment that follows it should be analyzed in its own right. Split questions such as the one produced by speaker B in (5) have a bipartite prosodic structure constituted by two separate tone units, and are used to make a guess (Arregi 2010; Michaelis & Feng 2015).

Furthermore, the reactive *what-x* construction is used as a prompt reaction to what an interlocutor says in a preceding turn to negotiate and call it into question. The construction thus presupposes the presence of a preceding turn by another speaker, which becomes most relevant in spoken dialogue. For instance, in (6) this meaning potential is exploited to give rise to a specific dialogic function, namely, to verify a referent in the preceding turn, which is the reason for speaker B feeling creeped out (see Põldvere & Paradis 2019, 2020 for the classification of the construction based on dialogic function).

(6)   A: okay I don't really know what to expect
      B: I'm a bit creeped out by this
      A: **what the the fact that we're playing Minecraft** times are getting desperate you know few monetisations
      B: it is really (LLC–2)

Examples like (6) could also be analyzed as other-initiated self-repairs (Schegloff *et al.* 1977), a category familiar from the framework of Conversation Analysis, to solve a difficulty in conversation. On the surface, *what the fact that we're playing Minecraft* looks like an other-initiated self-repair used to perform a non-serious action such as a tease (Kendrick 2015); however, since speaker B does not actually accept or reject what speaker A has said, its status as a genuine repair is unclear. The extent to which the reactive *what-x* construction is used as a repair in conversation is not part of Põldvere & Paradis' (2019, 2020) analysis either.

Based on the form–meaning properties of the reactive *what-x* construction, Põldvere & Paradis (2020) propose a constructional representation, in line with the basic tenets of Construction Grammar (e.g. Fillmore *et al.* 1988; Croft & Cruse 2004; Fried & Östman 2005; Goldberg 1995, 2006; Linell 2009; Hilpert 2014). This representation is given in figure 1.[3]

In addition to what has already been mentioned above, figure 1 reveals a distinction between internal formal structure and external formal structure. While the internal

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[3] A more comprehensive constructional representation, including the classification by dialogic function, is given in Põldvere & Paradis (2020: 327).

Form	Internal	# *what* X$_{\text{phrase or clause}}$ #
	External	Obligatory preceding turn by another speaker, subsequent turn is more flexible
Meaning		Reacts to something in the preceding turn, negotiates and calls it into question, conveys immediacy and urgency, occurs in (informal) spoken dialogue

Figure 1. Constructional representation of the reactive *what-x* construction (Põldvere & Paradis 2020: 327). The symbol # indicates a tone unit boundary.

structure relates to the syntactic and prosodic properties of the construction, the external structure is concerned with the sequential placement of the construction in the surrounding discourse. As mentioned in the Introduction, the representation in figure 1 assumes that *what* is a head followed by a complement. The complement may be of any syntactic category and there is nothing here to separate out elliptical from nonelliptical complements, the latter ranging over polar interrogative clauses, in-situ interrogative clauses, and, rarely, declarative clauses (see section 3 for descriptive statistics). In contrast, our focus throughout is specifically on fragments as distinct from nonelliptical phrases used in the reactive *what-x* construction. This also means that, for the purposes of this article, we ignore constructions that can be seen as related to the reactive *what-x* construction in various formal ways, such as the pragmatic marker *what* we saw illustrated in (4). An overview of these constructions and relationships among them can be found in Põldvere & Paradis (2019).

3 Data

Following Põldvere & Paradis (2019, 2020), we extracted our data from the London–Lund Corpora of spoken British English, consisting of LLC–1 (Svartvik & Quirk 1980; Greenbaum & Svartvik 1990) and LLC–2 (Põldvere *et al*. 2021). An important difference from the earlier work is that the data in this study are from complete corpora rather than subsets of spontaneous face-to-face conversation. This gives us access to the reactive *what-x* construction from a diverse range of discourse contexts. For instance, example (6) above is part of the new data. Both LLC–1 and LLC–2 contain around 500,000 words (one million words in total) of spoken dialogue and monologue recorded with educated adult speakers of British English. There are seven broad discourse contexts: face-to-face conversation, distanced conversation, broadcast media, parliamentary proceedings, spontaneous commentary, legal proceedings and prepared speech. The recordings are from a time period covering approximately sixty years, from the 1950s to the 2010s, thus giving us a good overview of the behavior of the reactive *what-x* construction, and its relationship to other constructions, in present-day English. The corpora were accessed via the online corpus interface Corpuscle (LLC–1;

Meurer 2012) and offline XML files (LLC–2), alongside corresponding audio files. We searched the corpora automatically to find all instances of *what* and found a total of 5,388 of them (2,723 in LLC–1 and 2,665 in LLC–2). Access to the audio files of the LLCs, and therefore to the prosodic information of *what*-constructions, proved useful in identifying the reactive *what-x* construction and excluding superficially similar constructions like the pragmatic marker *what* and split questions. Thus all the *what*-constructions that exhibited the syntactic structure of the reactive *what-x* construction were subject to close auditory and instrumental analysis, the latter of which was conducted in the phonetics software Praat (Boersma 2001). Only those constructions where *what* was realized as an unaccented pre-head of the tone unit, with a nuclear pitch accent somewhere in the following element, were included. In the end, we identified 61 instances of the reactive *what-x* construction.

Our sample contains 15 instances of nonelliptical phrases following *what*. Among them, there are 7 instances of in-situ interrogative clauses (see example (1)), 5 instances of polar interrogative clauses (7) and 3 instances of declarative clauses (8). As these data are not the focus of our article, we do not discuss them further with the exception of footnote 9.

(7) A: well I think they've got lots of toys and stuff so
     B: is it <pause/> **what did you have a look in John Lewis or**
     A: mm (LLC–2)
(8) A: well as long as it's not mathcore again
     B: I like mathcore
     A: it was terrible <vocal desc="laughs"/>
     B: it wasn't terrible **what you liked all of them**
     A: the first three no I didn't the first three were terrible (LLC–2)

The remaining items are 45 instances of fragments (phrases smaller than a sentence) and one instance of Verb Phrase ellipsis (VPE). The latter is shown in (9).

(9) A: but what about Nuffield Leisure they're a very posh gym they've taken over they've taken
        over the one in Moorgate that's like […]
     B: they won't do it they won't do it you you
     A: **what they won't** <pause/> but they have but they have in their foyer they have (LLC–2)

Unlike fragments, VPE produces a sentential structure, but the VP is seemingly incomplete, as it appears to consist only of a stranded auxiliary. The fragments' syntactic categories range over NPs, PPs, VPs and CPs; their counts are given in table 1.

We have illustrated NPs in examples (2) and (6) and PPs in (3). A CP and a VP are illustrated in (10) and (11), respectively.

(10) A: I started falling asleep a little bit in the middle yeah the cornflake one was good
     B: did you really <pause/> **what cause you were knackered <pause/> or cause it was
        boring**
     A: cause I was knackered and it was boring (LLC–2)

Table 1. *Counts for all syntactic categories of fragments in our data sample*

Fragment syntactic category	Frequency
NP	25 (55.6%)
PP	15 (33.3%)
CP	3 (6.7%)
VP	2 (4.4%)
Total	45 (100%)

(11) A: I must tell Michael, I haven't told Michael, he proposes to go to Manchester on Thursday Catrina

    B: **what and leave you to move**

    A: no I'm moving on Friday (LLC–1)

We take a closer look at fragments in the next section.

4 The reactive *what-x* construction as fragments

In this section we turn to a property of the reactive *what-x* construction that has never been addressed before, namely the fact that a large portion of its uses feature ellipsis. Recall that we have extracted the total of 46 (75.4%) instances of ellipsis out of 61 instances of the reactive *what-x* construction (but we exclude our one instance of VPE from the counts for fragments in this section and return to it in section 5.3). Why should we define these instances as elliptical? First, their syntax is apparently incomplete in the sense that the phrases following *what* look non-sentential, resembling a type of ellipsis known as fragments. Second, these examples have sentential semantics despite the unusual syntax: they are fully equivalent to what their sentential counterparts would mean, but their resolution requires access to the preceding context, which we henceforth term antecedent, following the literature on ellipsis. Such apparently incomplete syntax and context-dependence are two hallmarks of ellipsis. We concede that this definition of ellipsis is firmly entrenched in work within theoretical syntax, and not at all so in work focused on spoken interaction (e.g. Goodwin 1995; Jacoby & Ochs 1995; Lerner 2004). This is purposeful, as we offer a novel theoretical analysis of the reactive *what-x* construction as an instance of ellipsis according to the definition above, though we do not assume the syntax of fragments is incomplete in any way, given our non-sentential approach.

We next address four further features that align the reactive *what-x* construction more closely with fragments: the presence of a correlate in the prior context, uses as either merger or sprouting, an ability to drop prepositions, and uses as reprise or direct utterances (these four features are also summarized in table 2).

The first feature is the presence of a correlate for the phrase preceded by *what*. A correlate is a phrase found in the antecedent that is associated with a fragment. For instance, the fragment in (12) is associated with the PP *About it*, serving as its correlate.

(12) A: He's sorry about it.

    B: **About what?**

Table 2. *Summary of the shared properties of the reactive* what-x *construction and fragments*

Property	Reactive *what-x* construction	Fragments
Correlate in prior context	√	√
Merger and sprouting uses	√	√
Preposition omission	√	√
Reprise and direct uses	√	√

Every fragment has a correlate to be associated with this way, which constitutes the basis for retrieving its sentential semantics: after a fragment has been paired with its correlate, it can be integrated into the proposition expressed by its antecedent (Culicover & Jackendoff 2005; Harris & Carlson 2019; Nykiel *et al.* 2023).[4] That the reactive *what-x* construction parallels fragments in this respect is clear from (13), where the correlate is the NP headed by the pronoun *it* in the antecedent.

(13) A: you fancy it yourself do you
    B: **what the men's doubles**
    A: yeah (LLC–1)

But correlates do not have to be overt phrases, which brings us to the second feature.

Phrases preceded by *what* may pick out overt or covert correlates, just like fragments. A covert correlate is illustrated in (14).

(14) A: I've had so many emails asking me the same question
    B: **what today**
    A: today (LLC–2)

The NP following *what* is associated with an unexpressed adjunct in the antecedent (see also example (3) for a PP following *what* and taking as its correlate a PP complement to the adjective *upset* located in the antecedent). The configuration where fragments pick out covert correlates is referred to as sprouting, while the one where they pick out overt correlates is known as merger. We can manipulate example (12) to illustrate sprouting with fragments, as in (15): now the fragment picks out a covert PP complement to *sorry*.

(15) A: He's sorry.
    B: **About what?**

The distribution of sprouting versus merger in our data is 17 (37.7%) and 28 (62.3%), respectively.

Related to the sprouting-merger distinction is the third feature, the possibility of omitting prepositions from fragments. Consider an NP variant of the fragment in (12), depicted in (16).

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[4] There has been some discussion in the literature on ellipsis of how to identify correlates for fragments and what size they may be (see e.g. Culicover & Jackendoff 2005; Ginzburg 2012; Nykiel & Hawkins 2020; Nykiel & Kim 2022).

(16) A: He's sorry about it.
   B: **What?**

The NP *what* in (16) has the interpretation that the PP *about what* does in (12), i.e. *What is he sorry about?*, even though the preposition is omitted, which is a grammatical possibility.[5] The possibility of omitting prepositions from fragments is limited to merger, a constraint that was first noted by Chung (2006). In other words, prepositions may be omitted from fragments only if they have been realized overtly in the antecedents. Thus the fragment in the sprouting example in (15) is required to be a PP, with no possibility of omitting the preposition. Like fragments, the reactive *what-x* construction permits omission of prepositions in merger, but not in sprouting environments. Example (17) illustrates this (note that the preposition omitted by speaker B and present in the antecedent is *to*).

(17) A: I am going to your neck of the woods did I tell you that
   B: **what Gloucestershire**
   A: yeah (LLC–2)

The reactive *what-x* construction closely tracks fragments not only with respect to when prepositions are omitted, but also how often. There are altogether eight environments where prepositions could have been omitted and actually were 87.5 percent of the time (i.e. seven out of eight times). For comparison, prepositions are omitted just under 70 percent of the time in spoken US English fragments (Nykiel & Hawkins 2020).

Finally, the set of uses of the reactive *what-x* construction ranges over reprise and direct utterances. All uses of fragments fit into this binary classification described in detail in Ginzburg & Sag (2000). We begin by briefly summarizing their criteria for classifying both fragments and other interrogatives as reprise as opposed to direct.

Reprise utterances are interrogatives that serve to request clarification of a part of a previous utterance. Typical reasons for their use are failure to hear the part that is being clarified (this type is called echo questions) and failure to understand the reference of the part that is being clarified (this type is called reference questions). Both types are illustrated in (18)–(19) for nonelliptical utterances (adapted from Ginzburg & Sag 2000: 260). Speaker B's utterance in (18) is an echo question on the assumption that B failed to hear the name *Jan* correctly. B's utterance in (19) is a reference question in the sense that the reference of the pronoun *them* is unclear to B although they heard the pronoun itself correctly.

(18) A: Chris is annoyed with Jan.
   B: **Chris is annoyed with who(m)?**
(19) A: Chris is annoyed with them.
   B: **Chris is annoyed with who(m)?**

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[5] The fragment in (16) has another, reprise, interpretation as well, i.e. *What did you just say?,* but this is irrelevant for us here.

The syntax of nonelliptical reprise utterances typically involves in-situ *wh*-phrases, as is the case in (18)–(19), but this is not mandatory.[6] Although it is beyond the scope of this article to go into the formal semantics of reprise utterances, we would like to mention that it departs in only one way from the semantics of other interrogatives: their semantics partially overlaps with that of the immediately preceding utterance (for more detail, the reader is referred to Ginzburg & Sag 2000; Ginzburg & Cooper 2004; Ginzburg 2012). This brings us to the second category of interrogatives, direct utterances. We agree with Ginzburg & Sag (2000) that these are all other interrogatives that do not express clarification requests.

When used as reprise utterances, fragments have two main readings. These are clausal confirmation and intended content readings, both falling into the category of reference questions (Ginzburg & Cooper 2004; Ginzburg 2012; Ginzburg & Kolliakou 2018). We exemplify them in (20)–(21), from Ginzburg & Kolliakou (2018: 348), along with the immediately following context to help disambiguate the readings. The fragment shown in (20) has a clausal confirmation reading, paraphrasable as *Are you asking if I ever play with Mark?*. This class of readings represents a request for confirmation of how the constituent repeated in the fragment fits into the proposition expressed by the preceding utterance. The fragment in (21), on the other hand, has an intended content reading, that is, it queries the reference of the NP *Adam* in A's preceding turn. This reading is paraphrasable as *Who is Adam?* or *Who do you mean Adam?*.

(20) A: Do you ever play with that wee boy Mark that lives next door to me?
    B: **Mark?**
    A: Yes, does he come up?
    B: He doesn't play with me. He doesn't know me.

(21) A: Because it belongs to Adam.
    B: **Adam?**
    A: Adam's my little boy.

We should note at this point that some fragments solely consist of, or host, *wh*-phrases, and have sentential semantics equivalent to *wh*-interrogatives. We saw some examples of *wh*-phrases used either alone as fragments or as complements within PPs that were fragments in (12) and (15)–(16) above; this class of fragments is referred to as sluicing, a term going back to Ross (1969). Sluicing often functions as reprise utterances, and when doing so, it conveys intended content readings in the sense that the hearer is requesting clarification of some aspect of the content of an utterance present in the prior context. In (22), from Ginzburg & Kolliakou (2018: 345), the referent of the pronoun *he* is being clarified.

(22) A: What a useless fairy he was.
    B: **Who?**

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[6] The reverse, that not all in-situ clauses are reprise utterances, also holds (see Ginzburg & Sag 2000: 280–9 for more detail and examples).

Even though we have not observed any instances of reprise (or non-reprise) sluicing among our instances of the reactive *what-x* construction (these would be realized as *what* followed by another *wh*-phrase), we cannot rule out that they are possible.

We classified our data as either reprise or direct utterances, the latter understood as exhibiting no clarificational properties. We identified 28 (62.3%) reprise uses and 17 (37.7%) direct uses among the 45 fragments (the one example of VPE was also classified as reprise (clausal confirmation)). This result strongly suggests that the reactive *what-x* construction is biased towards reprise utterances.

It is interesting to note that the distribution of reprise versus direct uses and of merger versus sprouting is the same. In fact, all the sprouting cases of the reactive *what-x* construction were classified as direct utterances and the merger cases as reprise utterances. This follows from the fact that in sprouting environments the hearer has clearly not failed to understand the prior utterance. Consider the reactive *what-x* construction produced by A in (23). It is clear that speaker A has understood B's response and is requesting additional information, and hence their utterance is direct. This is also the case for the remaining instances of sprouting in our data.

(23) A: do you do you drive
    B: no I'm too short-sighted to drive […]
    A: **what with glasses** you can wear glasses
    B: oh yes I wear them but I'm ever so short-sighted even with glasses on (LLC–1)

In contrast, merger environments open themselves up to clausal confirmation readings in our data. Various constituents in antecedent clauses are queried by being paraphrased or expanded upon in reprise utterances, but never by being repeated verbatim. To see this, consider (24)–(25). The constituent in speaker B's utterance in (24) that is being paraphrased by A is the pronoun *that*. Similarly, the NP *the extension* in speaker A's utterance in (25) is being expanded upon by B.

(24) A: they're all worried <unclear/> he's going to drop dead <pause/> having had two heart
      attacks <pause/> rightly […]
    B: how can we tactfully acknowledge that in the session with him there
    A: **what that they're worried**
    B: that they're worried he's gonna drop dead (LLC–1)
(25) A: but this museum is double the size of Tate Modern even with the the uh the extension
    B: **what the extension that's not open**
    A: yes (LLC–2)

We classified the readings of all 28 reprise examples as clausal confirmation, given that all of them are paraphrasable as polar questions of the type *Are you referring to X?*. However, we acknowledge that reprise fragments in general are regularly ambiguous between clausal confirmation and intended content readings (see Ginzburg & Cooper 2004). Ginzburg & Cooper (2004) also point out that one diagnostic for teasing these readings apart are weaker identity requirements (i.e. morphosyntactic category, but not necessarily segmental, identity between the fragment and the constituent being queried) that clausal

confirmation readings have compared to intended content readings. We are seeing this pattern in our data as well: none of the 28 instances exhibit segmental identity. Whether an intended content or a clausal confirmation reading is involved in every case has no bearing on our syntactic analysis of the reactive *what-x* construction to be presented shortly, but it does impact the construction's semantics. Table 2 summarizes the four properties of the reactive *what-x* construction we have discussed, comparing them with fragments.

Having now established that there are good reasons for assimilating the reactive *what-x* construction to fragments, we turn to our theoretical analysis of it in the next section. Because we are concerned with the elliptical side of this construction, we do not extend our analysis to uses not involving any ellipsis here (but see footnote 9).

5   Analysis

The ingredients of our analysis come from Ginzburg & Sag (2000), who articulate a constructional Head-driven Phrase Structure Grammar (HPSG) analysis of a wide range of interrogative constructions, including of reprise and direct fragments. The analysis of both reprise and direct fragments that Ginzburg & Sag (2000) propose is non-sententialist in the sense that the syntax of fragments does not involve unpronounced structure at any level. It is also the kind of theoretical analysis reprise fragments typically attract (see Ginzburg & Cooper 2004 and Ginzburg 2012 for other non-sententialist analyses, and see Griffiths *et al.* 2023 for a recent attempt at a sententialist analysis of reprise fragments), a tradition we continue in the spirit of here. But it is fair to say that, besides the bias toward, and a well-developed formalism of, non-sententialist approaches to reprise versus direct fragments, there is nothing about our current data that would motivate non-sententialist approaches to ellipsis over sententialist ones more generally.

We begin by presenting Ginzburg & Sag's (2000) non-sententialist approach to fragments preceded by a brief introduction to the main tenets of constructional HPSG (for more detail, see Sag 1997; Ginzburg & Sag 2000; Sag 2012).
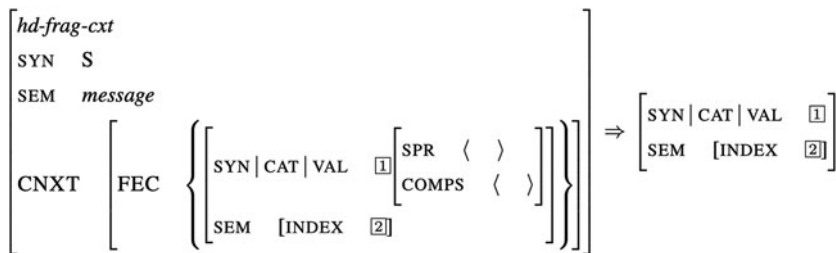
5.1   Fragments in constructional HPSG

In constructional HPSG linguistic expressions are defined as signs. These range from words to phrases (to be precise, phrases are configurations of signs termed constructs) and are modeled as feature structures carrying phonological, morphological, syntactic, semantic and contextual information. Given that signs and families of signs often have shared features, generalizations over such shared features are captured via type hierarchies. Each family of signs or constructs in a hierarchy must satisfy the constraints imposed on it as well as any constraints imposed on the type(s) it is a subtype of. It is important to note at this point that any type may belong to, or inherit from, more than one supertype – this is known as multiple inheritance. This property of type hierarchies will be important for our analysis of the reactive *what-x* construction. Finally, we should point out a terminological difference between constructional HPSG and other versions of Construction Grammar, such as Goldberg's Cognitive Construction Grammar (1996,

2006): constructions refer here to constraints that license (configurations of) signs, and not to linguistic expressions understood as pairings of form and meaning, as in Põldvere & Paradis (2019, 2020). We will, however, be using the term constructions to refer to families of constructs and constraints that license them for brevity.

Ginzburg & Sag's (2000) approach to fragments has come to be known informally as a WYSIWYG (what you see is what get) approach. In other words, there is no sentential structure that fragments are embedded in, although they are still analyzed as sole daughters of an S node. The construction that licenses fragments (the head-fragment construction) is given in (26). The version in (26) is a slightly modified version of the construction proposed in Ginzburg & Sag (2000: 304), which goes back to Nykiel & Kim (2022) (for another version, see Abeillé & Kim 2022). Let us now look at the mechanism underlying (26). The mother is an S, allowing fragments to distribute like clauses. There is one daughter, the head daughter, which may be a phrase of any (but typically nonverbal) category, and whose semantics is supplied by the surrounding context in the following way.

(26) Head-fragment construction

$$\begin{bmatrix} \textit{hd-frag-cxt} \\ \text{SYN} \quad \text{S} \\ \text{SEM} \quad \textit{message} \\ \\ \text{CNXT} \begin{bmatrix} \text{FEC} \left\{ \begin{bmatrix} \text{SYN} \,|\, \text{CAT} \,|\, \text{VAL} \quad \boxed{1} \begin{bmatrix} \text{SPR} \quad \langle \ \rangle \\ \text{COMPS} \quad \langle \ \rangle \end{bmatrix} \\ \\ \text{SEM} \quad [\text{INDEX} \quad \boxed{2}] \end{bmatrix} \right\} \end{bmatrix} \end{bmatrix} \Rightarrow \begin{bmatrix} \text{SYN} \,|\, \text{CAT} \,|\, \text{VAL} \quad \boxed{1} \\ \text{SEM} \quad [\text{INDEX} \quad \boxed{2}] \end{bmatrix}$$

First, the surrounding context represented as the feature CNXT in (26) supplies the attribute called the focus-establishing constituent (FEC).[7] The FEC serves as a fragment's correlate and constitutes the only locus of information about elements of the antecedent structure, such as syntactic category, case specifications and argument structure. Ginzburg & Sag's (2000) head-fragment construction requires syntactic category identity between a fragment and the FEC, but later research has demonstrated that this is too strict a requirement and no longer assumes such identity (for detailed discussion, see Nykiel & Kim 2022). The construction in (26) follows Nykiel & Kim (2022) in this respect, requiring only that a fragment and the FEC be saturated phrases and share their semantic index. Being co-indexed with the FEC gives the fragment access to the FEC's morphosyntactic specifications.

The FEC is a sub-utterance of the second contextual attribute, the MAX-QUD. This is the question that is currently under discussion and whose semantics constitutes the basis for interpreting a fragment. On the assumption that the context keeps track of every question that is under discussion and updates as new ones come in, the MAX-QUD is
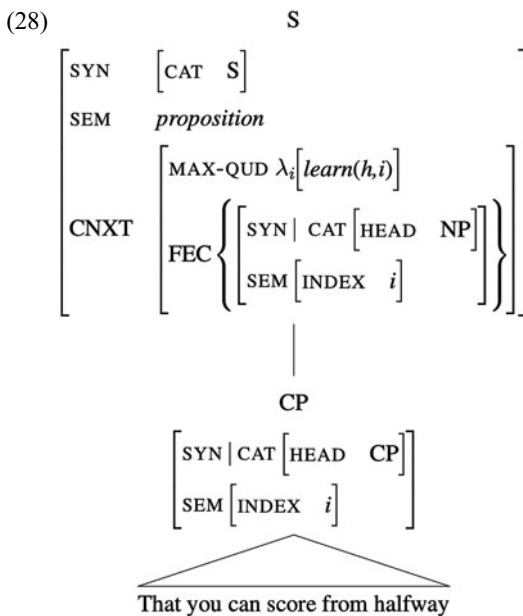
---

[7] In Ginzburg & Sag (2000) this attribute is in fact termed a salient utterance (SAL-UTT), and the FEC is a term later introduced by Ginzburg (2012). The difference is purely terminological.

understood as the most recent question under discussion. For fragments, it typically arises from a preceding *wh*-interrogative, as in (27).

(27) A: What did Harvey learn?

     B: **That you can score from halfway**.

Speaker's A question leaves one element unresolved, the thing that Harvey learned, which serves as the FEC. The fragment in B is matched with the FEC and the proposition it expresses (i.e. Harvey learned that you can score from halfway) is built up from the MAX-QUD. The mechanism underlying the process of matching a fragment and an FEC is known as a direct-access mechanism, that is, a non-serial search for the target phrase among the representations previously stored in memory (Martin & McElree 2011). The morphosyntactic specifications of a fragment are used as retrieval cues in this search (Harris 2015; Nykiel *et al.* 2023), making the morphosyntax of the FEC equally relevant for the search, exactly as predicted by (26). However, notice that the syntactic categories of the fragment and the FEC in (27) do not match, the former being clausal and the latter nominal, a pattern that is allowed by the constraint in (26).[8] Let us now illustrate the non-sentential syntax and semantics of the utterance *That you can score from halfway* in (28) below. If we were to reconstruct this fragment's sentential syntax, it would be an embedded declarative clause (*Harvey learned that you can score from halfway*). Here instead, it is a stand-alone CP, i.e. the only daughter of the S node.

(28)

$$
S
$$

$$
\left[\begin{array}{ll} \text{SYN} & \left[\text{CAT} \quad \text{S}\right] \\ \text{SEM} & \textit{proposition} \\ \text{CNXT} & \left[\begin{array}{l} \text{MAX-QUD } \lambda_i\left[\textit{learn}(h,i)\right] \\ \text{FEC}\left\{\left[\begin{array}{ll} \text{SYN} \mid \text{CAT}\left[\text{HEAD} \quad \text{NP}\right] \\ \text{SEM}\left[\text{INDEX} \quad i\right] \end{array}\right]\right\} \end{array}\right] \end{array}\right]
$$

$$
\mid
$$

$$
\text{CP}
$$

$$
\left[\begin{array}{l} \text{SYN} \mid \text{CAT}\left[\text{HEAD} \quad \text{CP}\right] \\ \text{SEM}\left[\text{INDEX} \quad i\right] \end{array}\right]
$$

That you can score from halfway

---

[8] See Wood *et al.* (2020) and Nykiel & Kim (2022) for more crosslinguistic examples of fragments and FECs mismatching in syntactic category, and further for arguments that such mismatch is delimited by the argument structure of the lexical head that subcategorizes for the FEC. To see this, consider that the verb *learn* in (27) permits both nominal and clausal complements, and hence either a nominal or clausal fragment would be licensed here.
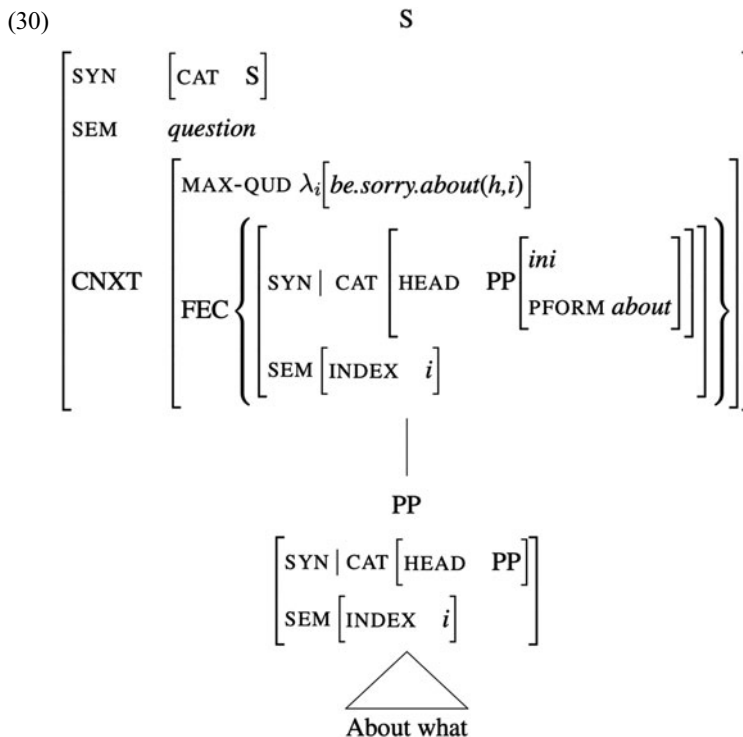
Besides the information about the FEC, we have spelled out the propositional semantics of the fragment, which is built up from the MAX-QUD supplied by the antecedent in (27), and represented here as lambda abstraction (λ_i [*learn(h,i)*] can be read as the property of being a thing that Harvey learned, but the technical details need not concern us here; the reader is referred to Ginzburg & Sag 2000 and Sag 2010 for more detail on the semantics of different types of clauses).

Recall from section 4 that fragments take overt or covert correlates, the latter environment called sprouting. The fragment whose structure we illustrated in (28) has an overt correlate, that is, the FEC is an overt phrase. But consider example (15) again, repeated here as (29). Recall that the fragment *About what?* has a covert correlate.

(29) A: He's sorry.

     B: **About what?**

A sprouting fragment like this has the structure in (30).

(30)

$$
\begin{bmatrix}
\text{SYN} & \begin{bmatrix} \text{CAT} & \text{S} \end{bmatrix} \\
\text{SEM} & \textit{question} \\
\text{CNXT} & \begin{bmatrix}
\text{MAX-QUD } \lambda_i\begin{bmatrix} \textit{be.sorry.about(h,i)} \end{bmatrix} \\
\text{FEC} \left\{ \begin{bmatrix}
\text{SYN} \mid \text{CAT} \begin{bmatrix} \text{HEAD} & \text{PP}\begin{bmatrix} \textit{ini} \\ \text{PFORM } \textit{about} \end{bmatrix} \end{bmatrix} \\
\text{SEM} \begin{bmatrix} \text{INDEX} & i \end{bmatrix}
\end{bmatrix} \right\}
\end{bmatrix}
\end{bmatrix}
$$

PP

$$
\begin{bmatrix}
\text{SYN} \mid \text{CAT} \begin{bmatrix} \text{HEAD} & \text{PP} \end{bmatrix} \\
\text{SEM} \begin{bmatrix} \text{INDEX} & i \end{bmatrix}
\end{bmatrix}
$$

About what

The difference between (28) and (30) is that the FEC is annotated as an *ini* (for noninstantiated indefinite null) argument in the latter. This solution goes back to Ruppenhofer & Michaelis' (2014) proposal that the list of arguments of a lexical head can include noncanonical arguments that are not realized in the overt syntax. This makes them available for serving as FECs. Thus the mechanism for deriving fragments we have seen so far is able to handle both sprouting and merger cases.

Before closing this section, we turn to Ginzburg & Sag's (2000) type hierarchy of clauses to see which clauses fragments inherit their properties from. The type hierarchy is given in (31) (it is a slightly revised version of the type hierarchy in Ginzburg & Sag 2000: 333).

(31)
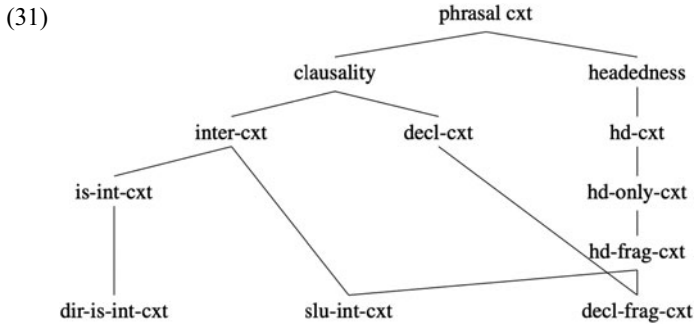
A declarative fragment like *That you can score from halfway* in (27) is analyzed as a decl-frag-cxt (declarative fragment construction). This construction inherits from two schematic types, headedness and clausality, and further down from a decl-cxt (declarative construction) on the one hand, and a hd-cxt (headed construction) on the other. The construction that licenses fragments directly is the hd-frag-cxt (head-fragment construction) we already saw in (26). Notice that the hd-frag-cxt has another subtype, a slu-int-cxt (sluiced interrogative construction), which is also a subtype of an inter-cxt (interrogative construction). The slu-int-cxt licenses direct sluicing, some examples of which we saw in (12) and (15)–(16) in section 4.

When fragments function as reprise utterances they are still analyzed as a hd-frag-cxt, but they are also analyzed as a dir-is-int-cxt (direct in-situ interrogative construction) one level up. In other words, the hd-frag-cxt is analyzed as the head daughter of the dir-is-int-cxt (this structure is shown in (36) below). The dir-is-int-cxt is a subtype of an is-int-cxt (in-situ interrogative construction) and is otherwise used to analyze nonelliptical in-situ interrogative clauses like the bolded utterance in (32).

(32) A: I'm too short-sighted to drive.
     B: **You're too short-sighted to drive even with glasses?**

These are separate from reprise nonelliptical in-situ interrogative clauses like the bolded utterance in (33), which inherit from a different subtype of is-int-cxt, which Ginzburg & Sag (2000: 289) call a rep-int-cxn (reprise interrogative construction).

(33) A: We're leaving for Venus.
     B: **We're leaving where?**

Applying the dir-is-int-cxt to both direct in-situ interrogatives and reprise fragments means that Ginzburg & Sag (2000) do not propose a designated construction type for reprise fragments, although they do so for reprise nonelliptical in-situ interrogative clauses. The reason is that there is nothing about the syntax of reprise fragments that offers cues to their reprise uses; these uses are instead determined by context.

A desirable property of the dir-is-int-cxt with respect to reprise fragments is that it blocks them from being embedded by virtue of having to satisfy the constraints imposed on its supertype, the is-int-cxt, which is specified as [I(ndependent)C(lause) +]. Reprise fragments are not embeddable, and neither are any in-situ interrogative clauses. Furthermore, the dir-is-int-cxt successfully captures a polar-question-like property of reprise fragments associated with their clausal confirmation readings. This analysis extends to direct fragments that also express polar questions and fail to embed, depicted in (34) (for this point, see Ginzburg & Sag 2000: 312).

(34) A: Somebody needs a ride home.
    B: **Harvey**?

Because such fragments do not express propositions, they cannot be licensed the same way declarative fragments are, that is, by the decl-frag-cxt. We assimilate direct uses of the reactive *what-x* construction to polar-question-expressing direct fragments in the next section.

With this mechanism in place, we are ready to analyze the uses of the reactive *what-x* construction with ellipsis.

5.2 *Reactive* what-x *construction with ellipsis*

Our analysis relies on two key assumptions. First, the *wh*-phrase *what* has no interrogative content regardless of the presence of ellipsis. Its contribution to the meaning of the construction could be best described as procedural in the sense of Blakemore (1987), that is, as a guide to the contextual information surrounding the propositional content of the construction. Among linguistic expressions that have been suggested to carry procedural meaning are pronouns, interjections and expletives (Wilson & Sperber 1993; Wharton 2003; Blakemore 2011), as well as parenthetical *what* (Dehé & Kavalova 2006). It seems reasonably clear both from the current data and Põldvere & Paradis' (2020) description of the semantics of the reactive *what-x* construction in figure 1 that *what* is a cue to an upcoming context-dependent utterance, typically a request for clarification of some content in the preceding context. Second, with one exception, the presence of *what* is neither mandatory nor impacts the syntactic or semantic properties of fragments (cf. Põldvere & Paradis 2020: 318), an assumption warranted by the data in table 2, which demonstrate that fragments and the reactive *what-x* construction in fact have identical properties. The exception is that the reactive *what-x* construction may never be embedded, which closely tracks the properties of reprise fragments and direct fragments expressing polar questions rather than

propositions.[9] As we will see below, this property of the construction can be easily captured the same way reprise and direct fragments are analyzed. To put it differently, there is nothing unpredictable about the structure of the reactive *what-x* construction to give us a reason to posit a new construction type to license it in addition to the ones we saw in the type hierarchy in (31).

This analysis is less than fully satisfactory, of course, in that it neither predicts nor explains the distinct intonation pattern of the reactive *what-x* construction with ellipsis. The road we are not taking here would be to propose a new construction type, quite plausibly as a subtype of a hd-adj-cxt (head-adjunct construction), which permits an adjunct to combine with another phrase to form a new phrase whose syntactic category is unaffected by that of the adjunct. In fact, Abeillé & Kim (2022) argue that a subtype of a hd-adj-cxt with a mandatory adjunct and ellipsis, which they call a hd-adj-frag-cxt (head-adjunct fragment construction), is independently motivated for those English fragments that are mandatorily followed by the adverb *too* (i.e. the so-called *me too* fragments*)*. As we have explained above, *what* is optional with fragments, casting doubt on this line of analysis.[10]

---

[9] It has been a much-debated issue whether fragments expressing propositions (i.e. declarative fragments) may be embedded. Ginzburg & Sag (2000) in particular argue that they may not be, and therefore specify the decl-frag-cxt, which licenses such fragments, as [IC +]. However, recent ellipsis literature provides evidence to the contrary (Culicover & Jackendoff 2005; Weir 2014; Abeillé & Kim 2022). An embedded declarative fragment we have found is depicted in (i).

(i) A: so uh the guy we're working with in Goldsmiths <pause/> he's interested in human crocodile interactions <pause/> so he the idea is
B: not crocodiles eating people which is the most usual form of human crocodile interaction
A: uh I think I think <pause/> **I think all human crocodile interactions** (LLC–2)

We license fragments by underspecifying the hd-frag-cxt in (26) for the IC feature in order to rule in both matrix and embedded fragments.

[10] While *what* is optional with fragments, it is not without ellipsis. When *what* combines with nonelliptical polar interrogative clauses (i) or in-situ interrogative clauses (ii) it forces them to be dependent on the preceding context and unembeddable across the board, which is otherwise not the case (for more detail, see Põldvere & Paradis 2020: 318–19).

(i) A: is there any <pause/> backstory to the chestnut spread
B: well it's just chestnut time
A: oh okay
B: of the year isn't it
A: cool
A: do you **what do you put it on bread** or what
B: guess so (LLC–2)
(ii) A: it was good
B: is it appealing
A: almost yeah
B: **what you find that appealing**
A: I thought that I did yeah (LLC–2)

To capture this distinct behavior of the reactive *what-x* construction without ellipsis, we could introduce a new construction type: a subtype of a hd-adj-cxt (head-adjunct construction) that would simultaneously be analyzable as a subtype of an inter-cxt (interrogative construction), with further distinctions based on the type of inter-cxt. We do not explore this possibility any further here as it is beyond the scope of this article.

Let us now see what the structure of the reactive *what-x* construction looks like. *What* is an adjunct combining with a dir-is-int-cxt, whose head daughter is a decl-frag-cxt. Analyzing a decl-frag-cxt as a dir-is-int-cxt is exactly the analysis applied to reprise and direct fragments, which enables us to capture the fact that each of the uses of the reactive *what-x* construction expresses a polar question. We extend this analysis to both reprise and direct uses of the reactive *what-x* construction, leaving it to the context to distinguish between reprise and direct interpretations, as is the case with other fragments. In (36) the structure of the construction is represented schematically for speaker A's utterance in (35). Note that the adjunct *what* selects the head it modifies via the feature MOD (Modified), as indicated by the indices. This is licensed by a hd-adj-cxt (head-adjunct construction), which is a subtype of a hd-cxt (see (31)).

(35) A: do you do you drive
    B: no I'm too short-sighted to drive <pause/ […]
    A: **what with glasses** you can wear glasses
    B: oh yes I wear them but I'm ever so short-sighted even with glasses on (LLC–1)

(36)
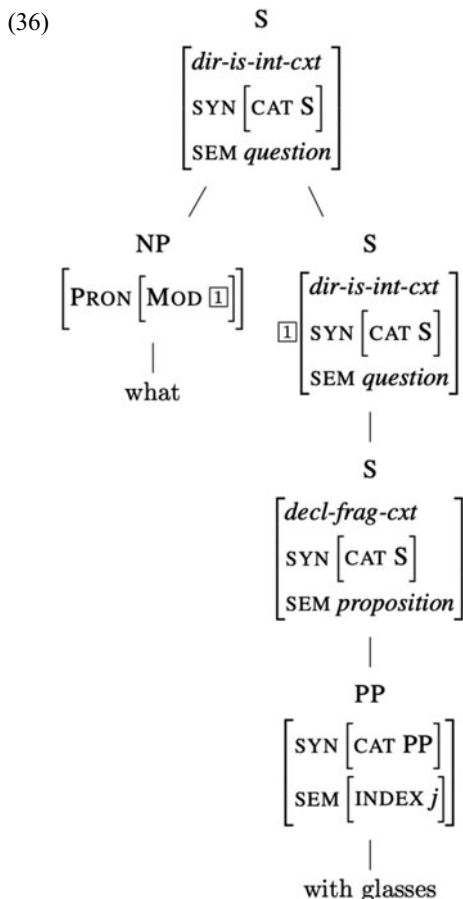
Because the mother, the dir-is-int-cxt, inherits the specification [IC +] from the is-int-cxt nothing else needs to be said about the unembeddability of the reactive *what-x* construction.

Recall from section 5.1 that our theoretical apparatus for licensing fragments can handle both merger and sprouting ones. This enables us to combine *what* with either kind of fragment, correctly predicting the data summarized in table 2. Furthermore, we can license what we referred to as preposition omission in section 4: we can do so by generating fragments the usual way via the hd-frag-cxt and blocking the possibility of omitting prepositions for sprouting fragments with the help of an additional constraint that Nykiel & Kim (2022) introduce for fragments. *What* can then combine with fragments realized as either PPs or NPs (the latter resulting from preposition omission) for merger cases, but not for sprouting cases. Finally, we would like to note that we predict that *what* can combine with fragments representing sluicing, though our current data remain inconclusive with regard to the correctness of this prediction. Reprise sluicing fragments are analyzed in a similar way to the reprise fragments we have seen, and direct sluicing fragments are licensed by a separate slu-int-cxt (see Ginzburg & Sag 2000). If the reactive *what-x* construction permitted sluicing fragments, it would also be analyzable as a slu-int-cxt, and in the reprise case, as a dir-is-int-cxn. Before concluding this discussion, we briefly outline an analysis of the reactive *what-x* construction with VPE.

5.3 *Reactive* what-x *construction with VPE*

Everything we have said so far in this section relates to fragments – the focus of this special issue – but recall that one example of the reactive *what-x* construction features a different type of ellipsis, VPE. Consider this example again in (37).

(37) A: but what about Nuffield Leisure they're a very posh gym they've taken over they've taken over the one in Moorgate that's like […]

    B: they won't do it they won't do it you you

    A: **what they won't** \<pause/\> but they have but they have in their foyer they have (LLC–2)

Given the in-situ syntax and reprise use of this example (recall from section 4 that we classified it as expressing a clausal-confirmation reading), its structure is analyzable as consisting of the adjunct *what* combined with a rep-int-cxt, which licenses reprise nonelliptical interrogatives as a subtype of is-int-cxt (see section 5.1). The rest is rather straightforward. We simply need to license the ellipsis within the VP headed by the negated auxiliary, which will have the desired effect of requiring an antecedent in the surrounding context. Like fragments, VPE is generated without deletion on the non-sententialist approach to ellipsis. The apparently missing complement to the auxiliary is defined as a *pro* expression, absent from the overt syntax but listed on a separate level of representation as one of the arguments required by the auxiliary and dependent on an antecedent for its interpretation (see accessible overviews in Ginzburg & Miller 2018; Kim & Michaelis 2020; Nykiel & Kim 2021; Kim & Runner 2022).

6 Conclusion

Our focus in this article has been on the reactive *what-x* construction intersecting with ellipsis. Based on data from the London–Lund Corpora of spoken British English, we have demonstrated that a large portion of the uses of this construction involve ellipsis, aligning it specifically with fragments. This, we have argued, opens up the possibility of analyzing the reactive *what-x* construction the same way reprise and direct fragments are analyzed in the framework of constructional HPSG in Ginzburg & Sag (2000). We have done so by analyzing the reactive *what-x* construction as consisting of an adjunct combining with a dir-is-int-cxt whose head daughter is a decl-frag-cxt. Our analysis does not require the addition of a new construction to license the reactive *what-x* construction when ellipsis is also involved, but such a move is motivated for cases without ellipsis.

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References

Abeillé, Anne & Jong-Bok Kim. 2022. *Me too* fragments in English and French: A direct interpretation approach. *The Linguistic Review* 39(3), 495–524.

Arregi, Karlos. 2010. Ellipsis in split questions. *Natural Language and Linguistic Theory* 28, 539–92.

Blakemore, Diane. 1987. *Semantic constraints on relevance*. Oxford: Blackwell.

Blakemore, Diane. 2011. On the descriptive ineffability of expressive meaning. *Journal of Pragmatics* 43, 3537–50.

Boersma, Paul. 2001. Praat, a system for doing phonetics by computer. *Glot International* 5(9/10), 341–5.

Chung, Sandra. 2006. Sluicing and the lexicon: The point of no return. In Rebecca T. Cover & Yuni Kim (eds.), *BLS 31: General Session and Parasession on Prosodic Variation and Change*, 73–91. Berkeley, CA: Berkeley Linguistics Society.

Croft, William & Alan D. Cruse. 2004. *Cognitive linguistics*. Cambridge: Cambridge University Press.

Cruttenden, Alan. 1997. *Intonation*, 2nd edn. Cambridge: Cambridge University Press.

Culicover, Peter & Ray Jackendoff. 2005. *Simpler syntax*. Oxford: Oxford University Press.

Dehé, Nicole & Yordanka Kavalova. 2006. The syntax, pragmatics, and prosody of parenthetical *what*. *English Language and Linguistics* 10(2), 289–320.

Fillmore, J. Charles, Paul Kay & Mary C. O'Connor. 1988. Regularity and idiomaticity in grammatical constructions: The case of *let alone*. *Language* 64(3), 501–38.

Fried, Mirjam & Jan-Ola Östman. 2005. Construction Grammar and spoken language: The case of pragmatic particles. *Journal of Pragmatics* 37(11), 1752–78.

Ginzburg, Jonathan. 2012. *The interactive stance*. Oxford: Oxford University Press.

Ginzburg, Jonathan & Robin Cooper. 2004. Clarification, ellipsis, and the nature of contextual updates in dialogue. *Linguistics and Philosophy* 27, 297–365.

Ginzburg, Jonathan & Dimitra Kolliakou. 2018. Divergently seeking clarification: The emergence of clarification interaction. *Topics in Cognitive Science* 10, 335–66.

Ginzburg, Jonathan & Philip Miller. 2018. Ellipsis in head-driven phrase structure grammar. In Jeroen van Craenenbroeck & Tanja Temmerman (eds.), *The Oxford handbook of ellipsis*, 75–121. Oxford: Oxford University Press.

Ginzburg, Jonathan & Ivan A. Sag. 2000. *Interrogative investigations*. Stanford, CA: CSLI Publications.

Goldberg, Adele. 1995. *Constructions: A construction grammar approach to argument structure*. Chicago: University of Chicago Press.

Goldberg, Adele. 2006. *Constructions at work: The nature of generalization in language*. Oxford: Oxford University Press.

Goodwin, Charles. 1995. Co-constructing meaning in conversations with an aphasic man. *Research on Language and Social Interaction* 28(3), 233–60.

Greenbaum, Sidney & Jan Svartvik. 1990. The London–Lund Corpus of Spoken English. In Jan Svartvik (ed.), *The London–Lund Corpus of Spoken English: Description and research*, 11–59. Lund: Lund University Press.

Griffiths, James, Güliz Güneş & Anikó Lipták. 2023. Reprise fragments in English and Hungarian: Further support for an in-situ Q-equivalence approach to clausal ellipsis. *Language* 99(1), 154–91.

Harris, Jesse A. 2015. Structure modulates similarity-based interference: An eye tracking study. *Frontiers in Psychology* 6, 1839.

Harris, Jesse A. & Katy Carlson. 2019. Correlate not optional: PP sprouting and parallelism in 'much less' ellipsis. *Glossa* 4(1), 83.

Hilpert, Martin. 2014. *Construction Grammar and its application to English*. Edinburgh: Edinburgh University Press.

Jacoby, Sally & Elinor Ochs. 1995. Co-construction: An introduction. *Research on Language and Social Interaction* 28(3), 171–83.

Kendrick, Kobin. 2015. Other-initiated repair in English. *Open Linguistics* 1, 164–90.

Kim, Jong-Bok & Laura A. Michaelis. 2020. *Syntactic constructions in English*. Cambridge: Cambridge University Press.

Kim, Jong-Bok & Jeffrey T. Runner. 2022. Pseudogapping in English: A direct interpretation approach. *The Linguistic Review* 39(3), 457–94.

Lerner, Gene H. (ed.). 2004. *Conversation analysis*. Amsterdam: John Benjamins.

Linell, Per. 2009. Grammatical constructions in dialogue. In Alexander Bergs & Gabriele Diewald (eds.), *Contexts and constructions*, 97–110. Amsterdam: John Benjamins.

Lutzky, Ursula. 2012. *Why* and *what* in Early Modern English drama. In Manfred Markus, Yoko Iyeiri, Reinhard Heuberger & Emil Chamson (eds.), *Middle and Modern English corpus linguistics: A multidimensional approach*, 177–90. Amsterdam: John Benjamins.

Martin, Andrea E. & Brian McElree. 2011. Direct-access retrieval during sentence comprehension: Evidence from sluicing. *Journal of Memory and Language* 64, 327–43.

Merchant, Jason. 2001. *The syntax of silence*. Oxford: Oxford University Press.

Merchant, Jason. 2005. Fragments and ellipsis. *Linguistics and Philosophy* 27, 661–738.

Meurer, Paul. 2012. Corpuscle – a new corpus management platform for annotated corpora. In Gisle Andersen (ed.), *Exploring newspaper language: Using the web to create and investigate a large corpus of modern Norwegian*, 29–50. Amsterdam: John Benjamins.

Michaelis, A. Laura & Hanbing Feng. 2015. What is this, sarcastic syntax? *Constructions and Frames* 7(2), 148–80.

Nykiel, Joanna & John Hawkins. 2020. English fragments, Minimize Domains, and Minimize Forms. *Language and Cognition* 12(3), 411–43.

Nykiel, Joanna & Jong-Bok Kim. 2021. Ellipsis. In Stefan Müller, Anne Abeillé, Robert D. Borsley & Jean-Pierre Koenig (eds.), *Handbook of Head-Driven Phrase Structure Grammar*, 847–88. Berlin: Language Science.

Nykiel, Joanna & Jong-Bok Kim. 2022. Fragments and structural identity on a direct interpretation approach. *Journal of Linguistics* 58(1), 73–109.

Nykiel, Joanna, Jong-Bok Kim & Rok Sim. 2023. Case-matching effects under clausal ellipsis and the cue-based theory of sentence processing. *Journal of Linguistics* 59(2), 327–60.

Põldvere, Nele & Carita Paradis. 2019. Motivations and mechanisms for the development of the reactive *what-x* construction in spoken dialogue. *Journal of Pragmatics* 143, 65–84.

Põldvere, Nele & Carita Paradis. 2020. 'What and then a little robot brings it to you?' The reactive *what-x* construction in spoken dialogue. *English Language and Linguistics* 24(2), 307–32.

Põldvere, Nele, Victoria Johansson & Carita Paradis. 2021. On the *London–Lund Corpus* 2: Design, challenges and innovations. *English Language and Linguistics* 25(3), 459–83.

Ross, John R. 1969. Guess who? In Robert I. Binnick, Alice Davison, Georgia M. Green & Jerry L. Morgan (eds.), *CLS 5: Papers from the Fifth Regional Meeting of the Chicago Linguistic Society*, 252–86. Chicago: Chicago Linguistic Society.

Ruppenhofer, Josef & Laura A. Michaelis. 2014. Frames and the interpretation of omitted arguments in English. In Stacey Katz Bourns & Lindsy L. Myers (eds.), *Linguistic perspectives on structure and context: Studies in honor of Knud Lambrecht*, 57–86. Amsterdam: John Benjamins.

Sag, Ivan A. 1997. English relative clause constructions. *Journal of Linguistics* 33(2), 431–84.

Sag, Ivan A. 2010. English filler-gap constructions. *Language* 86(3), 486–545.

Sag, Ivan A. 2012. Sign-Based Construction Grammar: An informal synopsis. In Hans C. Boas & Ivan A. Sag (eds.), *Sign-Based Construction Grammar*, 69–202. Stanford, CA: CSLI Publications.

Schegloff, Emanuel, Gail Jefferson & Harvey Sacks. 1977. The preference for self-correction in the organization of repair in conversation. *Language* 53(2), 361–82.

Svartvik, Jan & Randolph Quirk (eds.). 1980. *A corpus of English conversation*. Lund: CWK Gleerup.

Weir, Andrew. 2014. Fragments and clausal ellipsis. PhD dissertation, University of Massachusetts Amherst.

Wharton, Tim. 2003. Interjections, language and the 'showing-saying' continuum. *Pragmatics and Cognition* 11, 39–91.

Wilson, Deirdre & Dan Sperber. 1993. Linguistic form and relevance. *Lingua* 90, 1–25.

Wood, Jim, Matthew Barros & Einar F. Sigurdsson. 2020. Case mismatching in Icelandic clausal ellipsis. *Journal of Linguistics* 56, 399–439.