WH-Words That Go Bump in the Right

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1. Introduction

American Sign Language (ASL) makes available to its speakers a wide range of WH-question formation strategies, each of which is distinct in terms of the placement and number of WH-phrases in the clause, as shown in (1).[1]

(1) *Which book did Mary read yesterday?*

a. **WH-*in situ***

wh
MARY IX_i READ **WHICH BOOK** YESTERDAY

b. **WH-R**[2]

( ) wh
MARY IX_i READ YESTERDAY **WHICH BOOK**

c. **WH-Double**

wh
WHICH BOOK MARY IX_i READ YESTERDAY WHICH

d. **WH-L**

wh
WHICH BOOK MARY IX_i READ YESTERDAY

This paper focuses on the WH-structures in (1a-c) above and argues that their variability is best understood as the syntactic encoding of semantically distinct WH-question types: WH-*in situ* represents the standard question formation strategy in the language, whereas WH-R encodes the semantic properties associated with clefted questions cross-linguistically (see Madhavan (1987), Cheng (1991), É. Kiss (1998), among others), while the WH-Double encodes a type of emphatic focus (Nunes & Quadros, 2006).[3] In addition to furthering our understanding of how the semantics of cleft structures are cross-linguistically structured, the clefting analysis of WH-R proposed here provides a means of accounting for the ASL question patterns without appeal to otherwise unattested syntactic properties.

2. Background

Initial evidence for the semantic distinguishability of the WH-question paradigm in ASL comes from the fact that the various question formation strategies are not interchangeable but, rather, their acceptability varies with context. The contextual sensitivity of the WH-Double structure in (1c) is

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[1] Glossing conventions adopted here are described in the appendix. Unless otherwise noted, data is from my own fieldwork.

[2] The adverb 'YESTERDAY' used here to delimit the VP is ungrammatical in sentence-final position for some speakers; similar patterns were also found with other VP adjuncts, such as 'FOR CLASS'.

[3] A more complete discussion of the WH question paradigm, including discussion of the WH-L structure, can be found in Abner (2009).

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analyzed by Petronio & Lillo-Martin (1997) as the result of base-generating a WH-element in a focused C-head at the right periphery of the clause.

(2) [$_{\text{Spec-CP}}$ WHICH BOOK] MARY IX$_i$ READ t$_{wh}$ YESTERDAY [$_{C_{+foc}}$ WHICH][4]

In their account, focus also plays a role in the contextual sensitivity of the WH-R structure in (1b), as their account posits for it the same structure as that of the WH-Double, albeit with a null WH-element licensed in the Spec-CP position.[5]

There are, however, three reasons to reject an analysis that conflates WH-R with the WH-Double structure. First, speakers explicitly note that WH-R is not, meaning wise, interchangeable with the WH-Double structure, the latter only being felicitous as an emphatic question. Second, the WH-element in WH-R and the WH-Double cannot be hosted in the same right peripheral position, as full phrasal material is possible in the WH-R structure, but not in the WH-Double.[6]

(3) a. MARY IX$_i$ READ YESTERDAY WHICH BOOK

b. *WHICH BOOK MARY IX$_i$ READ YESTERDAY WHICH BOOK

c. *WHICH MARY IX$_i$ READ YESTERDAY WHICH BOOK

Finally, while each speaker consulted produced and accepted WH-R questions under the right contextual restrictions, two speakers failed to produce or accept any WH-Double structures. A reduced WH-Double analysis of WH-R is, therefore, incapable of accounting for the production of WH-R by these speakers.

Neidle (2002) presents an alternative account of the semantic characteristics of WH-R. Neidle takes as her starting point the rightward movement approach to WH-question formation in ASL pursued by the ASL Linguistic Research Project at Boston University (see Neidle et al. (2000) for a summary of research findings). Acknowledging that their proposed right peripheral placement of Spec-CP in ASL cannot alone account for the semantics of WH-R, Neidle argues that the rightward movement of the WH-element in WH-R is fed by intermediate movement to an IP-internal focus position, as in (4).

(4) [$_{CP}$ [$_{Foc}$ t2$_{WH}$ [$_{IP}$ MARY READ t1$_{WH}$ YESTERDAY] WHICH BOOK]]

The focus movement of the WH-element in WH-R is responsible for what Neidle identifies as the semantic characteristic that distinguishes WH-R from other WH-questions in ASL: the presence of an existential presupposition. This existential presupposition leads to infelicity if met with a negative response, as shown in (5).

(5) a. **WH-R**

Q: IX$_2$ BUY YESTERDAY WHAT

A: #NONE

b. **WH-*in situ***

Q: IX$_2$ BUY WHAT YESTERDAY

A: ✓NONE

While Neidle's analysis provides valuable insight into the semantic distinctions between WH-R and WH-*in situ*, I argue that the infelicity of a negative response to a WH-R question is better understood as the result of the WH-R question being the ASL equivalent of a clefted question, to which negative responses are also infelicitous.

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[4] Non-manual markings, as shown, for example, in (1), have been omitted here and elsewhere when they are not pertinent to the facts under discussion.

[5] See Nunes & Quadros (2006) for a more recent approach to deriving WH-R from the WH-Double; the arguments presented against conflating these two WH-structures hold under this implementation as well.

[6] Petronio and Lillo-Martin support their analysis of WH-R by arguing that phrasal material is, in fact, not grammatical in WH-R. My consultants, however, accepted WH-phrases in the WH-R position; phrasal WH-R has also been reported by Aarons (1994) , Neidle et al. (2000) and Churng (2009).

(6) **Question:** What is it that you bought yesterday?
Answer: #Nothing.

The evidence presented thus far shows that WH-R is distinct from both the WH-Double and the WH-*in situ* question structures. While Neidle attributes this distinction to focus movement of the WH-element, I have argued that the existential presupposition of the WH-R structure, and the resulting infelicity of a negative response, is more compatible with an analysis in which the WH-R question is explicitly understood as the ASL equivalent of a clefted question. Additional investigation into the semantic correlates of WH-R questions, undertaken below, provides further evidence of the parallel between WH-R questions and clefted questions.

3. Cleft-like Semantics of WH-R

Declarative (7a) and interrogative (7b) cleft structures, while cross-linguistically varied in their syntactic instantiation, have a relatively stable set of core semantic properties.

(7) a. It is John that went to the store.
b. Is it John that went to the store? / Who is it that went to the store?

The following discussion takes three semantic properties to be characteristic of cleft structures—existential presupposition, exhaustivity and contrastivity—and shows each property is exhibited by the WH-R structure, in contrast to the WH-*in situ* structure.

3.1. Presuppositions, Revisited

As first observed by Neidle (2002), the speaker asking a WH-R question presupposes that there is a someone or something that is the answer to their question. This existential presupposition was responsible for the infelicity of the negative response in (5). That its status is, in fact, presuppositional is confirmed by (8) below. Here, the necessary contextual suppositions are unavailable and, as a result of this, the very use of the WH-R structure, in contrast to the WH-*in situ* structure, is infelicitous.

(8) **Context:** You are a teacher and you think classwork is more important than homework, so the homework is worth very little in your class. As a result of this, you have one class that never does the homework! Not a single student has ever turned in any of the homework assignments. They are smart kids and have figured out that they can pass without doing it. It's time to collect last night's homework assignment . . .

a. **WH-R:**
#FINISH WORK WHO

b. **WH-*in situ*:**
✓WHO FINISH WORK

c. **Cleft:**
#Who is it that finished the homework?

d. **Non-Cleft:**
✓Who finished the homework?

The English examples provided for the context above illustrate that the contrast between the infelicity of WH-R and the felicity of WH-*in situ* in this context is exactly parallel to the felicity contrast between cleft and non-cleft questions.[7]

3.2. Exhaustivity

The presupposition of the existence of an element that meets the criterion of the cleft predicate does not alone characterize cleft structures. Cleft structures are also characterized by the semantic role of the actual clefted constituent. The clefted constituent in such structures is responsible for identifying

[7] Contrary to early work on the semantics of WH-questions (see Comorovski (1996) for a review), Fitzpatrick (2005) argues that the apparent existential presuppositions of regular WH-questions are reducible to other semantic factors.

the elements that meet the criterion of the cleft and, moreover, exhaustively identifying said elements. The semantic effect of this exhaustive identification is twofold. First, all of the elements that meet the criterion of the cleft are identified and, second, it is maintained that no other element in the domain meets the criterion of the cleft.[8]

For the case of interrogative clefts, appropriate answers are those which share the exhaustivity of the interrogative to which they are a response. The exhaustivity shared by an appropriate answer to a clefted interrogative can, then, be felicitously targeted for correction, as shown by the English dialogue in (9).

(9) **Cleft Dialogue**

Speaker A: What is it that Mary bought John?

Speaker B: She bought him a hat.

Speaker C: ✓No, you're wrong, she bought him a hat and a coat.

Conversely, exhaustivity is not enforced on the answer to non-clefted interrogatives. For this reason, a true, partial answer to a non-clefted interrogative cannot be felicitously targeted for correction, as shown in (10).

(10) **Non-Cleft Dialogue**

Speaker A: What did Mary buy John?

Speaker B: She bought him a hat.

Speaker C: #No, you're wrong, she bought him a hat and a coat.

Notably, the WH-R and WH-*in situ* structures in ASL, (11), display distinct behaviors that again parallel those of cleft and non-cleft questions: the use of a WH-R structure allows a speaker to felicitously correct a non-exhaustive answer, whereas the use of a WH-*in situ* structure does not.

(11) a. **WH-R Dialogue**

Signer A: MARY_{i} BUY FOR JOHN WHAT

Signer B: IX_{i} BUY HAT FOR JOHN

Signer C: ✓NO, WRONG, IX_{i} BUY HAT PLUS COAT FOR JOHN

b. **WH-*in situ* Dialogue**

Signer A: MARY_{i} BUY WHAT FOR JOHN

Signer B: IX_{i} BUY HAT FOR JOHN

Signer C: #NO, WRONG, IX_{i} BUY HAT PLUS COAT FOR JOHN

This behavior is unsurprising if the WH-R structure encodes both the existential presupposition and the exhaustive identification characteristic of cleft structures cross-linguistically.

3.3. Contrastivity

As mentioned above, cleft structures are also associated with the presence of contrast in the context in which they are used, as illustrated by the infelicity of a cleft in an explicitly non-contrastive situation:

(12) Bruno and Eva went shopping . . . #It was Bruno and Eva that bought something.[9]

Contextual contrast also plays a role in the WH-interrogatives in ASL. As the example in (13) shows, WH-*in situ*, while not ungrammatical, is dispreferred to WH-R in a contextually contrastive situation.

[8] I do not here address the semantic status of the exhaustivity of clefts; see Delin (1992), É. Kiss (1998), Halvorsen (1976) and Horn (1981), among many others, for discussion of whether exhaustivity in clefts should be understood as truth-functional, implicated, or presupposed.

[9] This example can be felicitously used if there is some contrast implicit in the context, such as the murder mystery dinner theater example in (i).

(i) Bruno and Eva were with Scheitz when he died, so it must have been Bruno and Eva that killed him.

Cases such as these only solidify the argument that contrast plays a role in the felicitous use of cleft structures.

(13) **Context:** You're sick. Bill, Sue, and John all told me they might come visit you but I have no idea who did.

a. Preferred Order:
VISIT IX_2 WHO
Who is it that visited you?

b. Grammatical, but dispreferred:
WHO VISIT IX_2
Who visited you?

If one assumes that a principle such as Maximize Presupposition (Heim 1991) is at play in conversation, the preference for WH-R in a contrastive context follows from the presuppositions of the WH-R structure. is at play in conversation. If it is contextually presupposed that someone visited the speaker, the use of the WH-R structure explicitly marks this presupposition and is, therefore, preferred. Indeed, given that ASL appears to be a language in which information structure is organized via displacement, this is the only means of explicitly marking this presupposition.

3.4. Conclusion

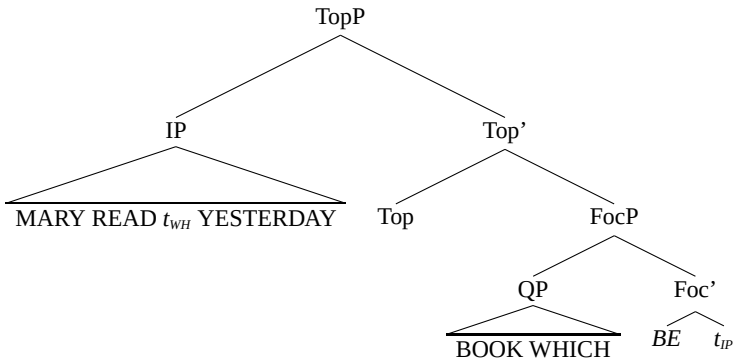
In this section, I have confirmed the presuppositional status of the existential proposition associated with the WH-R structure, which I have argued is better understood as the result of WH-R being the ASL equivalent of a clefted question. In support of this analysis, I have shown that the WH-R structure is distinguished by two additional properties that are characteristic of cleft structures cross-linguistically: exhaustivity and contrastivity. A syntactic analysis of the WH-R cleft is discussed below.

4. Structure of the WH-R cleft

While the semantic properties of the WH-R structure parallel those of clefted structures cross-linguistically, the syntactic similarities are not as clear. Cross-linguistically, cleft structures frequently make use of a relative clause-like structure and a copula or focus particle, as illustrated by the English examples above. The semantic properties of clefts follow straightforwardly from these syntactic constituents: the relative clause triggers the presuppositions of the cleft, while the copula or focus particle encodes exhaustivity and contrastivity.

The WH-R cleft in ASL, however, does not make overt use of either of these constituents. As shown in (14), the WH-R structure instead achieves the semantic properties of a cleft by movement of the WH-element into the specifier position of a focus projection headed by a null copula and topicalization of the remnant IP. Together, these operations, each of which is independently motivated below, capture the exhaustivity, contrastivity and the existential presupposition of the WH-R cleft.

(14)



The initial movement of the WH-element to Spec-FocP is responsible for the exhaustivity and contrastivity of the WH-R cleft, while topicalization of the remnant IP generates the existential presupposition of the cleft, due to the association of topicalized constituents with given, presupposed material.[10] These steps not only provide a semantically motivated account for the atypical right

[10] As noted by É. Kiss (1998), the presuppositions of Hungarian pre-verbal focus movement are achieved via

peripheral placement of the WH-element in the WH-R structure but also account for the frequent appearance of overt non-manual topic marking over the portion of the clause corresponding to the remnant IP, as in (15).[11]

(15) _____t _____wh
MARY READ YESTERDAY, BOOK WHICH
Which book is it that Mary read yesterday?

This analysis provides a straightforward explanation of the semantic properties of the WH-R cleft, appealing only to obvious surface constituents of the WH-R structure and language-specific properties of ASL. Two additional arguments in favor of this analysis are discussed briefly below. In Section 5, I provide data from multiple WH-questions in ASL that further strengthens the parallel between WH-R and clefted questions.

4.1. Additional Evidence for $\emptyset_{Foc/Be}$

The merger of a null copula into the Foc_0 position of the WH-R structure in (14) accounts for the exhaustivity and contrastivity that characterize the WH-R cleft. This step is motivated by two related typological generalizations. Synchronically, copular elements and focus particles are frequently one and the same. Diachronically, copular elements are commonly subject to shift into a focus particle role. The presence of a null copula in the WH-R structure is also motived by independent properties of ASL: it is a null copula language.

Additional support for the role of the null copula in the WH-R structure comes from the strong preference for WH-R in identificational questions.

(16) *Who was the first president of the United States?*

a. $_{fs}$US, PRESIDENT FIRST, WHO
b. #/???$_{fs}$US, WHO PRESIDENT FIRST

(17) *What is your favorite food?*

a. FOOD POSS$_2$ FAVORITE WHAT
b. #/???WHAT FOOD POSS$_2$ FAVORITE

Given that identificational questions of this type request that the interlocutor exhaustively identify the true answer to the question, WH-R is strongly preferred.

4.2. Excursus to declarative rightward clefting

The appearance of productive and frequent clefting of WH-elements in a language naturally leads to the expectation that we will also find productive use of declarative cleft structures in the language. Though Neidle et al. (2000) argued that right displacement is unavailable for non-WH-elements in ASL, Churng (2009) provides examples of non-WH DPs in right peripheral position, with what she analyzes as a focus interpretation.

obligatory deaccenting of the non-focused material. In ASL, where displacement, not prosodic manipulation, is the primary indicator of the information structural role of constituents, topicalization achieves this step. It is, however, worth noting that relative clauses, like topics, are marked by non-manual brow raising in ASL and, moreover, prefer to be in clause-initial position (Neidle 2002). Though I do not pursue a relativization analysis of the WH-R cleft, these observations strengthen the similarity between WH-R and clefted structures.

[11] A similar analysis for right peripheral clefted elements in Japanese and Korean is suggested by Hiraiwa & Ishihara (2002) and Kim & Lee (2008).

(18) foc

HATE JOHN [IX STUDENT]

That student hates John.[12] (Churng 2009)

If such examples are cast in terms of the analysis proposed here, they provide preliminary evidence of the productive use of declarative right peripheral clefting in ASL.

5. Multiple WH-Questions

Constraints on multiple WH-questions in ASL further illustrate the parallel between WH-R and clefted questions. Empirically, many speakers of ASL accept multiple argument questions with *in situ* placement of the WH-elements, as shown in (19).[13]

(19) **Context:** Your friend had a potluck last night.

YESTERDAY, WHO BRING WHAT

Yesterday, who brought what?

While the example provided in (19) is string ambiguous between left peripheral placement of the first WH-element and right peripheral placement of the second, this latter possibility is ruled out by the fact that unambiguous right peripheral WH-elements in multiple WH-questions results in ungrammaticality, as shown in (20).[14]

(20) **Context:** Yesterday, there was a Disney princess event where all the Disney princesses went around kissing things to try to turn them into princes.

Grammatical:

wh

WHO KISS WHAT YESTERDAY

WH-R

*KISS WHAT YESTERDAY WHO[15]

*WHO KISS YESTERDAY WHAT

The observed ungrammaticality of WH-R in multiple WH-questions follows straightforwardly from the clefting analysis of WH-R, given the typological generalization that multiple WH-questions are ungrammatical with cleft structures.

(21) #Who is it that kissed what yesterday?

Semantically, the ungrammaticality of the WH-R cleft in a multiple WH-question will follow from the fact that the open variable associated with the *in situ* WH-element will block the generation of the existential presupposition of the cleft. Syntactically, the topicalization of the remnant IP will prevent the *in situ* WH-phrase from associating with the [+wh] element in the left periphery, a structural freezing effect of the type discussed in Abels (2007) and references therein. The culpability of the *in situ* WH-element in such cases is confirmed by the fact that multiple WH-strings with WH-R are grammatical if the *in situ* WH-element receives an echo interpretation.

[12] Transcription and translation taken from Churng (2009)

[13] For argument-adjunct questions, which behave differently, see Abner (2009) and Churng (2009) for ASL and Kim & Lee (2008) for Korean. A different analysis of multiple WH-questions in ASL is presented in Wood (2007), though the empirical facts reported suggest that dialectal variation is responsible.

[14] Additional data suggests that multiple WH-questions in ASL do, however, allow displacement of a single WH-element to the left periphery of the clause.

[15] The grammatical status of this multiple WH-question without a WH-R element shows that its ungrammaticality cannot be attributed to the sentence-final position of 'YESTERDAY'.

6. Conclusion

While WH-questions in ASL show a large paradigm of variability, semantic properties discussed here argue for a principled distinction between WH-*in situ*, WH-R and the WH-Double. WH-*in situ* structures function as 'regular' WH-questions, while the WH-Double acts as an emphatic question. Finally, the primary claim put forth here is that WH-R is the ASL equivalent of a clefted question, exhibiting the existential presupposition, exhaustivity and contrastivity expected of cleft structures cross-linguistically. The structural analysis proposed for the WH-R cleft—focus movement of the WH-element followed by remnant IP topicalization—captures each of these semantic properties and is independently motivated by the appearance of non-manual topic-marking on WH-R questions and the ungrammaticality of WH-R in multiple WH-questions. Future work should investigate the presence or absence of additional cleft properties of the WH-R structure as well as the compatibility of the analysis presented here with the pseudocleft analysis proposed by Wilbur (1996) for the 'rhetorical question' construction.

7. Appendix: Glossing Conventions

SIGN, SIGN-SIGN	Capitalized words provide English glosses for signs; hyphenated sequences are used where multiple words are necessary to gloss the meaning of a given sign.
$_{fs}$SIGN, S-I-G-N	Fingerspelled loan signs; fingerspelling.
wh _____	Non-manual markings produced simultaneously with the manual stream are indicated via a line over the glossed signs; scope of the line indicates spread of non-manual marking; letters at the end of the line indicate the type of non-manual marking used—here, WH-question marking.
SIGN$_{aspect}$	Verbal inflections, traditionally referred to as aspectual markers.
$_{i}$SIGN$_{2}$	Verbal agreement markings. Subscripted letters (*i*,*j*,*k*) indicate abstract references, while subscripted numbers (*1*,*2*,*3* indicate person).
IX$_{i}$	Pronominal reference (IX for personal pronouns, POSS for possessive pronouns), subscripted as above for inflection.
()	Optionality of manual and non-manual material.

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