keywords: ASL, specificational pseudoclefts, question-answer pairs

On the Syntax and Semantics of Question-Answer Pairs in American Sign Language

Do languages ever encode two typical discourse-level objects like a question and its answer as just one syntactic and semantic unit? In this paper, we argue that they do, at least in American Sign Language (ASL). ASL has a construction (1) consisting of a wh-clause immediately followed by a clausal or non-clausal constituent. We call this structure a Clausal Question-Answer pair (CQA). CQAs have traditionally been analyzed as rhetorical questions **[1]** and more recently as specificational pseudoclefts **[4, 7, 11]**. In this paper, we argue that (i) CQAs are true question-answer pairs both semantically and syntactically (along the lines of **[5]**); (ii) CQAs form a single syntactic unit – a clause; (iii) CQAs contain a silent predicate that takes the wh-clause and the following constituent as its arguments. We end by comparing CQAs with specificational pseudoclefts and concluding that they are separate constructions.

(i) CQAs are true question-answer pairs. The wh-clause in a CQA looks exactly like an interrogative in ASL (except for variation in nonmanual marking: *cqa* in (1) vs. *bf* in (2)) and allows for exactly the same wide range of wh-words as interrogatives (3). From these facts and the well-known fact that wh-words are not allowed in any relative construction in ASL **[6,11]**, we conclude that the wh-clause in a CQA is a wh-interrogative clause and as such it denotes a question. On the other hand, the non-interrogative constituent in CQAs is identical to the (short or full) answer to the question that the wh-interrogative denotes. The full range of answers is allowed in the non-interrogative constituent in CQAs, including non-referential short answers (4-5) and full clausal answers (1, 6).

(ii) CQAs form a clause. There is strong evidence that the question and answer portion of CQAs behave as a syntactic unit, in particular a clause. For instance, (7) shows that CQAs can be embedded as the clausal complement of the main verb (KNOW) and that the main verb can be repeated at the very end of the sentence (after the CQA), a device used in ASL to add emphasis to the whole sentence. If a CQA forms a clause, then its wh-clause must be embedded within it. Independent support for this conclusion comes from the fact that CQAs do not allow for doubling of their wh-word (8), similarly to embedded wh-interrogatives (9), while matrix wh-interrogatives do allow for wh-word doubling (10). Finally, all matrix wh-questions (information-seeking or rhetorical) require brow furrowing, while this is not the case in embedded questions or CQAs ((1) *vs.* (2)).

(iii) CQAs contain a silent predicate. We just saw in (i) and (ii) above that a CQA forms a clause containing a wh-clause (the question) and a non-wh constituent (the answer). What keeps them together syntactically and semantically and allows them to form a clause? In ASL the copula is always silent (11), so we propose that a CQA always contains a silent copula, BE, that syntactically takes the question and the answer as its arguments. Semantically, we suggest that BE requires the question (a set of propositions Q) to contain the answer (a proposition p), building a kind of inverted predicational structure in which the predicate precedes the subject (12). Note that a BE expressing an identity relation, instead of a predicational one, would incorrectly predict the reverse order of the argument to be grammatical as well (13).

CQAs and specificational pseudoclefts. The very same arguments that support our analysis of CQAs as clausal question-answer pairs show that specificational pseudoclefts often do not behave like question-answer pairs (contra **[3,10]**). (i) Unlike CQAs, the range of wh-words that can occur in specificational pseudoclefts is a proper subset of those that occur in interrogatives **[2]**. (ii) Unlike CQAs, the range of post-copular constituents in a specificational pseudocleft is more restricted than in answers: non-referential expressions (14) and most full clauses (15) are judged degraded. (iii) Unlike CQAs, specificational sentences can reverse the order of two arguments (16). These facts are compatible with an alternative analysis of specificational sentences according to which they are just an equation between the pre- and the post- copular phrase as they appear on the surface, and connectivity effects are just a by-product of semantic equation (see **[2, 8]** for relevant discussion).

Conclusions. CQAs in ASL show that languages can encode question-answer pairs below discourse level as syntactic-semantic units. The productivity of this option may vary from language to language. English may have it to a more limited extent (17), as discussed in **[9]**. What emerges clearly from a parallel look at CQAs and specificational pseudoclefts is that a question-answer pair analysis works smoothly for the former, but raises several issues about the latter.

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Data

(1) [JOHN$_i$ EAT WHAT,]$_{cqa}$* (HE$_i$ EAT) PASTA.
"John eats pasta (and nothing else)."

[**cqa* refers to the nonmanual marking (involving eyebrow movement, often brow raising) used in the wh-clause of CQAs (in brackets). We will omit it from the following examples as it is not relevant for our argument, except that it differs from the nonmanual marking in matrix wh-questions.]

(2) Q:[JOHN$_i$ EAT WHAT?]$_{bf\ (brow\ furrowing)}$ A: (HE$_i$ EAT) PASTA
"Q: What does John eat? A: (He eats) pasta."

(3)
a. JOHN EAT WHAT, PASTA.
b. COME PARTY WHO, JOE.
c. LEAVE SHOES WHERE, KITCHEN.
d. JOE COOK WHEN, YESTERDAY.
e. BABY CRY WHY, MOTHER LEAVE.
f. JOHN LIKE WHICH GIRL, MARY.
g. JOHN READ HOW, VERY-FAST.
h. CAR COST HOW-MUCH, $20,000.

(4) JOHN EAT WHAT, EVERYTHING. "John eats everything."

(5) JOHN EAT WHAT, NOTHING. "John eats nothing."

(6) JOHN$_i$ GO HOW, HE$_i$ DRIVE. "John went by driving."

(7) THOSE$_i$ GIRL KNOW THEIR$_i$ FATHER BOUGHT WHAT, CAR KNOW
"Those girls know that what their father bought was a car."

[Notice that the CQA in (7) is a true embedded clause and not a quotation, because the subject of the embedded clause is a third person pronoun that is co-referential with the matrix subject, while in a quotation is would necessarily be in the first person.]

(8) ANN KNOW WHAT JOHN EAT (*WHAT). "Ann knows what John ate." *No wh-doubling*
(9) (*WHAT) JOHN EAT WHAT, PASTA. "John ate pasta." *No wh-doubling*
(10) WHAT JOHN EAT WHAT? "What did John eat?" *OK wh-doubling*
(11) a. CAR RED. "The car is red" b. CAR FERRARI. "The car is a Ferrari"

(12) $\lambda p_{<s,t>}\ \lambda Q_{<<<s,t>,t>}\ BE_{<<<s,t>,<<<s,t>,t>,t>>}(p)(Q)$
(13) JOHN EAT WHAT, PASTA *vs.* *PASTA, JOHN EAT WHAT
(14) What John eats is pasta / #everything / #nothing.
(15) *Where John went was he went to the movies.
(16) Pasta is [what John eats]. (cf. [What John eats] is pasta)
(17) [What I did then] was I called the grocer.

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