Wh-based correlatives in Indo-European and beyond

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It is commonly assumed (e.g., Haudry (1973, 150), elaborated in Heine and Kuteva (2006, 209)) that wh-based subordination develops from indirect questions through headless relative clauses:

(1) 
   a. constituent question: **Who came?**
   b. indirect question: *I don’t know who came.*
   c. indirect question reanalyzable as headless/free RC: *You also know who came.*
   d. headed relative clause: *Do you know the woman who came?*

This explanation clearly does not work for wh-based correlative clauses such as (2) from Latin.

(2) cui testimonium defuerit, is tertii diebus ob portum obvagulatum ito who.dat testimony lack, he.on.the.third.day before door waul.out go.IMP.
   ‘Whoever is lacking a testimony should go every third day to waul out before [the witness’] door.’ (The twelve tables, II.3)

In early IE, such structures are found in Latin and Hittite. Crucially, they are diachronically prior to canonical, headed relative clauses (unlike Germanic wh-relatives, which only secondarily occur in correlative-like structures that we take to be hanging free relatives (Vries 2002, 46)). Correlatives in early IE languages are anaphoric in nature and admit an indirect (bridging) relationship between the wh-phrase and the correlate as in ordinary anaphora, cf. (3) from Hittite.

(3) PÍŠ ga-pár-ta=na=kán ku-in animal:ACC=conj=ptc ku-in rel.acc A-NA to DÙ made EME EM EME ši-pa-an-ta-aš nu uzuNIG.GUG sacrifice conj intestines.acc uzuZAG.UDU ū-ep-pi-ni-it za-nu-zi shoulder.ACC flame.INSTR burn.pres.3s
   ‘He roasts the intestines and the shoulders of the animal which he had sacrificed to the artificial tongue.’ (lit. ‘What animal he had sacrificed to the artificial tongue, he roasts intestines and shoulder with the flame.’) (Probert 2006, 63)

The anaphoric nature of the relationship suggests that wh-based correlatives have a similar origin as to that widely assumed for the (cross-linguistically more common) demonstrative-based correlatives, involving a parataxis-like construction, cf. (4), from Bambara (Givón 2009, 98).

(4) cɛ man rel ye muru san, n ye o ye.
   ‘That man bought the knife, I saw him’ → ‘The man who bought the knife, I saw him.’

But we cannot simply transfer this analysis to wh-based correlatives, because interrogatives do not introduce discourse referents that could provide antecedents for the correlate. Instead, Lehmann (1984, 368–373) assumes that correlatives arise from the grammaticalization of structures where the wh-word is used as an indefinite, schematically as in (5):

(5) ‘Some (lit. ‘which’) man bought the knife, I saw him’

However, there are two problems with this approach.

First, Hittite and Latin do not allow the use of bare interrogatives in declarative root clauses, but restrict them to (a subset of) negative polarity contexts. In Indo-European studies, it is common to reconstruct the root *kʷi/o-* as both interrogative and indefinite, but this is based on Ancient Greek alone: Hittite, Latin, Vedic, Old Church Slavic and early Germanic all restrict the use of the bare *kʷi/o-* interrogative to various negative polarity contexts, although the details differ. It is therefore plausible to reconstruct PIE as having a restricted, or in the terminology of Gärtner (2009) non-robust, indefinite-interrogative ambiguity, which was then generalized in Ancient Greek. This is in line with the observation by Haspelmath (1997) that diachronically, indefinite pronouns tend to increase their scope, e.g. what starts out as a negative polarity indefinite gets generalized to other contexts.

Second, Lehmann’s analysis fails to account for the affinity between correlatives and conditionals that is often observed in the literature (cf. recently Arsenijević 2009). Many correlatives get a
universal reading that is intuitively similar to a conditional: we can paraphrase (2) as ‘If someone is lacking a testimony, he should …’. This generalizing reading does not fall out naturally of the meaning assumed by Lehmann: ‘Someone is lacking a testimony. He should …’

We can solve both these problems once we realize that 1. antecedents of conditionals are one of the environments that license bare interrogatives as indefinites in Latin and Hittite and 2. the conditional structure need not be syntactically encoded but can arise through discourse subordination, cf. Culicover and Jackendoff (1997). Such structures remain productive through the history of Latin and are found with bare interrogatives as indefinites, cf. (6).

(6) negat quis, nemo
deny.prs.3sg rel, deny.prs.1sg
‘If someone denies (it), I deny it.’ (Terence, Eun. 252)

We claim, then, that correlatives grammaticalized out of exactly such structures as (6) (which continued to exist). This explains both why bare interrogatives appear as indefinites and the semantic link with conditionals.

In the subsequent development, structures such as (6), which we take to be asyndetic coordinations, were reanalyzed as adjunct–matrix structures, encoding the semantic dependency in the syntax. The crucial step in establishing correlative structures like (2) and systematically distinguishing them from conditional structures like (6) is the obligatorification of the anaphoric reference in the matrix clause to the indefinite in the correlative clause. We cannot observe this evolution in early IE since it predates the first texts, but the development is entirely parallel to the widely assumed evolution in demonstrative-based correlatives (4), except that we have a donkey anaphora in a quantificational structure rather than ordinary discourse anaphora in parataxis.

This scenario entails an analysis of correlatives along the lines of Srivastav (1991), where the correlative clause is base-generated as an adjunct to the matrix CP and the relationship between the relativized DP and the matrix correlate is anaphoric. However, in many languages with correlatives (including Latin, and maybe Hittite, cf. Probert 2006), the correlative clause can also surface as an adjunct to the matrix correlate. This means that the clause-level adjunct has been reanalyzed as an adjunct to its correlate, opening up the possibility for it to surface in the previously unavailable "base position", and yielding a structure like that assumed by Bhatt (2003).

An interesting prediction of our analysis is that the generalizing reading of wh-correlatives must be primary since the use of interrogatives as indefinites requires discourse subordination and therefore the conditional reading. This means that specific/definite readings must be later developments and we predict that there are no languages where wh-correlatives only have a definite reading. We present a typological study which bears out this prediction. By contrast, we predict that dem-based correlatives, which arise from structures like (4), yield definite readings first, so there should be no languages where dem-correlatives have only generalizing readings. This is again borne out in our typological data. Within Indo-European itself, mood in (cor-)relative clauses point in the same direction: Greek and Vedic, whose relative stem "yo-" is widely assumed be an original demonstrative, typically mark generalizing relative clauses with subjunctive morphology, whereas in Latin, there is no special marking of generalizing relative clauses.