Cross-linguistic patterns in the selectional restrictions of preferential predicates

Summary. Uegaki & Sudo (2019) hypothesise that all non-veridical preferential clause-embedding predicates (e.g., *hope, fear*) are ANTI-ROGATIVE, i.e., they can't take interrogative complements. White (2021) has presented several counterexamples to this claim. The goal of this paper is to enrich the empirical landscape of this debate with cross-linguistic data based on 14 languages, and present potential cross-linguistic generalisations.

Previous literature. In the syntactic/semantic literature, a number of generalisations have been hypothesised concerning correlations between semantic properties and selectional properties of clause-embedding predicates. Although these generalisations are not always stated on the basis of cross-linguistic data, they can in principle be interpreted as cross-linguistic hypotheses. One such generalisation is the following:

(1)   All non-veridical preferential predicates are anti-rogative. (Uegaki & Sudo 2019)

This entails that, e.g., English *hope* and *fear* as well as their cross-linguistic counterparts cannot take interrogative complements (e.g., **hope/fear who left*) while they may be compatible with declarative complements (e.g., *hope/fear that Jo left*). White (2021) pointed out counterexamples to this generalization based on English corpus data, including (2-3):

(2)   a.   I was **hoping whether** you are able to guide me.

b.   I [. . .] was **hoping whether** someone with more experience could confirm my understanding of a few points.

(3)   a.   Interstellar space is so vast that there is no need to **fear whether** stars in the Andromeda galaxy will accidentally slam into the Sun.

b.   I **fear whether** I'll have use of my arms/hands by age 55 or 60.

Hypothesis. There are several strategies non-veridical preferential predicates can in principle employ to embed interrogative complements while being non-standard question-embedders (i.e., ones that don't take questions via THE ANSWERHOOD OPERATOR under the Dayal/Spector & Egré-style analysis). For each predicate V, it may be that. . .

S1: V allows a polar question (PolQ) but takes just the positive answer of the question as its argument (similar to *doubt* under the analysis by Karttunen 1977).

S2:   The interrogative clause is introduced by a silent attitude verb meaning 'wonder,' and this attitude modifies/is conjoined with V (à la Tomioka & Kim 2016)

S3: V is a PREDICATE OF RELEVANCE (Elliott et al. '17), i.e., denotes an attitude that relates an individual to a question as a whole, but not to a specific answer of the question.

The strategies have distinct empirical signatures. Under S1, the interpretation of V-*whether* is so that the target of the attitude is the positive (rather than the negative) answer of the embedded PolQ. If V employs S2 or S3, V will not license Q-TO-P DISTRIBUTIVITY (i.e., if x Vs *whether* p, then x Vs *that* p or x Vs *that* $\neg p$; Roelofsen & Uegaki 2021). Under S2, the interrogative will additionally behave like an adjunct and be interpreted as if it were the content of a rogative attitude. Importantly, predicates can vary in strategies they employ: (2) is compatible with an analysis where *hope* only employs S1 while (3) rules out this possibility for *fear*, as the semantic target of fear in (3b) is not the positive answer of the PolQ. From this observation, we hypothesise that, <u>cross-linguistically,</u> <u>*positive* non-veridical preferentials (PNPs) cannot employ S2 or S3 (although S1 is in</u> <u>principle possible) whereas *negative* non-veridical preferentials (NNPs) may employ all</u>

three strategies. The hypothesis makes two predictions. P1: NNPs are more likely to be compatible with interrogative complements than PNPs; P2: If a PNP embeds a PolQ, its interpretation is one where the attitude targets the positive answer. If an NNP embeds a PolQ, its interpretation is not limited to this. We tested these predictions cross-linguistically.

Methods. By means of a questionnaire, we collected introspective judgments from trained linguist native speakers of 14 languages (Bulgarian, Catalan, Dutch, Farsi, French, German, Hebrew, Italian, Japanese, Mandarin, Polish, Spanish, Swedish, and Turkish) to assess the semantic and selectional properties of 2 PNPs and 2 NNPs ('hope, wish, fear, worry'). Responsive 'know' and anti-rogative 'believe' were included as controls. We asked whether the predicates are compatible with declarative complements, constituent questions or polar questions, with contexts distinguishing whether the attitude targets the positive or the negative answer in the latter case. In addition, we asked whether the predicates can be used intransitively (which could suggest S2) and whether they satisfy Q-to-P distributivity (lack of which could suggest S2 or S3). In total, we have collected data w.r.t. 10 syntactic and semantic properties (declarative, ConstQ, $PolQ_{PosAns}$, $PolQ_{NegAns}$, Intran, $QtoPDist_{PolQ}$, $QtoPDist_{ConstQ}$, veridicality, gradability, focus-sensitivity), resulting in 840 data points.

Results. In terms of selection, at least one kind of question was attested under at least one preferential in all but one language surveyed (Bulgarian). Question embedding was freer with NNPs than PNPs. 'Fear' and 'worry' occurred with polar and constituent questions in more (7 and 13) languages than 'hope,' attested only with PolQ in only Mandarin and Turkish. The contrast between NNPs and PNPs is e.g., shown in the Japanese data:

(4) Jon-wa [rinjin-ga   shuumatsu ie-ni   iru-ka] {*nozondeiru/osoreteiru}
      Jon-TOP neighbor-NOM weekend   home-LOC stay-Q   hope/fear.Asp

'Wish' was not found to embed questions. In all but Italian, if a NNP admits PolQs, it also admits constituent questions. In terms of interpretation, when *x hope whether p* was at all possible, it was synonymous with *x hope that p*. This is shown e.g., in Turkish:

(5) Jon [komşu-su   ev-de   ol-acak mı] diye um-uyor.
      Jon neighbor-POSS home-LOC be-FUT   Q   C   hope-PRES
      (True if John hopes the neighbor to be at home; false otherwise)

In contrast, the corresponding results were varied with negative preferentials. In most cases, *x fear/worry whether p* was found to be ambiguous between ascribing a fear/worry towards p or towards $\neg p$. In some languages, however, only one or the other option was available. Yet a fourth attested case, in some languages and for 'worry,' was one where *x worry Q* was not reducible to any paraphrase in terms of declarative embedding. Such examples fail to satisfy Q-to-P distributivity, and ascribe an attitude towards the question 'as a whole,' rather than to any one of its propositional answers.

Discussion. Predictions P1 and P2 are borne out in our data, providing cross-linguistic support for our hypothesis. However, our data are not fine-grained enough to make further strong conclusions about the strategies the predicates employ. In particular, we have not identified robust patterns w.r.t. the distribution of S2 vs. S3. Also, we acknowledge that our language sample is heavily biased toward European languages. We are currently conducting further data collection in diverse language samples to assess the cross-linguistic robustness of the hypothesis. In the presentation, we will also speculate on reasons why the systematic contrast holds between PNPs and NNPs.