

What all do we know about *what all* ?

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The talk investigates the various manifestations of the *What all* ... question construction in four languages: Mandarin Chinese, German, Hungarian, and English. Some examples are:

- (1) a. %Who all have you invited for tonight? (OK in ULSTER ENG. + some varieties
b. %Where all have you been this year? of AM. ENG.)
- (2) *Was {alles} hast du {alles} gekauft?* GERMAN
what all have.2sg you all bought
'What [are] all [the things that] you have bought?'
- (3) *Tegnap ki mindenkivel beszéltél?* HUNGARIAN
yesterday who everyone-with spoke.2sg
'Who [are] all [the people that] you spoke with yesterday?'
- (4) *Ni dou qu-guo na-xie difang?* MAND CHIN
you DOU go-exp which-pl place
'Which places have you been to?'

I propose to unify the semantics for this construction family by extending Zimmermann's (2007) account of the German *was alles* construction to the others, and investigate the cross-linguistic (morpho)syntactic variability.

In Zimmermann's analysis, the function of the quantifier-like element is to modify structured question denotations by placing additional restrictions (plurality and exhaustivity) on their question domain. The widely attested plurality and exhaustivity property of these questions is built into the semantics of the quantifying question particle 'all': (5), where Q stands for the type of individual denoted by the particular question pronoun.

- (5) $w\text{-all} \quad \langle P, Q \rangle = \langle P, \{x \mid x \in Q \ \& \ \text{DIV}(x) \ \& \ \neg \exists z [z \succ x \ \& \ z \in Q \ \& \ z \in P] \} \rangle$
plurality exhaustiveness

The divisibility operator ensures that only plural-denoting expressions are appropriate associate NPs, while the exhaustiveness subclause guarantees that these are questions expecting an exhaustive answer. Thus the meaning of (1a), for instance, is as in (4):

- (4) $\langle \lambda x. \text{you invited } x, \{x \mid x \in *PERSON \ \& \ \text{DIV}(x) \ \& \ \neg \exists z [z \succ x \ \& \ z \in *PERSON \ \& \ \text{you invited } z] \} \rangle$
possible answers: {You invited A and B and nobody else; you invited A and C and nobody else; ... }

As regards the attested spectrum of syntactic realizations:

- German makes use of a quantifier adjoined to the quantified NP, from where the NP may optionally excorporate – this is how they may end up remotely from each other.
- In English, no such excorporation is possible, hence *wh- all* moves as a unit, invariably.
- Hungarian, where bare 'restrictor' pronouns morphologically combine with various quantifiers (\forall , \exists , free-choice: *minden-ki* [\forall -PERS] = 'everyone', *vala-ki* [\exists -PERS] = 'someone', *bár-ki* [freech.-PERS] = 'anyone', cf. *Ø-ki* [\emptyset -PERS] = 'who')), uses a compound quantificational pronoun to form the construction under scrutiny, e.g. [*Ø-ki-*

[*minden-ki*] ‘who-everyone’, and places it in the usual wh-position (= spec,FocP in this language). Because of the morphological nature of the compound, no excorporation is possible, hence no remoteness effect of the German type.

- In Chinese, similar associations between bare restrictor pronouns like *shei* ‘x-PERSON’, *shenme* ‘x-THING’ and quantifiers like the UQ *dou*, or a Q-op in spec,CP, have usually been analysed as a syntactic dependency. I propose, however, that such a dependency would be ill-formed, and in fact here *dou* modifies the clause as a clausal adverb, and adds a modifying part to the restriction on the variable to the effect that only exhaustive answers will be congruent with the question thus formed. Question-formation, meanwhile, proceeds along the standard route: a Q-operator in spec,C binds the variable provided by the *in situ* wh-pronoun) – independently of what *dou* does.