

The Possessive Equative Sentence in Mandarin: Its Relation to Possession and Existence

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Introduction: In addition to denoting possession and existence ((1) and (2)) and several other concepts, the Mandarin verb *you* can appear in the “X + *you* + Y + (*zheme* “this” or *name* “that”) + A(djective)” construction to express comparison between two individuals X and Y with respect to the property denoted by A (3). The nature of comparison the construction expresses is *prima facie* an equative one. On an intuitive level, the construction asserts that X is identical (or similar) to Y as far as the property denoted by A is concerned (Lü, 1980; Liu, 2004). This paper, *ipso facto*, calls it the possessive equative construction. Some descriptive works (Lü, 1980; Zhu, 1982; among others) treated the various uses of *you* as being separate from each other, and some others (e.g. Liu, 2004) considered them related in some way, yet without specifying how. On the other hand, formal semanticists have yet to offer a unified treatment of them. As an initial attempt, in this paper I offer a formal semantic analysis of the possessive equative construction and its relationship to the other uses of *you*. Equative *you*, in effect, functions as an abstractor over a variable in its object, which is consistently a small clause, overt or covert. The variable bears an index coming from the subject. The possessive equative construction can be analyzed as involving a subset relation between degrees, which are modeled as intervals on a scale (Kennedy, 2001; among others). My analysis suggests that equative *you* is tightly related to the other uses of *you* in that they all turn a small clause object into a predicate through variable binding.

- (1) zhangsan you hen duo lishi shu. (possession)
John have very many history book
“John has a lot of history books.”
- (2) qita difang ye you zhe zhong qingxing (existence)
other place also have this kind situation
“The situation exists in other places as well.”
- (3) zhangsan kanyangzi **you** ta gege (name) da/gao/mang/chidun/jiji
John appear have his brother that big/tall/busy/retarded/active
“John appears to be as big/tall/busy/retarded/active as his elder brother.”

Similarities between *you* & “have”: The starting point of my analysis of the possessive equative construction is the general resemblance of *you* to English “have.” The latter has been rightly analyzed as an abstractor over a domain of individuals which co-refer with its subject (Ritter and Rosen, 1997; Sæbø, 2009). The similarities between “have” and *you* render it straightforward that this analysis of “have” is extendable to *you*. First, “have” and *you* share a range of interpretations that, on a pre-theoretical level, are related to possession, existence, location, aspect (to a lesser extent for *you*, however), etc. Second, they usually carry no specific meaning of their own, especially when embedding a weak, relational DP. In (4) “have” and *you* appear to denote no concrete relation with respect to the subject and/or the object. In (5) “have” and *you* seem to do no more than just “glue,” so to speak, its subject to the relational noun object, the former being the internal argument of the latter. For *you*, cases even exist where its semantic contribution is so trivial that it can be omitted, as is evident from the fact that *you* in (6) is optional. Third, both “have” and *you* allow a surface small clause as the object. The subject of the small clause can be any type of DPs: (7) involves a weak DP, and (8) a strong DP. Furthermore, van Riemsdijk (1978) and Fabricius-Hansen

(2006), among others, noted that English “with” allows a small clause as its argument; syntactic details aside, the parallel surface form between (9a-b) provides additional support that a small clause can figure in as the object of *you*. Fourth, when “have” and *you* take a small clause, their subject has to be pertinent to the complement, either explicitly or implicitly. The reference of “they” in (10), for example, has to bear some relation either to the spies (e.g. being spymasters) or to the ship (e.g. being shipmasters). If the pertinence requirement is not satisfied, unacceptability arises (11).

- (4) a. They **have** the possibility of obtaining all the required documents.
 b. tamen **you** keneng nadao suoxu de wenjian.
 they have possibility obtain needed MOD document
- (5) a. The crime **has** two victims.
 b. zhe zhuang anzi **you** liang ge shouhaizhe.
 this CL case have two CL victim
- (6) zuijin zhangsan guang Beijing jiu qu le (**you**) hao ji tang
 recently John alone Beijing EMP go PAST have good several trip (CL)
 “Recently John has made a few trips to Beijing, (and he has done other things too).”
- (7) a. Now he only **has** a daughter alive.
 b. ta xianzai zhi **you** ge nüer hai huozhe
 he now only have CL daughter still alive
- (8) a. He **had** all the evidence in hand and planned to sue the company.
 b. ta **you** naxie zhengju zai shou, dasuan gao na jia gongsi.
 he have those evidence in hand plan sue that CL company
- (9) a. **With** strangers present, he didn’t sing.
 b. **you** moshengren zaichang, ta mei changge.
 have stranger present he not sing
- (10) a. They **have** several spies abroad.
 b. tamen **you** ji ming mitan cang zai chuan shang
 they have several CL spy hide at ship on
- (11) a. %John **has** Mary’s mother living close to her. (Sæbø (2009): ex.16)
 b. tamen **you** ji ge pengyou/%moshengren zai waitou shuohua
 they have several CL friend/%stranger at outside talk
 “Several friends of theirs/several strangers are talking outside.”

The meaning of “have”: In the paper I adopt the idea that “have” makes no semantic contribution except for providing some mechanism for its subject to co-refer with some element in its object. Several analyses available in the literature entertained this view, yet from somewhat different perspectives. Ritter and Rosen (1997) based their analysis on the assumption that “have” is a functional item with no independent semantic/thematic content. According to their proposal, the verb “provides the additional syntactic structure necessary for the insertion of an extra argument,” which, in turn, post-lexically determines the specific semantic interpretation of “have.” The subject gets an interpretation via co-reference with an overt or covert constituent in the predicate. Sæbø (2009) took a more semantic approach to the interpretation of “have” which shares essential spirits with Ritter and Rosen’s analysis. He argued that the object of “have” is consistently a small clause, whether overt or covert. The semantics of this verb (12) serves to turn its small clause complement into a predicate, which in turn absorbs the trace of the QR-ed subject. The trace variable binder introduced by

the QR, which is interpreted as contributing λx_i for an index coming from the subject (13), requires a variable for it to bind. The small clause has to provide such a variable, otherwise “have” would denote vacuous abstraction, and both the verb and the subject would be merely redundant. Such a variable can be present in an anaphor, a relational noun or an implicit relation (Sæbø, 2009: p374). In particular, when “have” takes a *surface* bare DP argument, an appropriate *silent* predicate containing a variable semantically “supplements” the DP. The LF for (14a), for example, has the predicate “in her possession” supplementing the DP “a boat.” This implicit predicate specifies a notion of possession, modeled as a subset relation (14b-c). Obviously all “have” contributes is to abstract, rendering its subject to bind a variable in, and to be pertinent to, the small clause complement. Details aside, the other uses of “have” ((15) for existence, (16) for aspect, etc) are subject to a similar analysis. The analysis of English “have” extends to Mandarin *you*, as far as the shared uses are concerned.

(12) $[[\text{have}]]^f = \lambda \phi \lambda x_e. \phi$ (Sæbø, 2009: (22), slightly simplified; f is a variable assignment.)

(13) $[[u_i]]^f = \lambda \phi \lambda z. \Phi^{f(i \rightarrow z)}$

(14) a. My mama has a boat.

b. [my mama [_{u₃} [t₃ have [a boat [in her₃ possession]]]]]]

c. $\exists x(\text{boat}(x) \wedge \{x\} \subseteq \{y: \text{my mama possess } y\})$

(15) John has both of his sons in the army.

(16) John has closed the door.

Analysis of the possessive equative construction: My analysis is based on the assumption that, just like its other uses, the equative use of *you* takes a small clause complement and has the same semantic role of abstraction as discussed above. The “Y + (*zheme* “this” or *name* “that”) + A” chunk in the equative possessive construction denotes a set of degrees to which Y has the property denoted by A. Applying the MAX function to the set yield the maximum element of the set, that is, Y’s actual, maximum degree of A-ness. Then it merges with an appropriate covert predicate P that provides a variable for the variable binder introduced by the QR-ed subject X to bind. P has to contain some relation that eventually links X and Y. I take the default situational specification of the relation to be a partitive one between Y’s degree of A-ness and the degree of X possessing some relevant property. P has to contain an appropriate gradable predicate G to contribute this property. The fact that Mandarin does not allow comparative sub-deletion, evident from the ungrammaticality of (17), *independently* requires G to be identical to A. Therefore, P is not burdened with the task to select the right predicate G. In my analysis, I assume that gradable adjectives denote functions of type $\langle e, \langle d, t \rangle \rangle$: if an individual x is A to some degree d , x is also A to degrees $d-1$, $d-2$, etc. I further adopt the idea that a degree is a convex subset of a linearly ordered set of points (i.e. interval) ranging from a point on the relevant scale (Kennedy, 2001). Given this ontology, the partitive relation between Y’s degree of A-ness and X’s degree of G-ness can be modeled by a subset relation between them.

(17) a. *tianwenwanguyuanjing chang bi ta kuan

space-telescope long than it wide

“The space telescope is longer than it is wide.”

b. *tianwenwanguyuanjing gen ta kuan yizhang chang

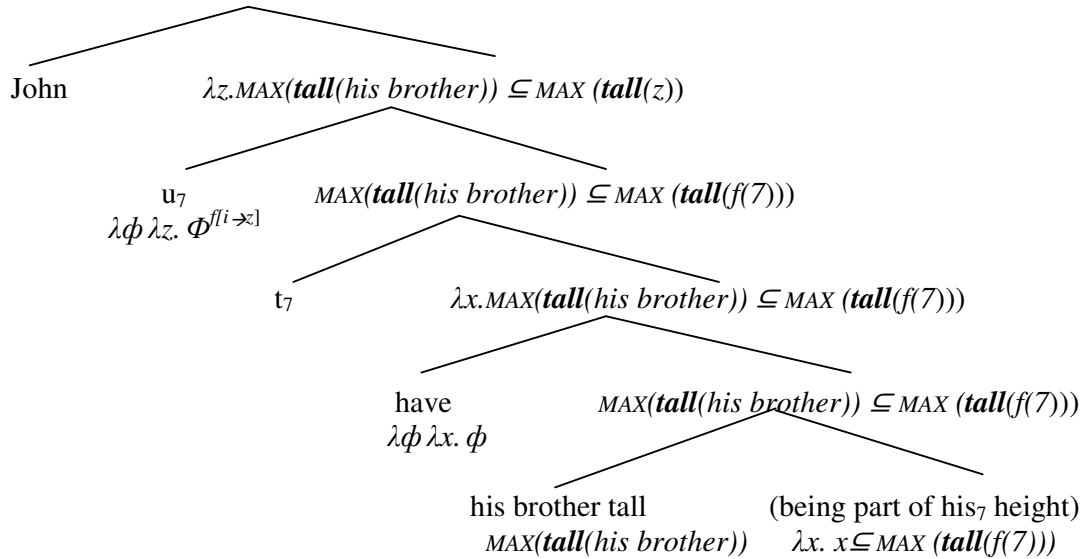
space-telescope with it wide same long

“The space telescope is as long as it is wide.”

Let us illustrate the above analysis with a concrete example. In (18) the constituent *ta gege gao* denotes the set of degrees to which his (i.e. John's) brother is tall. Applying the MAX function to the set yields his brother's actual, maximum height *d'*. This *d'* is supplemented by an implicit predicate P, which is something like "being part of his (i.e. John's) height." The predicate contains a variable, contributed by the anaphor "his," for the trace variable binder introduced by the QR-ed subject to bind. (19) contains the LF and step-by-step derivation for (18). The end result says that, for the sentence in (18) to be true, John has to be *at least* as tall as his brother. This is the basic semantic interpretation of (18), and explains why B's response to A in (20) is not self-contradictory. For some speakers of Mandarin, (18) has an "exactly" reading that John is *exactly* as tall as his brother. The reading is derived via a Gricean quantity implicature (following the analysis of English "as ... as" equative by Horn, 1972 and Klein, 1980; *inter alia*).

(18) zhangsan **you** ta gege gao
 John have his brother tall
 John is as tall as his brother.)

(19) a. [John [_{u7} [_{t7} have [his brother tall [being part of his₇ height]]]]]
 b. MAX(**tall**(his brother)) ⊆ MAX (**tall**(John))



(20) A: bi shoumenyuan ai de ren bu neng canjia zhe zhi zuqiudui.
 than goalkeeper short DE person not can join this CL soccer-team
 "Any person who is shorter than the goalkeeper cannot join the soccer team."
 B: zhangsan you shoumenyuan gao, ta bi shoumenyuan hai gao ershi limi.
 John have goalkeeper tall, he than goalkeeper still tall 20 cm
 "John is as tall as the goalkeeper; in fact, he is 20cm taller than the goalkeeper."

In limited cases, a noun formed out of antonymous adjectives appears after Y in lieu of an adjective (Liu, 2004). In (21a), for example, after *zuqiu* is the noun *daxiao* "(lit) big-small, size." I take this as a piece of confirming evidence for my idea that the constituent overtly appearing after *you* denotes a degree, rather than a proposition. Nothing extra is called for for the semantic computation of such cases. The semantic derivation of (21a) parallels that of (18), and their end-results have a similar format.

- (21) a. shan shang de na ge mugu **you** zuqiu (name) daxiao
 mountain on REL that CL mushroom have soccer that size
 “The mushroom on the mountain is as big as a (typical) soccer.”
 b. MAX (**size**(a generic soccer)) \subseteq MAX (**size**(the mushroom on the mountain))

Besides being an individual-denoting DP, Y in the equative *you* construction can be a measure phrase (MP) as well. In such cases A is omissible if the context precludes ambiguity (for example, if only depth (but not width) of the river is relevant in the utterance context of (22)). For such cases I posit a degree morpheme MEAS (23) and assume the existence of a contextually determined covert A when it is not overtly realized. MEAS serves to make A vacuous except for contributing a contextually relevant dimension (e.g. height, depth, weight) to the semantic computation. In (22a) *wu mi (shen)* still denotes a set of degrees.

- (22) a. cun dong de na tiao he **you** wu mi (shen)
 village east REL that CL river have five meter deep
 “The river east of the village is as deep as five meters.”
 b. MIN([five meter MEAS deep]) \subseteq MAX (**deep**(the river east of the village))
- (23) $[[\text{MEAS}]] = \lambda g_{\langle e, \langle d, t \rangle \rangle} \lambda m_{\langle d, t \rangle} \lambda d. d = \text{MIN}\{d' : m(d')\} \wedge d$ is a degree on the relevant scale along the dimension specified by the adjective *g*, which is either overt or covert.

Conclusions: Equative *you*-sentences which take a gradable verb after Y can be analyzed similarly. There are some other usages of *you* that are highly idiomatic, and I assume that they are not counter-arguments against my analysis. If on the right track, my analysis suggests that the various uses of *you* are not as differing as (most) traditional descriptive works have claimed. In terms of its broader theoretical implication, my analysis lends sound crosslinguistic support to the relatively recent idea that all “have” does is to abstract and to turn its complement, which is treated as a small clause, into a predicate.

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