A reassessment of Mandarin universal quantificational expressions

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mei sentences with *dou*

In Mandarin, the supposed quantificational element *mei* (≈ 'every') selects for a numeral + classifier + noun complex.

Quantifier phrase (QP) subjects containing *mei* must normally be followed by a mysterious element *dou* within a clause in Mandarin.

(1)   ***mei-(yi)-ge***   *haizi *(**dou**) qu-le*   *gongyuan*
      mei-one-CLF child   DOU   go-PRF park
      '**Every** child went to the park.'

mei sentences without *dou*

However, there is an exception: if the clause has a object that is a numeral + classifier + noun complex (without a quantifier), *dou* seems to be optional (first observed in Huang 1996):

(2) ***mei-(yi)-ge***   *haizi hua-le*   ***yi-fu-hua***
      every-one-CLF child draw-PRF one-CLF-picture
      '**Every** child drew **one picture**.'

Questions for today

▸ Why/when is *dou* necessary?

▸ What (if anything) is the difference in meaning with/without *dou*?

▸ What (if anything) are the differences in structure between the two constructions?

A primer on Mandarin word order

Mandarin is SVO by default, but easily accommodates OSV (topicalization).

dou always precedes the verb and its aspect markers. So if *dou* is present, *all else being equal*, the word order of a transitive clause is:

(3)   S – DOU – V – O

A complication: other universal quantifiers

Other universal quantifiers, like *suoyou* (≈ 'all') work differently.

First, while *mei* (4a) attaches to numeral complexes, *suoyou* attaches directly to bare nouns (4b).

(4)   a.   *mei yi   *(ge) haizi*
             mei one CLF   child
             'every child'

         b.   *suoyou (*yi ge) (de) haizi*
             suoyou one CLF DE   child
             'all (of the) children'

Other universal subjects require *dou*

Second, regardless of what is in the object position, other universal quantifiers require *dou* if they are in the subject position.

(5) a. *suoyou-(de) haizi *(dou) qu-le   gongyuan*
        suoyou-DE   child DOU   go-PRF park
        'All (of the) children went to the park.'

     b. *suoyou-(de) haizi *(dou) hua-le   yi-fu-hua*
        suoyou-DE   child DOU   draw-PRF one-CLF-picture
        'All (of the) children (each) drew one picture.'

What is *dou* actually doing?

Problem: (6a) and (6b) with/without *dou* seem to be semantically equivalent. *But is this really true?*

(6) a. ***mei-yi-ge*** *haizi hua-le yi-fu-hua*
MEI-one-CLF child draw-PERF one-CLF-picture
'Every child drew 1 picture.'

b. ***mei-yi-ge*** *haizi **dou** hua-le yi-fu-hua*
MEI-one-CLF child DOU draw-PERF one-CLF-picture
'Every child drew 1 picture.'

Is *dou* optional?

Actually, *mei*-subjects with and without *dou* do produce different interpretations (Sun, 2017).

(7) **Scenario:** The teacher is giving instructions to the 4 children in an art class:

    a. **mei-liang-ge** *haizi hua yi-fu-hua!*
       MEI-two-CLF   child draw one-CLF-picture
       'Groups of 2 children draw 1 picture!'

    b. **mei-liang-ge** *haizi* **dou** *hua yi-fu-hua!*
       MEI-two-CLF   child DOU draw one-CLF-picture
       'Every conceivable pair of children, draw 1 picture!'

In a context with 4 children *a, b, c, and d*

(7a) would be true iff *any* of the three possibilities is true:

1. $\{\{a,b\},\{c,d\}\}$ drew 1 picture
2. $\{\{a,c\},\{b,d\}\}$ drew 1 picture
3. $\{\{a,d\},\{c,b\}\}$ drew 1 picture

(7b) would be true iff
$\{\{a,b\},\{c,d\},\{a,c\},\{b,d\},\{a,d\},\{c,b\}\}$ drew 1 picture.

Maximality

Cases as in (7) above challenges the idea that the use of *mei* always gives rise to **maximality**:

[*mei* 2 CLF child] without *dou* is not interpreted as picking out the **maximal plural individual** that contains 'all conceivable pairs' of children.

Only when *dou* is present, the maximal reading becomes the only reading.

Suoyou (≈ 'all') **only** licenses maximal interpretations, and thus **always** needs *dou*.

Meaning and form in a clause with *dou*

It seems that the true universal quantificational force (which enforces maximality) is supplied by *dou*, not *mei* or *suoyou*.
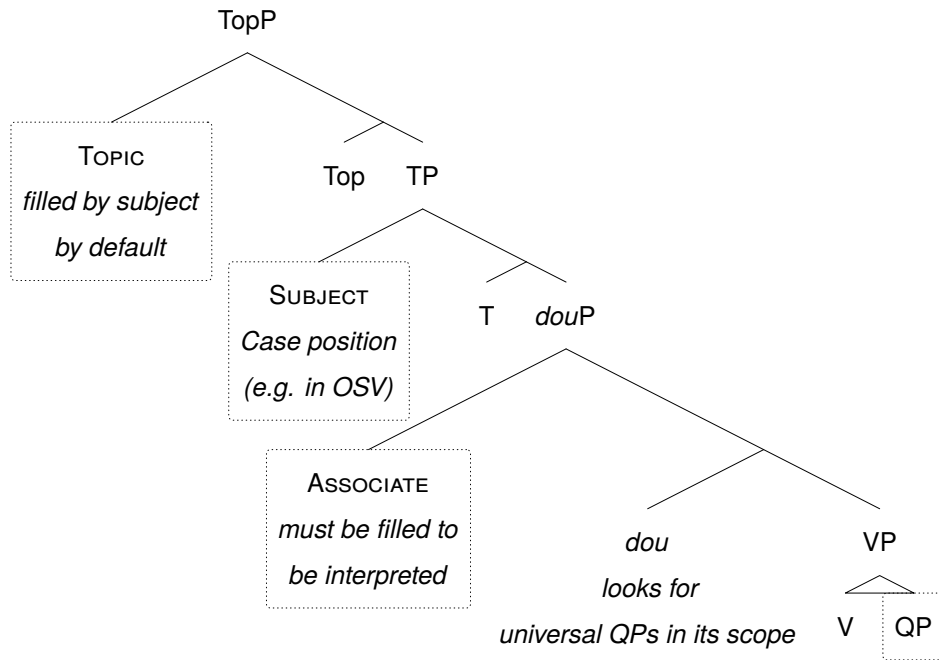
Question: what does this mean for the structure?

Our proposal: whenever *dou* appears, universal QPs not only merge with the verb and the subject position (Spec,TP) but also merge with *dou* on the way (Lin, 1998).

But this means that *dou* is just a **two-place predicate** — like any quantifier.

A simplified clausal structure of Mandarin

(8)   Possible positions for univeral QPs in Mandarin clauses

TopP

TOPIC
filled by subject
by default

Top   TP

SUBJECT
Case position
(e.g. in OSV)

T   *dou*P

ASSOCIATE
must be filled to
be interpreted

dou
looks for
universal QPs in its scope

VP

V   QP

SOV where O associates with *dou*

We expect that *object QPs* can merge with *dou* and are linearized accordingly, e.g. S – O – DOU – V rather than S – DOU – V – O.

The speakers we consulted seem to confirm this:

(9) a. *meiyou laoshi **mei**-(yi)-ge haizi dou jiangli-le*
            no   teacher MEI-one-CLF child DOU reward-PRF
            'No teachers each rewarded **every** child.'

     b. **meiyou laoshi dou jiangli-le   **mei**-(yi)-ge haizi*
           no   teacher DOU reward-PRF MEI-one-CLF child
          Intended: 'No teachers each rewarded **every** child.'

Summary

We suggested that ***dou* supplies true quantificational force**, not *mei* or *suoyou*.

This is rendered because *dou* and a *mei*/*suoyou* element in its scope are merged.

This triggers linearization of that element to the left of *dou*. As such, both word order and interpretation are manipulated by this dependency.

Thank you!

References

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