The quantity adjective 'mahn-' (many) in Korean

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JWLLP-23, Waseda Univ., 2017. 12. 15

* This presentation is based on my earlier work ("Proportional quantifiers: focusing on mahn-un- (many)," Seong-kok Non-chong 28:1, Seoul, pp. 245-73, 1997. [In Korean]).

many in English vs. *manh-* in Korean

- Many men date many women in America.
  - The first 'many': in the millions
  - The second 'many': several to dozens

- manh-un namca-ka manh-un yeca-hako …

  many-ADN man-NOM many-ADN woman-with …
  - In general, there is no count/mass distinction in Korean.

Issues

- Is 'mahn-' a (quantificational) determiner or an adjective?

    - What is its surface distribution?

- What is its semantics?

    - Does it show typical logical properties of a (quantificational) determiner?

Morphology and syntax of *mahn-*

- The distribution of 'mahn-' is not different from that of other regular adjectives in Korean.
  - sakwa-ka mahn-ta   'Apples are many.'
    apple-NOM many-END
  - sakwa-ka manh-ci …   'Apples (are not) many.'
    apple-NOM many-CON
  - sakwa-ka ppalkah-ta   'Apples are red.'
    apple-NOM red-END/ red-CON
  - sakwa-ka ppalkah-ci …   'Apples (are not) red.'
    apple-NOM red-END/ red-CON

Morphology and syntax of *mahn-*

- The distribution of 'mahn-'
  - sakwa-ka mahn-ko/mahn-key/manh-uni...

    apple-NOM many-CON

    'Apples are many, ….'
  - ppalkah-ko/ppalkah-key/ppalkah-ni...

    apple-NOM red-CON

    'Apples are red, ….'

Morphology and syntax of *mahn-*

- The distribution of 'mahn-' in the prenominal position
  - manh-un   sakwa

    many-ADN apple
  - ppalkah-un sakwa

    red-ADN   apple

n	freq	word type	remarks
1	7681	manh/VA + un/ETM	adnominal
2	5865	manh-i/MAG	adverbial
3	1806	manh/VA + ta/EF	sentence ender
4	660	manh/VA + ass/EP + ta/EF	sentence ender
5	538	manh/VA + ko/EC	sentence ender
6	439	manh/VA + a/EC	connective
7	309	manh/VA + ci/EC	connective
8	240	manh/VA + ta-nun/ETM	adnominal
9	182	manh/VA + ul/ETM	adnominal(future)
10	180	manh/VA + a-se/EC	connective
11	176	manh/VA + ta-ko/EC	connective
12	144	manh/VA + un-tey/EC	connective
13	140	manh/VA + ci-man/EC	connective
14	131	manh/VA + ki/ETN	nominalization
15	114	manh/VA + ass/EP + ko/EC	past + connective
16	108	manh/VA + ass/EP + ten/ETM	past + adnominal

532 types
21324 tokens

Extracted from Sejong Tagged Corpus (≒ 12mil)

Interaction with other (q-)determiners

1. (?) ku manh-un motun salam-tul-i
   the many-ADN   all   person-PL-NOM
   'All the many people (have left.)'

2. (?) ku motun manh-un   salam-tul-i …
   the all   many-ADN person-PL-NOM
   'All the many people (have left.)'

mahn-un vs. *motun* (all)

- S. Lee (1995)
1. manh-un sikkwu-ka   kwulmcwuli-ko iss-ta.
   many-ADN family-NOM   starve-CON   be-END
- a. 'Many of the family members are starving.'
- b. 'The whole family, which are many, are starving.'
  - not inconsistent with the scalar implicature 'It is not the case that all the family is starving.'

mahn-un vs. *motun* (all)

- *mahn-*, like other adjectives, can host tense and/or aspectual verbal particles, while *motun* does not.

- ku manh-ten   sakwa-lul

  the many-ADN$_{past}$ apple-ACC

  nwu-ka   ta mek-ess-ci?

  who-NOM all eat-PAST-END$_q$

  'Who ate the apples that were once so many?'

mahn-un vs. *motun* (all)

- Tense/Aspect variation for ordinary adjectives in the prenominal position

1. pappu-un salam

   busy-_{ADN}   person

2. pappu-ten salam

   busy-_{ADN_past}   person

3. pappu-(aci)-ul salam

   busy-_{ADN_future}   person

mahn-un vs. *ku* (the)

- ku ppalkah-un sakwa

  the red-ADN   apple

  - 'The apple that is red'
  - '(The) apple that is very red': a less likely reading

- ku manh-un   sakwa

  the many-ADN apple

  - (The) apples that are very many
  - The apples that are many

English *many*

- Solt (2015)
- a. Many students attended the lecture.
- b. John's friends are many.
- c. The many students who attended enjoyed the lecture.
- d. Many more/many fewer than 100 students attended the lecture.

- Quantifica-tional
- predicative
- attributive
- differential

Semantics of *mahn-*

- Conservativity
- Extension
- Ambiguity
- Vagueness

Semantics: Conservativity

- $\underline{D_E A}B \leftrightarrow D_E A(A \cap B)$, where $A, B \subseteq E$.
- A linguistic universal regarding natural language determiners. Barwise and Cooper (1981), Keenan & Stavi (1981/86), Westerståhl (1985)
- Whether or not B is a member of [D](A) depends only on that part of B which is common to A.
- D(R) restricts the universe M to the denotation A = [R] of the noun.
- Determiners that clearly observes conservativity: *all, some, no, not all*

Semantics: Conservativity

- $\underline{D_E A}B \leftrightarrow D_E A(A \cap B)$, where A, B $\subseteq$ E.

1. motun sakwa-ka mas-iss-ta.
   'All the apples are delicious.'

2. motun sakwa-ka mas-iss-nun sakwa-ta.
   'All the apples are delicious apples.'

3. manh-un sakwa-ka mas-iss-ta.
   'Many apples are delicious.'

4. manh-un sakwa-ka mas-iss-nun sakwa-ta.
   'Many apples are delicious apples.'

1. i-pen kwukhoyuywen senke-ey-nun manh-un yenyeyin-i hwupo-lo chwulmaha-ess-ta.

    'In this election, many entertainers became candidates.' ≒ Many candidates are entertainers.

2. i-pen kwukhoyuywen senke-ey-nun motun yenyeyin-i hwupo-lo chwulmaha-ess-ta.

    'In this election, all entertainers became candidates.' ≠ All candidates are entertainers.

- manh-un hankwukin-i soncaycwu-ka coh-ta.
  many-ADN Korean-NOM finger-skill-NOM good-END

  1. 'Among Koreans, many are skillful with their fingers.'

  2. 'Among those that are skillful with their fingers, the number/proportion of Koreans counts as many.'

Semantics: Extension

- $D_E AB \leftrightarrow D_{E'} AB$, where A, B $\subseteq$ E $\subseteq$ E'.

1. motun sakwa-ka ik-ess-ta.

   all apple-NOM ripe-PAST-END

   'All apples are ripe.'

2. i hakkyo-ey-nun 'In this school,'

   manh-un haksayng-i oynsoncapi-ta.

   many-ADN student-NOM left-handed-END

   'In this school, many students are left-handed.'

Semantics: Ambiguity

1. manh-un hankwukin-i oynsoncapi-ta.

   many-ADN Korean-NOM   left-handed-END

   'Many Koreans are left-handed.'

- Possible contexts
  - When we consider the whole Korean population,
  - Compared with those left-handed people in other countries,
  - In light of my initial expectations,
  - Compared to ten years ago,
  - .....

- In case of 'mahn-', it seems not possible to find a case that shows consistent logical properties regardless of the context.
- Semantic properties alone are not enough to specify the meaning of 'mahn-'.

1. A: manh-un sakwa-ka ik-ess-e.

   'Many apples are ripe.'

2. B: ani-ya, sakwa-nun manh-i ik-un key ani-ya.
   sasil-un pay-ka manh-i ik-ess-e.

   'No, not many apples. In fact, many pears are.'

3. A: kulay-ess-e? nan kulen cwul mol-ass-e.
   pay-ka ik-un kes-un mos po-ass-ketun.

   'Really? I didn't know that. Didn't know about pears.'

- S. Lee (1995), on the context dependency of 'manh-'

1. na-nun 25 mwuncey-cwung sey mwuncey-man phwul-ess-nuntey, manh-i/ADV phwun seym-i-ta.

   'I solved 3 problem sets out of 25, and I regard I have solved many.'

2. na-nun 75% cengto phwul-ess-nuntey, manh-i phwun seym-i-ta.

   'I solved 75% of the problem sets, which I regard to be many.'

- S. Lee (1995)
- # taypwupwun-uy kwukhoyuywen-tul-i ku

  most-ADN   MP-PL-NOM   the

  pepan-ey chansengha-ess-nuntey

  manh-un   kwukhoyuywen-tul-i ku pepan-ey

  many-ADN MP-PL-NOM   the motion

  chansengha-ci anh-ass-ta.

  "Most MPs voted in favor of the motion, but many voted against it."

- taypwupwun-uy kwukhoyuywen-tul-i ku pepan-ey chansengha-ess-nuntey, yeychukha-un kes-pota-nun manh-un kwukhoyuywen-tul-i acik ku pepan-ey chansengha-ci anh-ass-ta.

  "Most MPs voted in favor of the motion, but contrary to our initial expectation, many still didn't vote for it."

Partial summary

- Conservativity strongly influences the semantics of 'mahn-', but it can be 'overridden' by some contextual factors. Even in some typical examples of the conservativity preservation, it seems possible to come up with a context where the constraint is violated.

- Though conservativity certainly plays a significant role in the interpretation of 'mahn-', it is not a defining feature.

- The context dependency undermines the ambiguity hypothesis for 'mahn-' based on conservativity.

- Keenan & Stavi (1986) on adjectives of value judgement

1. *Many* lawyers attended the meeting this year.

2. *Many* doctors attended the meeting this year.

- When applied to the same set of lawyer-doctors, the truth values of the two sentences may not match with other.

Semantics: Vagueness

1. **manh**-un pic-ul ci-ess-ta.

   many-ADN debt-ACC accrue-PAST-END

   '(He) has accrued much debt.'

2. **manh**-un salam-i   moi-ess-ta.

   many-ADN person-ACC gather-PAST-END

   'Many people gathered.'

Upper limit

1. (?) ku manh-un motun salam-tul-i
   the many-ADN   all   person-PL-NOM
   'All the many people (have left.)'

2. (?) ku motun manh-un   salam-tul-i …
   the all   many-ADN person-PL-NOM
   'All the many people (have left.)'

Lower limit

- How many would count as many?

  1<x<n : Cushing (1977), Y. Lee (1984)

1. manh-un haksayng-i wuntongcang-ey iss-ta.

   many-AND student-NOM playground-LOC   be-END

   'There are many students on the playground.'

2. manhi phwul-ess-ney!   '(You) solved many!'

   many/ADV solve-PAST-END

   – Case: two out of three difficult problems

Lower limit

1. ku cip-ey-nun peyn-chu-to manh-a/END. twu tay-na toy-ke-tun.

    'The Benz owned by the family are many. They have even two.'

2. peyn-chu-to manh-a/END. wuli-un han tay-to eps-nun peynchu-lul twu tay-ssik-ina kwulli-ni.

    Even Benz (cars) are many (in the house). While we don't have even one, (they have) even two.'

- N=1?

1. hana-to manh-a/END.   'Even one is (too) many.'

2. A: way ce-han-they-nun ppang-ul ha-na-pakk-ey an cwu-sey-yo? te cwu-sey-yo.

   'Why do you give only one bread to me? Give me two.'

3. B: ha-na-to manh-a. cen-hye mos pat-un sa-lam-to iss-e

   'Even one is many. There are those that get none.'

Semantics: Specification

1. manh-un salam   'many men'

    many-ADN person

2. manh-un swu-uy   salam

    many-ADN number-ADN person

3. *manh-un* N = *manh-un swu-uy* N

Semantics: Specification

1. manh-un ton

   many-ADN   money

2. manh-un aykswu-uy ton

   many-ADN   amount-ADN   money

3. i manh-un   ton-ul   ettehkey ta tul-ko ka-ci?

   this many-ADN money-ACC how   all carry   go-END

   'How (can we) carry this much volume of money?'

4. manh-un pwuphi-uy ton 'volume'

Semantics: Specification

swu 'number'

- $manh$-un + N = $manh$-un $yang$ 'quantity' $-ui$ N

$piyul$ 'proportion'

- $manh$-un + N → more quantity/proportion of N, compared to the expected level, which is provided by the context

Conclusion

- *manh-*(many) in Korean acts more like ordinary adjectives syntactically.
- Semantically, *manh-* in the adnominal position seems to show some typical logical properties of quantificational determiners like conservativity and extension, but they can be overriden when appropriate context are provided. So it functions as a strong preference rather than as a constraint.
- The semantics of *manh-* is heavily dependent on its context.

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