An intermediate stage of spec-to-head reanalysis: evidence from Mandarin and Cantonese

Shuyan Wang (University of Connecticut)

Introduction: Yi ‘one’ in Mandarin has been suggested to have grammaticalized from a numeral to an indefinite article (Chen 2003), but no syntactic analysis of the grammaticalization process has been provided. This paper will go beyond previous analyses, by proposing that: 1) the grammaticalization of yi is an ongoing process and yi is ambiguous between a numeral and an indefinite article; 2) the grammaticalization of Mandarin yi is an instantiation of a well-known phenomenon: specifier-to-head reanalysis (e.g., van Geldern 2001, 2004); 3) there is an intermediate stage of grammaticalization: a numeral ‘one’ starts as a specifier of a phrase; then, it adjoins to a head before it is reanalyzed as an independent head projecting a separate phrase.

Ambiguity of yi: Following Chen (2003), I argue that yi has grammaticalized from a numeral to an indefinite article and that yi is ambiguous between a numeral and an indefinite article. The ambiguity analysis can cover a range of observations. First, numeral expressions with yi ‘one’ in Mandarin can be interpreted as indefinite specific or non-specific, while numeral expressions with other numerals are usually interpreted only as indefinite non-specific (e.g., Huang 1987, Tsai 2001). For example, numeral expressions except those with yi do not appear in subject/topic positions (1), since these positions in Mandarin do not allow non-specific readings (e.g., Chao 1968; A. Li 1996). I argue that yi in (1b) is an indefinite article, not a numeral, which leads to the acceptability of (1b).

1. a. ??san-ge xuesheng chi-le dangao. b. yi-ge xuesheng chi-le dangao.
   ‘Three students ate the cake.’ (Huang et al. 2009) ‘A student ate the cake.’

Second, when yi-Cl-N phrases stay under the scope of negation, a ‘not any’ interpretation may emerge (2). I argue that with the ‘not any’ interpretation, yi in (2) is an indefinite article, not a numeral. Similar patterns are found in English (3). (Additional arguments will also be given below.)

2. Xiaohong congmei jiao-uo yi-ge nanpengyou. 3. Mary has never had a/*one boyfriend.
   Xiaohong never make-EXP a-Cl boy.friend
   ‘Xiaohong has never had any boyfriend.’

Specifier-to-head reanalysis: Regarding the structural reanalysis, I argue that numerals are located in Spec, CIP (4a) (cf. Tang 1990), and that the article yi ‘one’ has been reanalyzed as a separate head projecting a Quantifier Phrase (QP) (4b). The ‘spec-to-head’ reanalysis has been proposed for many elements within CP and DP (e.g., van Geldern 2001, 2004; Willis 2007).

4. a. [CIP san]CT -ben [NP shu] b. [QP [Q yi [CIP CT -ben [NP shu]]]
   three CI book a CI book

As in (4), a numeral is in Spec, CIP, so its existence is determined by the presence of a classifier; in contrast, the existence of an indefinite article is not dependent on the presence of a classifier. Then an indefinite article yi may combine with a noun without a classifier. This is borne out (5).

5. a. yi nanhai b. san-*(ge) nanhai
   a boy three-CL boy

Furthermore, the article analysis of yi in yi-N phrases (e.g., (5a)) is supported by the observation that yi-N phrases cannot be used as answers for ‘how many’ questions (6). If yi in yi-N is an indefinite article, not a numeral, the unacceptability of yi-N in (6) is expected. Similar patterns are found in English (7). (Note that although Chen (2003) suggests that yi in yi-N phrases may be an indefinite article, no specific arguments to this effect are given in the paper.)

   ‘How many apples did you eat?’ ‘I eat-PAST one-Cl apple

7. Question: How many apples did you eat? Answer: I ate one/*an apple.
**Intermediate stage of grammaticalization:** I argue that jet ‘one’ in Cantonese is also undergoing the grammaticalization process from a numeral to an indefinite article. However, I will further argue that jet has not grammaticalized as much as yi in Mandarin: jet has not been reanalyzed as an independent head projecting a separate phrase.

First, numeral expressions in Cantonese usually do not appear in subject/topic positions (8a), since these positions usually do not allow indefinite non-specific expressions, like those in Mandarin. However, a jet-Cl-N phrase in subject/topic positions is much better (8b). I argue that jet in (8b) is actually an indefinite article, not a numeral.

- a. ??saam-go hoksaang mei lei.  b. jat-go hoksaang mei lei.
- three-Cl student not come  a- Cl student not come
- ‘Three students didn’t show up.’  ‘A student didn’t show up.’

Second, when jet-Cl-N phrases stay under the scope of negation, a ‘not any’ interpretation may emerge (9). This also indicates that jet in (9) is an indefinite article, not a numeral.

   Siuhung never made a-Cl boyfriend
   ‘Siuhung has never had any boyfriend.’

Therefore, I argue that jet in Cantonese is ambiguous between a numeral and an indefinite article. What is the syntactic structure of jet? Following the spec-head reanalysis proposed for Mandarin yi, the article jet should head a QP (10).

- a. [ClP samm [CT -go [NP hoksaang]]]  b. [QP [Q' jet [ClP [CT -go [NP hoksaang]]]]]  
The article jet then would not be dependent on the presence of a classifier and should be directly combinable with a noun. However, jet always needs a classifier (e.g., jet-'(go) hoksaang').

I argue that jet in Cantonese has not grammaticalized as much as yi in Mandarin. Even when jet ‘one’ functions as an article, it still requires the presence of a classifier. I argue that Cantonese numerals stay in Spec, CIP (11a), while the article jet is adjoined to the Classifier head (11b).

- a. [ClP samm [CT -go [NP hoksaang]]]  b. [ClP [CT jet-go [NP hoksaang]]]  
Regarding why this intermediate stage exists, it is standardly assumed that when a specifier is merged into the structure, its sister projects. I suggest that when a specifier is reanalyzed as a head, initially it cannot project, which means at this point it cannot take a complement. As a result, the relevant element is first adjoined to another head before it is reanalyzed as an independent head.

Turkish provides more evidence for the proposed intermediate stage. Bir ‘one’ in Turkish is assumed to be either a numeral or an indefinite article (e.g., Yukseker 2000). As an indefinite article, bir has to be immediately adjacent to the noun (12). I propose that Turkish numerals stay at Spec of Numeral Phrase (12a), and that the article bir is head-adjointed to Noun head (12b).

- a. [NumP bir [Num' yi [NP kitap]]]  b. [NP yi [NP bir kitap]]  
  one new book  new a book (Yukseker 2000)
Finally, the Beijing dialect (closely related to Mandarin) provides more support for the intermediate stage. Yi-N phrases in the Beijing dialect also cannot be used to answer ‘how many’ questions. Thus I argue that yi is an indefinite article there. However, the tone of yi in Beijing dialect yi-N phrases indicates there is always a classifier present (null ge, see Du 1993 and Jing 1995). Based on this, I argue that Beijing dialect yi is head-adjointed to Classifier head (like jet in (11b)), which captures the observation that a classifier must be present when yi is an article.

**Conclusion:** This paper argued that: 1) yi in Mandarin is ambiguous between a numeral and an indefinite article; 2) the numeral yi stays at Spec, CIP while the article yi is reanalyzed as an independent head projecting a phrase; 3) there is an intermediate stage of grammaticalization where the article jet (Cantonese) and the article bir (Turkish) is adjoined to another head.