Syntactic Agreement as a Disambiguation Task: Evidence from Japanese Adjectives

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Ambiguities and Agreement:
Preminger (2014) defines *Agreement (or φ-agreement)* as morpho-phonologically overt covariance in φ-features (e.g. person, number etc.) between a verb-like element (e.g. a lexical verb, tense etc.) and one or more nominal arguments.
(1) ha-ncig-im   dibr-**u**   (2) a. I run.   (cf. *I runs.)
    the-representative PL spoke-**3PL**   b. He runs. (cf. *He run.)
    'The representatives spoke.'   (Preminger 2014: 6)
In (1)/(2), φ-agreement takes place between the subject and T(ense). As a result, the specific φ-morphemes appear on the verbs, which implies that the phonetic form of the verbs is determined through agreement among several possibilities. That is, φ-agreement results in phonological disambiguation. On the other hand, agreement also takes place with phonologically null pronoun *pro,* e.g. in a rich-agreement language like Spanish.
(3) a. Están   cansadas.   b. *The representation of (3a):*
       be-3PL tired-F.PL   pro Están cansadas
       'They are tired.'   (Holmberg 2005: 536)
Since *pro* inherits the φ-features of T for its identification through agreement, the interpretation is fixed to [3rd person, plural], namely *they* in (3). If no identification occurs, *pro* gets a default (arbitrary) interpretation. In other words, *pro* can intrinsically mean any pronoun but by applying agreement, the meaning is restricted to one of the pronouns, e.g. *they* in (3), which implies that φ-agreement can trigger semantic disambiguation. This presentation focuses on semantic ambiguities observed in Japanese adjectives and demonstrates that those adjectives are disambiguated through agreement both phonologically and semantically.

Adjectives in Japanese:
In Japanese, adjectives are classified into two morphological types. One is so-called canonical adjectives, whose stem the morpheme *-i* attaches to in the prenominal position (→4). The other is "nominal" adjectives, whose stem the morpheme *-na* attaches to (→5).
(4) a. taka(k)-i   biru   b. *taka(k)-na biru
       high-I   building ('a/the high building')   high-NA   building
(5) a. sizuka-na heya   b. *sizuka-i   heya
       quiet-NA   room ('a/the quiet room')   quiet-I   room
Furthermore, there are some adjectival stems that allow both morphemes *-i* and *-na* to attach to.
(6) a. ooki(k)-i/-na   te   b. yawaraka(k)-i/-na nuno
       big-I/-NA   hand ('a/the big hand')   soft-I/-NA   cloth ('a/the soft cloth')
Interestingly, a semantic difference has been observed between the *-i* form and the *-na* form: the latter has a more restricted meaning than the former (Sasaki 2002 among others).
(7) a. watasi-no ooki(k)-i   ani   b. watasi-no ooki-na   ani
       I-Gen   big-I   brother   I-Gen   big-NA   brother
       'my big brother (physically)'   'my big brother (physically)'
       'my older elder brother'
Although the data in (7) have been already reported, no explanation was given yet. This work aims to explain how the *i/na*-alternation takes place (i.e. phonological disambiguation) and also

why the *-na* form is semantically restricted (i.e. semantic disambiguation).

Agreement as a Disambiguation Task:
To answer these puzzles, consider the following three syntactic differences between *-i* and *-na* forms. **First**, the tense morpheme can occur with the *-i* form (→8), but not with the *-na* form (→9). (The morpheme *-d* in (9b) is an allomorph of *-na*.)
(8) a. tiisa(k)-i imooto   b. tiisak-at-ta   imooto
       little-I   sister ('a/the little sister')   little-Cop-Past sister ('a/the sister who was little')
(9) a. tiisa-na   imooto   b. *tiisa-d-at-ta   imooto
       little-NA   sister ('a/the little sister')   little-NA-Cop-Past   sister
Second, the subject can be marked either with nominative Case or with genitive Case in the case of the *-i* form. With the *-na* form, the subject marked with nominative Case is degraded.
(10) a. kuti-ga/-no   tiisa(k)-i   kabin-o   kat-ta.
        opening-Nom/-Gen   small-I   vase-Acc   buy-Past
        'I bought a vase whose opening is small.'
     b. kuti-??ga/-no   tiisa-na   kabin-o   kat-ta.
        opening-Nom/-Gen   small-NA   vase-Acc   buy-Past
Third, the *-na* form must accompany its modifying noun (→11), while the *-i* form can serve as an independent predicate (with tense) (→12):
(11)   ??kabin-no tiisa-na   koto   (12)   kabin-no tiisa(k)-i   koto
        vase-Gen   small-NA fact   vase-Gen small-I   fact
        ('the fact that a vase is small')   ('the fact that a vase is small')
     In order to capture the first and second points, the following structures are proposed: Given nominative Case is assigned by T, the *-i* form projects TP/CP (→13) while the *-na* form projects Pred(icate)P (→14) (cf. Nishiyama, 1999), which has neither tense nor ability to assign Case:
(13)   [[$_{CP}$ [$_{TP}$ [$_{PredP}$ [$_{AP}$ ooki(k)]-i(Pred)]-Ø]   C] [$_{NP}$ ani]]   (→7a)
                    big   -I   -Nonpast   brother
(14)   [[$_{PredP}$ [ooki]-na(Pred)] [$_{NP}$ ani]]   (→7b)
            big-NA   brother
Also, the third point can be explained by appeal to φ-agreement triggered by Pred. (In fact, Japanese φ-morphemes are not overtly realized, so that φ-agreement in Japanese means constructing a syntactic dependency with a nominal argument for agreement.) Suppose that the default form of the adjective is the *i*-form. Unless Pred triggers φ-agreement, the default form is assigned. This analysis is an extension of the discussion on *pro* in (3), where *pro* gets a default (arbitrary) interpretation if no identification occurs (by agreement). The adjective *ooki* gets into the syntactic derivation with no morpheme (i.e. with neither *-i* nor *-na*). If Pred agrees with NP for φ-features--namely *ani* in (14), the agreement fixes phonological realization of Pred to the *-na* form. That is, agreement disambiguates phonological realization of *ooki* between *-i* and *-na*. At the same time, the interpretation of the adjective is also disambiguated: while the *-i* form adjective in (7a) remains ambiguous between two interpretations 'big' and 'older' because of no agreement, the meaning of the *-na* adjective in (7b) is restricted to 'big', i.e. the interpretation is disambiguated by agreement. By utilizing natural properties of agreement as a disambiguation task, the proposed system explains the *i/na*-alternation involving semantic restriction.

Further Support from Cape Verdean Creole (CVC):
In fact, the same type of phenomena is also observed in CVC. Adjectives optionally agree with their modifying nouns in CVC:

(15) a. Elsa e   un **bon** mudjer. b. Elsa e   un **boa**   mudjer.
      Elsa COP a   good woman   Elsa COP a   good   woman
      ('Elsa is a good woman.')   ('Elsa is an attractive woman') (Baptista 2002: 68)

If agreement takes place, the adjective *bon* changes to *boa*, i.e. the agreement fixes phonological realization of the adjective to *boa*. Also, the semantic range of *good* is narrowed down and limited to *attractive*, which originally belongs to the semantic range of *good*. These data lend further empirical support for our proposal that agreement is a disambiguation task.

Selected References:

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