

## A Formal Semantics of the Javanese Speech Level System

**Speech Levels and Lexical Classes.** Javanese sentences can generally be assigned to one of three ‘speech levels’, called *ngoko* (N), *madya* (M), and *krama* (K). The *ngoko* speech level is canonically used towards intimates and addressees of similar status, while *krama* speech level is used toward addressees of higher status and low intimacy. The *madya* level serves as a “half-way house” (Wolff & Poedjosoedarmo 1982) between these two endpoints, canonically used in situations where the factors determining the choice of speech level are in conflict. The speech level of a sentence is formally marked by the choice of lexical items belonging to paradigms of suppletive alternants with identical truth-conditional content but differing in terms of the speech levels with which they are compatible. The following example from Clynes (1989) illustrates how distinct combinations of lexical alternants combine to determine the overall speech level:

(1)	<i>Bu Siti sampun nedha ingkang menika.</i>	<b>Krama</b>
	<i>Bu Siti mpun nedha sing niku.</i>	<b>Madya</b>
	<i>Bu Siti wis mangan sing kuwi.</i>	<b>Ngoko</b>
	Ms. Siti already eat REL that	

“Bu Siti has already eaten that one.”

In (1), the three alternants for ‘already’ are each compatible with only one of the levels, and thus the choice of any one of these alternants serves to unambiguously mark the speech level of the sentence as a whole. The same holds for the alternants for ‘that’. The two alternants for ‘eat’, meanwhile, show a two-way contrast that divides sentences into either the *ngoko* or non-*ngoko* level, while the choice between the two alternants for the relative clause marker REL divides the resulting sentence into either *krama* or non-*krama*. The choice of alternant for one lexical item thus imposes restrictions on the choice of others, with the combination of these choices determining the speech level of the sentence as a whole.

**A Formal Semantics for Speech Levels.** Davis (2021), building on Clynes, derives the syntagmatic properties of the speech level system by dividing the lexical alternants into five classes, formalized in terms of two binary features,  $[\pm K]$  and  $[\pm N]$ . These features indicate the type of context (speech level) that the lexical item is compatible with: *krama* level is signaled by utterances whose lexical items collectively encode the features  $[+K, -N]$ , *ngoko* level by  $[-K, +N]$ , and *madya* by  $[+K, +N]$ . The five lexical classes are then categorized as follows:  $[+K, -N]$  items can be used only with the *krama* speech level,  $[+K]$  items with either *krama* or *madya* speech level,  $[+K, +N]$  items only with the *madya* speech level,  $[+N]$  items with both the *madya* or the *ngoko* speech level, and  $[-K, +N]$  items only with the *ngoko* speech level. In this talk, I show how this feature-based morpho-syntactic account can be mapped to a semantic account that captures the syntagmatic properties of the system in terms of semantic (in)compatibility.

A number of researchers (Potts and Kawahara 2004, McCready 2019, Oshima 2019, a.o.) argue that honorific meanings should be modeled continuously. In the case of Javanese, I posit that “speech level” corresponds to three sub-intervals of the continuous interval  $[0, 1]$ , such that *Ngoko* =  $[0, n]$ , *Madya* =  $[n, k]$ , and *Krama* =  $[k, 1]$ , where  $0 < n < k < 1$ . The location on this interval is given by *SL*, a function from ordered pairs of entities to points on this interval. The value returned by this function depends (in some nebulous way) on relevant properties holding between these entities; in particular, their level of intimacy, relative status, relative age, etc. The features are now understood as making semantic requirements on the speech level holding between the speaker and addressee (encoded as either a presupposition or conventional implicature), as follows:

- $[+N]$  requires that  $SL(s, h) < k$
- $[+K]$  requires that  $SL(s, h) > n$
- $[-N]$  requires that  $SL(s, h) \not< k$  (i.e.  $SL(s, h) \geq k$ )

$[-K]$  requires that  $SL(s, h) \not\geq n$  (i.e.  $SL(s, h) \leq n$ )

This approach has a number of consequences. First, negative feature values can be modeled as negation (e.g.  $-K$  is just the negation of  $+K$ ). Additionally, the syntagmatic constraints on different forms are derived semantically, since  $+K$  and  $-K$  make contradictory requirements of  $SL(s, h)$ , as do  $+N$  and  $-N$ . It also provides an explanation for the non-existence of  $[-N, -K]$  lexical items in the system:  $-N$  requires  $SL(s, h) \geq k$  and  $-K$  requires  $SL(s, h) \leq n$ ; since  $k > n$ ,  $-N$  and  $-K$  cannot be simultaneously satisfied.

**Extension to Deferentials.** Many Javanese lexical items have an additional *deferential* alternant form that signals honorification of a grammatically-determined argument. For example, ‘eat’ has the deferential alternant *dahar*, which signals honorification of the grammatical subject (or the agent of eating). Deferential forms are compatible with all speech levels, and are thus orthogonal to the calculation of speech level. For example, the deferential *dahar* ‘eat’ can be substituted in any of the three sentences in (1): resulting in grammatical sentences in each of the three speech levels, as determined by the other lexical items in sentence:

- (2) *Bu Siti sampun dahar ingkang menika.* **Krama**  
*Bu Siti mpun dahar sing niku.* **Madya**  
*Bu Siti wis dahar sing kuwi.* **Ngoko**  
*Bu Siti already eat REL that*

‘Bu Siti already ate that one.’ (+ the speaker honors Bu Siti)

The semantics of deferentials can be handled straightforwardly by a simple modification to the semantics introduced earlier: While speech level distinctions are anchored to the contextual addressee, deferentials are anchored to some grammatically or lexically determined referent. For *dahar* ‘eat’, the semantics would require that  $SL(s, x) > d$ , with  $x$  resolved to the grammatical subject (or to the agent of eating). The resulting denotation has a free degree variable,  $d$ , which I argue is valued contextually. Combining different contextual valuations of this variable with different speech levels allows for the derivation of the patterns of use described by Uhlenbeck 1970, according to whom the Ngoko and Krama speech levels can be further subdivided into two sublevels, determined by whether deferentials are used for the addressee:

- Ngoko 1: Ngoko speech level, no use of deferentials targeting the addressee.
- Ngoko 2: Ngoko speech level, regular use of deferentials targeting the addressee.
- Krama 1: Krama speech level, no use of deferentials targeting the addressee.
- Krama 2: Krama speech level, regular use of deferentials targeting the addressee.

Space limitations prevent a full discussion, but in short the interaction works as follows. The speech level-encoding lexical items in the sentence set a bound on  $SL(s, h)$ . The lexical semantics of the deferential (used to target the addressee), meanwhile, require that  $SL(s, h) > d$ , with contextually determined degree  $d$ . Given that deferentials are a marked option, their use will require pragmatic justification: in essence, the degree  $d$  should be higher than what otherwise would have been inferred for  $SL(s, h)$ . Consider the case of Krama speech level. Here, the speech level itself sets  $SL(s, h) > k$ . The additional use of addressee targeted deferentials will set  $SL(s, h) > d$ ; pragmatic considerations of markedness will ensure that  $d > k$ , and thus that Krama with deferentials will express a greater degree of deference to the addressee than Krama alone.

**References.** Clynes, A. 1989. *Speech Styles in Javanese and Balinese: A Comparative Study*. Davis, C. 2021. *Deriving Categorical and Continuous Properties of Javanese Speech Levels*. Errington, J. 1985. *Language and Social Change in Java*. McCready, E. 2019. *The semantics and pragmatics of honorification: Register and social meaning*. Oshima, D. 2019. *The logical principles of honorification and dishonorification in Japanese*. Poedjosoedarmo, S. 1969. *Wordlist of Javanese Non-Ngoko Vocabularies*. Potts, C. & S. Kawahara. 2004. *Japanese honorifics as emotive definite descriptions*. Robson, S. & S. Wibisono. 2002. *Javanese English Dictionary*. Uhlenbeck, E. M. 1970. *The use of respect forms in Javanese*. Wolff, J. & S. Poedjosoedarmo. 1982. *Communicative Codes in Central Java*.