

## An associative semantics for basic sentences in Malagasy

*Referent systems*—a semantic tool invented by Vermeulen (1995)—allow for easy models of basic English and Korean sentences but are unable to do the same for Malagasy. This paper introduces referent systems and shows how they can be extended to give a simple model of basic Malagasy sentences.

Referent systems were created to incrementally calculate the *meaning* of a text from the meanings of its parts without referencing its *structure*. This is in accordance with Vermeulen (1994), which observed that hearers are able to interpret texts as they perceive them, starting with the first word and building up the interpretation from there. Moreover, they start interpreting the text before its structure can be known, so they cannot reference the structure during the interpretation. If, however, the interpretation process computes the meaning of a text by combining the meanings of its parts *associatively*, then the structure of the text is irrelevant. A major advantage to the associative approach is that an incomplete text will still have an interpretation, albeit an incomplete one. More generally, *any* continuous segment of a text will have an interpretation, even if the segment is not syntactically well-formed.

Referent systems can also give sentential semantics an insightful treatment (Kracht 1999, for example). In a model of sentential semantics, each word is associated with a set of semantic conditions (like *x is a boy*) as well as a referent system, which associates the semantic variables in the conditions with “tags.” The referent system for the Tagalog verb in (1), for example could associate the variable for its agent with a tag called “ANG” and the variable for its theme with a tag “NG”. The *ng* and *ang* morphemes would each associate their nominal with the appropriate tag (i.e., either “NG” or “ANG”), and when the parts of the sentence are merged together the right interpretation results from matching up the identical tags.

While the basic sentences of SVO and OVS languages as well as the basic sentences of languages with rich case and voice morphology (e.g., Tagalog, Korean, and Latin) are easily modeled in this way, languages which lack rich case morphology and which have SOV, OSV, VSO, or VOS as their basic order are much harder to model. The Malagasy sentence in (2) demonstrates the problem. Both arguments appear to the right of the verb, like in the Tagalog sentence (1), but in (2) both arguments have the same determiner, and thus they both associate their nominal with the same tag. In Vermeulen’s system, this “tag clash” leads to the nominal further from the verb losing its tag, and with it the ability to be interpreted as an argument of the verb.

To provide a reasonable model of Malagasy, then, referent systems must allow two arguments with the same tag to coexist on the same side of the verb. This paper shows that this can be accomplished by allowing tags to dissimilate when they come into clash. This dissimilation is done in a way that allows for the argument’s original tag to be recovered (so that it can still be matched to the appropriate tag on the verb), and it also preserves the associative property of referent systems. Extended in this way, referent systems can model not only basic sentences in languages like Malagasy, but also double object constructions in English and Tagalog (where the same kind of situation arises in “directional focus” sentences).

- (1) Naghugas ng pinggan ang bata. (Tagalog)  
PAST.AF.wash NG plate ANG child  
“The child washed a plate.”  
(Schachter and Otones 1972)
- (2) Namono ny sifaka ny gidro. (Malagasy)  
PAST.AF.kill DET sifaka DET gidro  
“The gidro (red-fronted lemur) killed the sifaka (Verreaux’s lemur).”

## References

**Kracht, Marcus:** Agreement Morphology, Argument Structure, and Syntax, in: ESLLI 1999

**Schachter, Paul/Otones, Fe T.:** Tagalog Reference Grammar University of California Press, 1972

**Vermeulen, C. F. M.:** Incremental Semantics for Propositional Texts, Notre Dame Journal of Formal Logic 35, Nr. 2 Spring 1994, 243–271

**Vermeulen, C. F. M.:** Merging without Mystery or: Variables in Dynamic Semantics, Journal of Philosophical Logic 24 1995, 405–450