Semantic descriptions at the service of understanding grammaticalization and vice versa: the case of NP-strategies for Expressing Reciprocity

**Introduction:** Reciprocal constructions are often defined as grammatical means for encoding symmetric relations. The verb, *hugging*, for instance, reflects this symmetric relation: there are two participants A and B, where A stands in relation to B just as B stands in relation to A (*inter alia* Lichtenberk 1985). The current paper focuses on the NP-strategies for expressing reciprocity, in which the encoding is non-verbal, i.e., verbs in the relevant constructions are transitive (unlike verbal encoding of reciprocity). Thus, comparing (1a), a reciprocal sentence, which denotes a symmetric relation between its participants, with (1b), they are the same in terms of the predicate and argument structure.

(1) (a) James and Beth love each other; (b) James loves Beth.

It has been repeatedly observed, however, in the literature that cross-linguistically the same NP-strategies that encode symmetric relations e.g., *each other* in (1-3), express other relations where reciprocity is impossible (Fiengo & Lasnik 1973; Dougherty 1974; Lichtenberk 1985; Dalrymple et al. 1998; Williams 1991; Beck 2001; Haas 2010; Evans et al. 2011), as in (3). As *each other* in (3) is not used in a symmetric construction, for when A hides behind B, B cannot also hide behind A.

(2) They were looking at each other.

(3) They were hiding behind each other.

Various studies have attempted to explain the range of truth-conditions these constructions have (Dougherty 1974; Langendoen 1978; Higginbotham 1980; Lichtenberk 1985; Dalrymple et al. 1998; Williams 1991; Beck 2001; Filip&Carlson 2001; Winter&Sabato 2012; and Mari 2013). Most of these approaches assume that the basic meaning of these constructions is to denote symmetric relations and that under certain *logical* constraints this meaning can be weakened. These semantic approaches, however, failed to notice that similar sentences in these constructions have different truth conditions in different contexts. Compare (4a) in two different contexts (4b-c). The truth conditions of (4b) do not include a symmetric relation, while those of (4c) do.

(4) a. They will wake each other up.
   b. I never put my twins in the same crib, because they will wake each other up [i.e., it is sufficient that only one of them will wake up the other].
   c. They made an agreement that they will wake each other up [understood as in taking turns to sleep].

**Main Claim:** Based on an examination of the entire range of truth-conditions these constructions have repeatedly fulfill across languages, I propose the opposite position: the basic meaning of these constructions has weaker semantics. Accordingly, the relevant constructions are ‘unspecified constructions’, designated with the following definition:

(5) Unspecified constructions: expressions used in relations between two (defined) sets (or more) without specifying which set occupies which position.

(6a) captures this definition for the set A with two or more members and the relation R. For reasons that will become clear, the truth conditions in (6b), when the set A has only two members, are provided as well:

(6) (a) $|A| \geq 2 \land \forall x \in A \exists y \in A (x \not= y \land (Rxy \lor Ryx))$
(b) $|A| = 2 \land \exists x,y \in A (x \not= y \land Rx y)$

(6) states that for a given set A, for each member of the set, it is true that it is a member of a subset of two members of the set A, standing in the relation R. Accordingly, such constructions only necessitate that each member of the set stands in a single relation to another member of the same set. Although this is necessarily true for all of the sentences with these expressions, these are not sufficient conditions to capture only true sentences in many cases. The given context determines the specific meaning of a given sentence, and a full semantic account provides an explanation of how it is specified/ become stronger (and in certain contexts it is strengthened to have a symmetric interpretation). It is worth mentioning that this different semantic take on these constructions is compatible with the fact that cross-linguistically almost all of the NP-strategies that express reciprocity do not consist of linguistic expressions that lead directly in a compositional way to a symmetric reading (English with the component "each" is the exception. cf. Heim et al. 1991).

**Historical evidence in support of this claim:** The paper will focus on the grammaticalization of a specific type of the NP-strategies among the Semitic languages: the two-unit constructions, from which all other constructions in the Semitic languages developed (Bar-Asher Siegal 2014). These constructions consist of two components, each filling a different argument position of the verb. In the earlier dialects of Akkadian, for example, the two-unit construction contains a repetition of *ahum* “brother”:
For a given set of individuals

In conclusion, "They do not jostle each other." (TCL 19 63:45)

The two-unit constructions in Semitic resulted from grammaticalization of NPs (pronouns included) to become these NP-unspecified constructions. In the case of Akkadian, it is the grammaticalization of 

"brother" repeated in different syntactic position. Therefore, it is my goal to examine how these constructions developed. Previous work on the evolution of two-unit constructions focuses on the range of phrases that tend to develop into reciprocal markers (Heine&Kuteva 2002; Heine&Mysashita 2007; Nedjalkov 2007) or on specific constructions in German and English (Plank 2008, Haas 2010). Such accounts, however, do not explain how these constructions developed the specific truth-conditional semantics they have. Taking the semantics defined in (6) as a starting point, I argue that the origin of all types of the constructions found among the Semitic languages can be explained in light of the truth-conditions formulated in (6). This will be schematically illustrated with the type consisting of pronominal expressions. It should, at this point, be noted that (6) can be paraphrased in the following way:

(8) For a given set of individuals denoted by NP, every individual is part of a pair in which - someone R someone

In fact, the formula "someone R someone" better represents (6b) which is the case when the unspecified relation is held between two participants only (and consequently we must assume that the grammaticalization was from the construct used with only two participants). In light of this, a construction comprised of two indefinite pronouns (using Haspelmath's 1997 terminology) is expected, as seen in (9), in the Judeo-Arabic Moroccan dialect of Tafilalt:

(9) muhammad u-musa taw si l-si kadu
   "Muhammad and Moses give each other a gift (p.c. with consultant)"

Similarly, in Biblical Hebrew the first component "šī, “man”, is a regular indefinite pronoun, and the extension of the use of the indefinite pronoun is accompanied by the addition of a second different correlative component (marking the distinctness requirement, i.e., x≠y): "āhīw “his brother” with a genitive suffix pronoun referring to the first component, i.e., "šī “man.”

(10) wē-šī ʿāh-īw lōʾ yidḥāqū
   "They do not jostle each other.” (Joel 2:8)

Thus, only by assuming (6) as a representation of the truth-conditions of these NP-strategies, it becomes clear how a two-unit construction consisting of two indefinite pronouns grammaticalized to express the function of what was designated as "unspecified constructions" (6). If these constructions primarily denote symmetric relations, it would be impossible to explain how these specific forms grammaticlized for this function. (In the paper, similar explanations will be provided for all 6 types of the NP-strategies found in the Semitic languages.)

In conclusion, this paper has a twofold goal:

- To demonstrate how a rigorous semantic analysis of a linguistic phenomenon produces better explanations of a historical development that involves a semantic shift (from NP-s to the relevant unspecified constructions), as it motivates a more nuanced and precise analysis.
- To point out that a historical analysis can motivate a direction in analyzing the semantics of a given phenomenon.