DECOMPOSING COORDINATION

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BACKGROUND

There is a cross-linguistically rich and consistent semantic allomorphy between coordination and quantification, resisting morphosyntactic and semantic unification. Such morphemes—like Japanese mo below—are ambiguously flavoured with coordinate, quantificational and focal-additive semantics.

JA NP ANESE

(1) John-mo Mary-mo hanashimasu
  John-µ Mary-µ talked
  COORDINATION: ‘John and Mary are talking.’
(2) dono gakusei-mo hanashimasu
  indet student-µ talk
  UNIVERSAL: ‘All students are talking.’
(3) Bill-mo hanashimasu
  Bill-µ talked
  ADDITIVITY: ‘Bill too is talking.’

Among many languages exhibiting this allosemry/allomorphy are Sinhala (Hagstrom 1998; Slade 2011), Malayalam, other Dravidian languages (Jayaseelan 2001, et seq.), Cantonese, Mandarin, Hungarian (Szabolcsi 2012, et seq.), Serbo-Croatian (Arsenijević 2011).

PROPOSAL

English and and its counterpart in most other European languages don’t exhibit such a diversity. This paper explains the manifest difference between English-type (J-type) coordination and Japanese-type (µ-type) coordination. Specifically, we propose a universal decomposition of coordination with quantificational and additive structures forming a compositional partition thereof. We utilize den Dikken’s (2006) J(unction) analysis (cf. Slade 2011; Szabolcsi 2013) by locating ‘true’ coordination locus above the molca terminals heading a separate and independent projection µP. We take J0 as incarnating the intersective (∩) connective, while µ0 establishes a subset (⊂) relation between the complement and its alternative set.

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\begin{align*}
\text{J}_P & \quad \begin{cases}
\begin{array}{c}
\text{quantification/NPI/additive} \\
\mu_P & \mu^0 & \text{coordinand}_1
\end{array}
\end{cases} \\
\text{J}_0 & \quad \begin{cases}
\begin{array}{c}
\text{quantification/NPI/additive} \\
\mu_P & \mu^0 & \text{coordinand}_2
\end{array}
\end{cases}
\end{align*}
\]

Our proposal derives the following generalisations on coordinator typology: The J-type coordination has propositional uses and does not double (*John and Mary and), and cannot have quantificational or additive uses. The µ-type on the other hand combines DPs, doubles (John-mo/ca Mary-mo/ca), and can have quantificational, additive and disjunctive uses (latter addressed below).

The lexical meanings we propose for J0 and µ0 are the following:

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\begin{align*}
\text{(8) a. } & \begin{cases}
\mu^0([t]\cap[t^e])\cap(S^e) = R \subseteq S \\
\mu^0([t]\cap[t^e])\cap(Q^{et, t}_1 \cap Q^{et, t}_2)
\end{cases} \\
\text{type } & \langle et, \{et, t\}\rangle \\
\text{(8) b. } & \begin{cases}
\mu^0([t]\cap[t^e])\cap(Q^{et, t}_1 \cap Q^{et, t}_2)
\end{cases} \\
\text{type } & \langle ett, \{ett, ett\}\rangle
\end{align*}
\]

The lexical meanings entail that universally both µ and J need to occur when two DPs of type e are coordinated if no type-shifting is available. Specifically, we propose the structure (9a) for John and Mary (cf. Winter 1996). Note that ∩ marks Montague’s typeshift from type e to et, and that [µ ] applied to a after the ∩-typeshift is the principal filter of a. Still both µ and J must be present in (9a): µ alone would result in a type mismatch, and J alone would result in the empty set (the intersection of two different singleton sets), which is blocked as a contradiction (cf. Gajewski 2008).
Our proposal of two distinct types is further supported by evidence from historical change. Seven branches of Indo-European (Indo-Aryan, Iranian, Italic, Celtic, Greek, Germanic, and Slavonic) show a development from a system of coordination using a μ-type coordinator to one using an J-type coordinator (Mitrović 2011). Only some modern Slavonic languages have preserved a μ-type coordinator (Arsenijević 2011). Our proposal is supported especially by the fact that in no case, the same morpheme ever developed from a μ-type to an J-type coordinator, but instead a clausal coordinator was extended to DP-coordination. For example, Latin had both coordinators -que (μ-type) and et (J-type), but modern Italian only e (J-type).

**DERIVATION**

All three uses of μ follow from the proposal via the structure in (9). [I.] Structure (9a) is correctly predicts conjunction, as it entails that the singleton sets {John} and {Mary} both be subset of the verbal predicate. [II.] For universal quantification, we follow Shimoyama (2001) to assume that the ‘indeterminate’ dono combined with the common noun gakusei is interpreted as a set of type et: the set of students. The truth conditions of (9b) are correctly predicted: the students must form a subset of the talkers. [III.] The additive use in (9c) follows from recursive exhaustification (cf. Fox 2007): One scalar alternative to Bill-mo is just bare Bill. Therefore the second level exhaustification entails that EXH(Bill is talking) must be false. This predicts the correct interpretation: ‘Bill is talking and not only Bill is talking.’

Unlike previous proposals, we further predict that universal quantifier mo and conjunction mo are the same morpheme. Our proposal predicts therefore that mo can occur only once to express coordination of universals, while in English every and and must cooccur.

**DISJUNCTION**

Old Church Slavonic (11) and Tocharian (12) show that the conjoining particle (i, pe, resp.) are part of the expression of disjunction in addition to a disjunctive/interrogative morpheme we gloss as κ0 (after Japanese ka, inverse of mo). Given the overt morphological evidence for μ-particles being contained in the disjunction word at morpheme level, our paper also proposes a composition of (exclusive) disjunction involving all three J, μ and κ heads, à la (13).

(10) dono gakusei-mo (-mo) dono sensei-mo (-mo) hanashita

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\text{‘Every student and every teacher talked.’}
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**REFERENCES**