"Fuzzy" roots in syntax and a fully contextual account to coordination

SYNOPSIS. In this paper, I argue that coordinators may be "fuzzy" roots in that they can be category-less, labeled/categorized by a larger syntactic domain they occur in. In a fully contextual approach, this special property of coordinators allows us to explain coordination data and extraction patterns. In light of this, the paper argues for a specific view to category/categorization and the computational system.

BACKGROUND. Coordinate structures (CSs) are traditionally treated as category-specific projections, i.e., the &P analysis (2). This is based on the view that coordinators form a closed category and that & connects (or may select for) two conjuncts. However, if [& Conj2] is an X'-level in the sense of the traditional X-bar schema, it should be of a certain category, reminiscent of a V'-level as (3). Empirically, it is clear that the complex formed by a coordinator and either conjunct ([Conj1 &] or [& Conj2]) cannot be a category-specific constituent, as is cross-linguistically pervasive (4). Moreover, there are tensions between standard Coordination-of-Likes condition (CL; Williams 1978, Sag et al 1985, Bowers 1993, Beavers & Sag 2004, Chaves 2006, etc.) and coordination-of-unlikes (CUL) data, e.g., (5).

(2) [$_{\&P}$ Conj1 & Conj2]   (3) [$_{V'}$ eat apples]   (4a) *[$_?$ books and], *[$_?$ and toys]   vs.   [$_D$ books   and   toys]

(4b) *[$_?$ wan   he], *[$_?$ he   chi]   vs.   [$_{N/V}$ wan   he   chi]   (Mandarin Chinese; MC)
       playing   and   and   eating   'playing and eating'

(4c) *[$_?$ los   libros   y], *[$_?$ y   el   bolígrafo] vs. [$_D$ los libros y el bolígrafo]   (Spanish)
      the-PL book-PL and   and   the-SG   pen-SG   'the books and the pen'

(5) a. You can depend [$_{CS}$ [$_{PP}$ on my assistance] and [$_{CP}$ that he will be on time]].   (Sag *et al.* 1985: 165)

    b. John devoured [$_{CS}$ [$_{DP}$ only pork] and [$_{PP}$ only at home]].   (Grosu 1985: 232)

    c. Pat remembered [$_{CS}$ [$_{DP}$ the appointment] and [$_{CP}$ that he had to be on time]]. (adapted from Zhang 2009)

So, it is doubtful that coordinators are selective heads and that CSs are category-specific projections. Zhang (2009) proposes that coordinators may have no categorizing/labeling capability like roots, due to a lack of intrinsic categorial feature, a core assumption I follow. Other similar items, such as Chinese modifier-marker *de* (6), are compatible with both below and above word-level elements; see (6).

(6a) [$_{ADJ}$ piaoliang] 'beautiful' vs. [$_{ADJ}$ [$_{ADJ}$ piaoliang] [$_{?→ADJ}$ de]] 'beautiful' (MC)

(6b) Ta pao [$_{ADV}$ hen kuai] (MC)   (6c) Ta pao [$_{?→ADJ/ADV}$ de [$_{ADV}$ hen kuai]].
    he run   very fast (result reading)   'He ran de very fast. (manner reading)'

(6d) You [$_{?→VP}$ de [$_{VP}$ ni   chi]]. (MC)   (6e) You ni [$_{?→N/V}$ [$_V$ chi] de].
    have   de   you   eat   'There is plenty/more than enough for you to eat.'

PROPOSALS AND ANALYSIS. These elements are root-like in that they do not select syntactic contexts, that they cannot label/categorize, and that they may tolerate category switch and result in (corresponding) interpretation changes (thus their meaning may also be structurally determined); e.g., (5), (6b-e). Thus, they are largely underspecified, reminiscent of roots (Harris 1996; Acquaviva 2009). Behind this is the potential lexicosemantics-syntax mismatch: selection may require that such an item selects for some element(s), but it may not syntactically project as a result of selection. Assuming a standard bottom-up structure building, consequences are significant in a contextual analysis.

First, the fact that Conj1 must satisfy (c-)selection from the main chunk as in (7) is captured as a direct result of its structural height, while Bošković (2020) is insufficient for such data. Second, Zhang's (2009) statement that Conj1 always determines the category of CSs cannot be the full picture. If the coordinator is category-less, Conj2 determines the label of [& Conj2] via feature percolation, and Conj1 may have another label, which is empirically solid, i.e., (5). This process categorizes the category-free head & by assigning category to a complex structure [& Conj2], a mechanism discussed by Marantz (2001). Conj1 determines, if anything, the relation of the CS to main chunk (e.g., Conj1 is the complement or modifier

of a higher (selecting) head, accordingly so is the CS). Third, a coordinator may create/expand a phase under a contextual view to phases (Bošković 2014). Therefore, only the [& Conj2] complex is rigidly a phase, while phasehood of Conj1 is determined contextually. This captures Bošković (2016a, 2020) where a double-phase configuration is an island and where each conjunct in CSs can be a phase.

(7a) You can depend [[$_{Conj1}$ on my assistance] and [$_{Conj2}$ that he will be on time]].   (Sag *et al*. 1985: 165)
(7b) *You can depend on that he will be on time and my assistance.   (Sag *et al*. 1985: 165)
(7c) John devoured [[$_{Conj1}$ only pork] and [$_{Conj2}$ only at home]].   (Grosu 1985: 232)
(7d) *John devoured only at home and only pork.   (Grosu 1985: 232)

The tension between standard analysis to CSs and empirical data has been removed by abandoning the CL and admitting that Conj1 and Conj2 may have different labels. The current analysis also resolves complications for other systems from data like (8), all accommodated under standard labeling-locality interactions. (8a-d) are explained by regular successive cyclic movement (Bošković 2008). Intriguing is the contrast between (8c-d) and (8e-f). For (8e), the coordinator expands D-phase (9a), the *wh*-object moving to its edge in virtue of successive cyclicity (Bošković 2008) and No-Look-Ahead (Chomsky 1998). When *John* (also a phase) merges, *who* moves to edge, i.e., (9b), violating antilocality (Bošković 1994, 2005; a.o.). (8f) is also accounted for contextually. Since the conjuncts are phases, they create a double-phase configuration, i.e., an island (Bošković 2016a). Thus, extraction is disallowed. Note that (8c-f) cannot be derived under both a traditional derivation (i.e., *who* base generated in θ-position, moveing to surface position), and a base-generation one (LF movement to θ-position; Bošković 1994, 1998, Lasnik 1995, etc.). The latter derivation modifies the internal structure of an existing SO, violating the Extension Condition (Chomsky 1995). So, extraction from conjuncts is fully contextually driven.

(8a) This is the drug which$_i$ athletes take t$_i$ and become quite strong. (Bošković 2020)
(8b) Who did you say that Lulu likes and Tubby hates? (Zhang 2009)
(8c) [What kind of herbs]$_i$ can you eat t$_i$ and not get cancer? (Zhang 2009)
(8d) [What kind of cancer]$_i$ can you eat herbs and not get t$_i$? (Zhang 2009)
(8e) *Who$_i$ did you see John and friends of t$_i$?   (8f) *Who$_i$ did you see friends of t$_i$ and John?
(9a) [$_{D}$ who$_i$ [$_{D}$ and [$_{D}$ friends of t$_i$]]]   (9b) [$_{D}$ who$_i$ [$_{D}$ John t$_i$ and friends of t$_i$]] (antilocality)

Now, why is CC inviolable? In a fully contextual approach, it is crucial that Conj1 is (more) dependent on a higher (selecting) head X, while & on Conj2; see (10). Extraction breaks this connection and Conj1 is unextractable for a reason potentially different from Conj2. This is expected given asymmetries between conjuncts (Dik 1968, Moltmann 1992, Payne, 1985, Haspelmath 2004; Zhang 2009, 2023; a.o.) and that Conj1 must be in Comp,X for (c-)selection. Extraction of Conj2 is bad as in Zhang (2009): [& Conj2] is a word-level-or-above immobile intermediate projection (Chomsky 1994, 1995). If it is a word, minimal search prevents extraction of internal elements. If it is a phase, the phasal complement, i.e., Conj2, is unextractable (Abels 2003).

(10) X Conj1 & Conj2

Analyzing coordinators as fuzzy roots allows a comprehensive account for coordination data under a contextual approach. The Coordinate Structure Constraint (Ross 1967; Grosu 1973; etc.) and CL is eliminated; analyses on rescue-by-PF deletion, edge exceptions (Bošković 2017, 2019, 2020), etc., are left intact. Syntax thus manipulates subtle root-like items. Coordinators and similar cases (e.g., Chinese *de*) are underspecified like roots, but form phrase-level, interruptible elements with conjuncts, rather than un-interruptible words (Julien 2006). Their deficiency in labeling/categorization and non-selection of structural contexts determine distributions under interactions with general mechanisms/conditions, e.g., minimal search, (anti)locality, etc. The analysis thus in turn support the view that categorization is purely syntactic and is realized by a categorizer (Halle and Marantz 1993; Marantz 1997; Arad 2003; Borer 2005a, 2005b, 2013) or category-inheritance from a larger syntactic domain (Marantz 2001).