

# A brief note on a Merge-based theory of child language acquisition<sup>1</sup>

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## A Recap: Structure-building models.

In terms of a merge-base theory of [language acquisition](#), complements and specifiers are simply notations for first-merge (= "complement-of" [head-complement]), and later second-merge (= "specifier-of" [specifier-head], with merge always forming to a head. First-merge establishes only a set {a, b} and is not an ordered pair--e.g., an {N, N}-compound of 'boat-house' would allow the ambiguous readings of either 'a kind of house' and/or 'a kind of boat'. It is only with second-merge that order is derived out of a set {a {a, b}} which yields the [recursive](#) properties of syntax--e.g., a 'House-boat' {house {house, boat}} now reads unambiguously only as a 'kind of boat'. It is this property of recursion that allows for projection and labeling of a phrase to take place <sup>[1]</sup>, in this case, that the Noun 'boat' is the Head of the compound, and 'house' acting as a kind of specifier/modifier. External-merge (first-merge) establishes substantive 'base structure' inherent to the VP, yielding theta/argument structure, and may go beyond the lexical-category VP to involve the functional-category light verb vP. Internal-merge (second-merge) establishes more formal aspects related to edge-properties of scope and discourse-related material pegged to CP. In a Phase-based theory, this twin vP/CP distinction follows the "duality of semantics" discussed within the [Minimalist Program](#), and is further developed into a dual distinction regarding a probe-goal relation. <sup>[2]</sup> As a consequence, at the "external/first-merge-only" stage, young children would show an inability to interpret readings from a given ordered pair, since they would only have access to the mental parsing of a non-recursive set. (See Roeper for a full discussion of recursion in child language acquisition). <sup>[3]</sup> In addition to word-order violations, other more ubiquitous results of a first-merge stage would show that children's initial utterances lack the recursive properties of inflectional morphology, yielding a strict Non-inflectional stage-1, consistent with an incremental [Structure building model of child language](#). <sup>[4]</sup>

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<sup>1</sup> For definition of linguistic 'Merge', see [https://en.wikipedia.org/wiki/Merge\\_\(linguistics\)](https://en.wikipedia.org/wiki/Merge_(linguistics))

Since theory-internal considerations define Move-based (Internal merge) functional categories as the only type of phrasal projections which could serve as potential landing-sites for [move](#)-based elements displaced from lower down within the base-generated syntactic structure – e.g., *A-movement* such as [passives](#) ("The apple was eaten by [John (ate the apple)]"), or [raising](#) ("Some work does seem to remain"; "(There) does seem to remain (some work)") – as a consequence, any **structure-building** which calls for an exclusive lexical stage-1 before a functional stage-2 means that early child speech simply lacks the ability to generate and host elements derived via movement operation. Particularly, the theoretical [specifier](#) position of a functional head is seen as projecting for the sole purpose of hosting moved elements. Hence, according to a structure-building model, early child utterances at the early multi-word lexical stage-1 simply lack movement. In addition to the lack of A-movement talked about by Borer and Wexler, Radford considers the absence of a second kind of movement, termed *f-movement* since it involves movement of a base-generated item into a higher *f*(unctional) position — namely, a head or specifier position within a functional category ([DP](#), [TP](#), [CP](#)) (e.g., [auxiliary inversion](#) from T to C ["Does [he (does) like it]?"]). This glass-ceiling of move-based morphosyntax suggests that all early multi-word utterances (usually associated with children aged 18 to 23 months,  $\pm 20\%$ ) involve flat structure-building elements (N, V) not motivated by movement: what Radford terms *bricolage*. These prosaic bricolage structures are considered lexical/thematic in nature, with any observed early morphology being relegated to lexicalization (such as [derivational morphology](#), or [formulaic](#) chunking) whereby the fixed [morpheme](#) involved is said to be incorporated, unsegmented and undecomposed within the lexical stem. When true [inflectional morphology](#) emerges, it follows a gradual growth trajectory with the simple lexical noun and verb inflections emerging first: e.g., plural [N + [{s}]], gerund [V + [{ing}]], [V + [{en}]], with the later onset of more formal inflections associated with functional phrases DP (e.g., possessive {s}, Case on pronouns ("he" vs "him"), and TP (e.g., Agreement {s}, and Tense {ed})<sup>2</sup>.

### Implications to a Merge-based theory of child syntax

**External Merge (EM):** codes for lexical thematic/argument structure (pegged to the light verb vP)—Case would fall within the scope of EM, vP.

**Internal Merge (IM):** codes for functional formal features having to do with scope, discourse (pegged to CP)—AGReement and Tense would presumably fall within the scope of IM, CP.

Within a Phase-based theory, this twin vP/CP distinction follows the ‘duality of semantics’ much talked about within the Minimalist Program (of Chomsky 1995), and is further developed into a dual distinction regarding a **probe-goal** relation. (See Miyagawa (2010) for discussion).

For example, regarding the AGReement/INFLection of possessive as well as verbal morphology, the mere lack of recursive [ {s} [stem]\_] (with affix-{s} lowering to merge onto the stem) could be singularly interpreted as due to the lack of full movement operations (i.e., lack of internal

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<sup>2</sup> See Radford & Galasso (1998) for the acquisition of inflection <http://www.csun.edu/~galasso/arjg.pdf>.

merge). Thus, a young child at the early initial lexical stage-1 goes from *Merge-based* [(-s) [Tom book]], He [(-s) [drink]] to *Move-based* and recursive [[Tom] 's] and [[drink] s] respectively. In this way, AGR is seen as the quintessential trigger to recursion/Movement. The central tenet of the structure-building model is that such a disparity between the two categories (lexical/EM vs functional/IM) is the main characteristic of any maturation-based theory of child language acquisition. In recent research dealing with the *brain-to-language corollary* (brain imaging devices such as [fMRI](#) and [ERP](#)), some have argued that the schedule for these morphosyntax onsets is pegged to the neurological maturation of the front-left-hemisphere which houses [Broca's area](#) — that area of the brain seemingly responsible for movement-based operations found in language. (Grodzinsky).

Finally, citing the most recent terminology expressed within the Minimalist Program ("Phase-based" theory), the two distinct notions of theoretical Merge could be argued as paralleling earlier developmental insights made in 1990 regarding Radford's maturation-based theory of child syntax--viz., that there are two kinds of Merge which appear to correlate closely with interface properties, capturing much of the **duality of semantics**:

- (i) local/external merge (presumably first pegged to the light verb vP) which is related to more concrete properties of argument structure (and perhaps Case), and
- (ii) distant/internal merge (presumably pegged to CP) which is related to the more abstract edge-properties of Agreement, Scope, or Discourse.

This dual distinction has antecedents which go back to Radford's 1990 original claims of developmental child syntax which calls for an initial lexical-categories/thematic stage-1 (EM, local merge), and a subsequent later functional-categories stage-2 (IM, distant merge). (Galasso 2016).

In conclusion, a merge-based account of early child syntax thus sees the child as passing through an initial non-A Merge-based account of child syntax thus sees the early child as passing first through a non-recursive/external-merge stage-1 whereby exclusive lexical/thematic argument structure is first handled by a vP probe-goal relation. (Very young children who may lack Nominative Case (e.g., 'Him do it') would be said to not yet have a functional light verb vP projection: they would be only at a lexical VP-stage, as discussed in Radford). The child then is seen as emerging from an external merge-based stage-1 (Merge) into a recursive/internal-merge stage-2 (Move) whereby move-operations are available to gradually establish CP distant probe-goal relations (AGR, T).

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