A Hidden Consensus
Computational Invariants of Minimalist Syntax

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Is Minimalism too Diverse?

Minimalism is a **program, not a theory**.
Minimalist theories differ in many parameters:

feature system	privative ⇔ binary ⇔ multi-valued
feature checking	Spec-Head ⇔ Agree
movement	upward ⇔ sideward
trees	traces ⇔ copies ⇔ multi-dominance
constraints	local VS global VS transderivational
grammar mode	derivational ⇔ representational

So is Minimalism just a random hodge podge of ideas, or is there a technical common ground?

Unification via Minimalist Grammars

Minimalist grammars (MGs; Stabler 1997) are a formalization of pre-Agree Minimalism. In recent years, they have been expanded in various directions. (Fowlie 2013; Gärtner and Michaelis 2010; Graf 2011, 2012b, 2014a,b; Hunter 2010; Kobele 2006, 2011; Stabler 2011)

- new feature systems
- a system for implementing all known movement types
- a system for implementing most syntactic constraints
- Agree, phases, and (late) adjunction
- representational characterizations
- mapping to LF structures
- mapping to prosodic structures

MGs have become a flexible formalism that can span the **full range of ideas from the syntactic literature**.

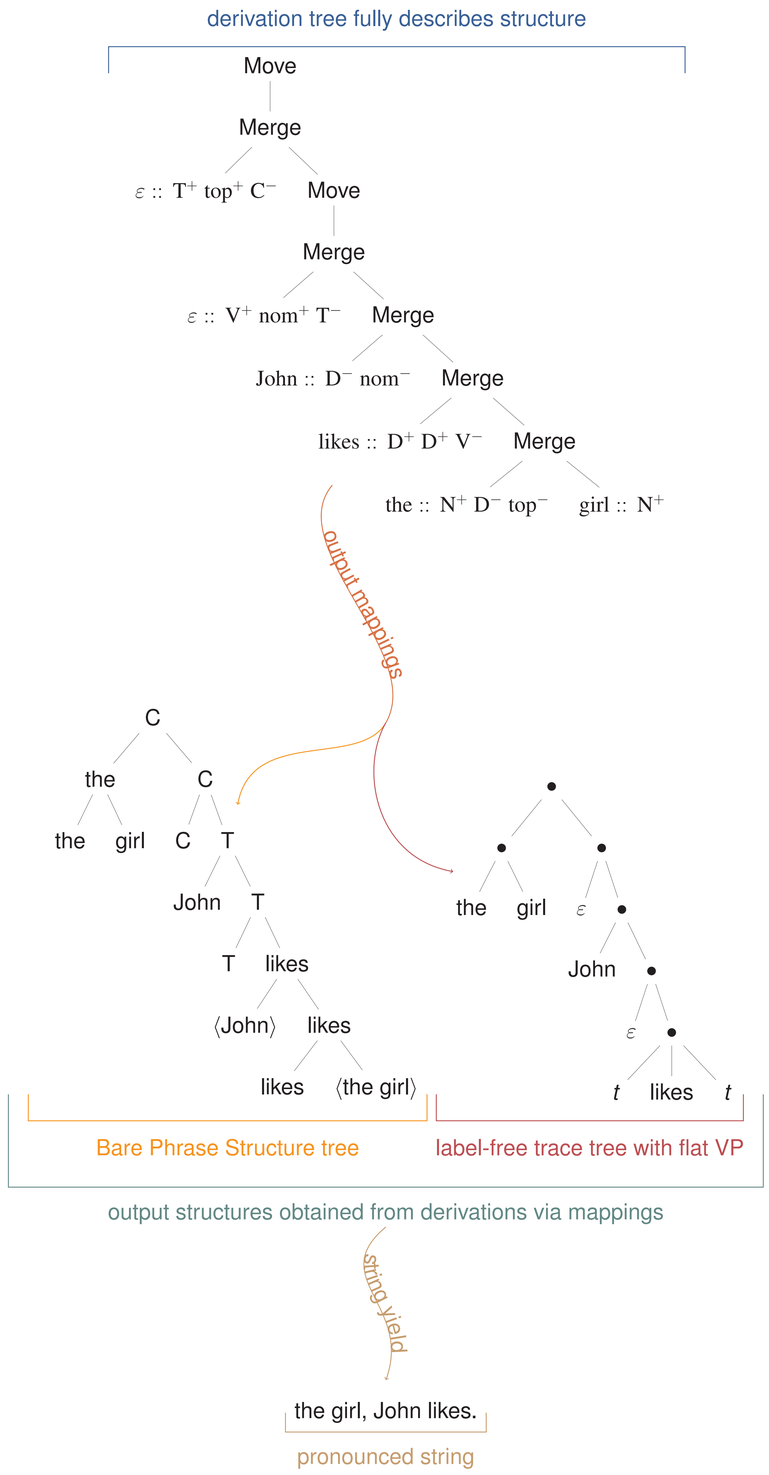
The Common Core

Irrespective of which extensions are added to the formalism, MGs always have a unified characterization.
(Mönnich 2006; Kobele et al. 2007; Graf 2012a, 2013)

Derivational Decomposition
Every MG defines a set of well-formed derivations and a mapping from derivations to output structures.

Finite Working Memory
The derivation trees and the mapping must be computable with a finite amount of working memory.

These two properties do not hold of competing formalisms like HPSG and LFG. Minimalist proposals operate within a narrowly restricted class.



Comparing Minimalist Theories

While Minimalist proposals stay within the same class, they may occupy very different points in that class. We can measure their distance via three notions of equivalence.

Equivalence	Grammars have the same…
derivational	derivations
strong	output structures
weak	string yields

D-equivalent grammars are virtually indistinguishable, they describe the same I-language.

A Few Surprising Equivalences

Many contentious issues have no measurable impact, the **competing pieces of machinery are d-equivalent**:

- privative ⇔ binary ⇔ multi-valued
- features ⇔ constraints
- traces ⇔ copies ⇔ multi-dominance
- derivational ⇔ representational

The choice of movement types has the biggest impact, but even then **weak equivalence usually holds**.

Conclusion

- Minimalist research is characterized by the factorization into two finite working memory components.
- Variation within that class can be precisely measured.
- A surprising number of contentious issues have no measurable bearing on matters of I-language.

References

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