

Multiple wh-Movement is not special: The subregular complexity of persistent features in Minimalist grammars

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The talk in a nutshell

- ▶ Minimalist grammars are a formalization of Minimalism, the dominant theory of syntax. (Stabler 1997, 2011)
- ▶ MGs struggle with multiple wh-movement.
- ▶ But there is an easy fix that
 - 1 preserves the essential computational properties of MGs,
 - 2 makes multiple wh-movement a very natural phenomenon.

Minimalist grammars and movement

Who does Mary think

might

buy what?

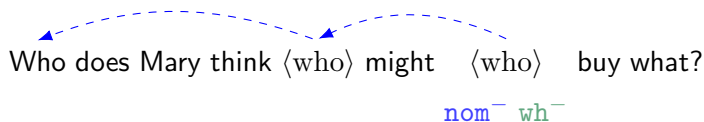
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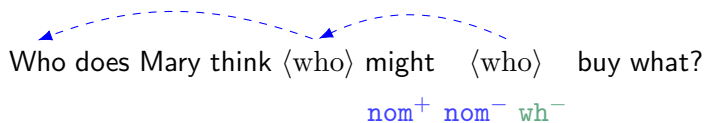


The diagram illustrates movement in a Minimalist grammar. The sentence is "Who does Mary think $\langle \text{who} \rangle$ might $\langle \text{who} \rangle$ buy what?". Two dashed blue arrows show movement from the object positions to the subject positions. The first arrow starts at the first $\langle \text{who} \rangle$ (object of 'buy') and points to the first 'Who' (subject of the main clause). The second arrow starts at the second $\langle \text{who} \rangle$ (object of 'might') and points to the 'who' inside the 'think' clause.

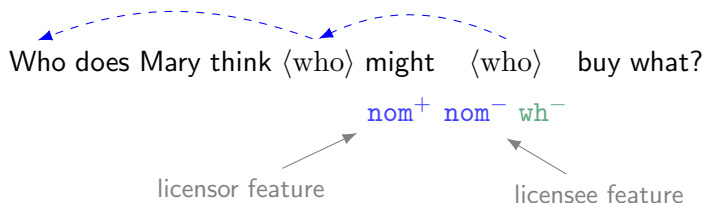
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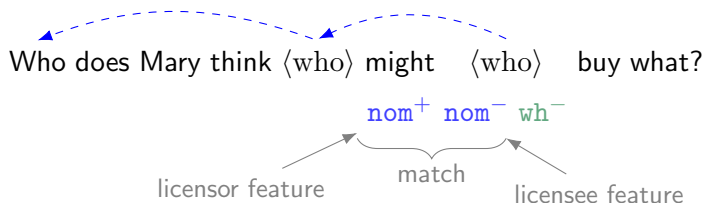
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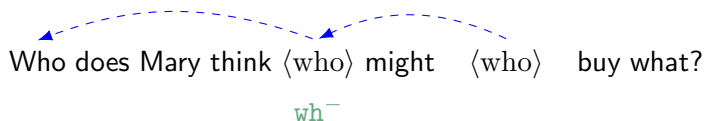
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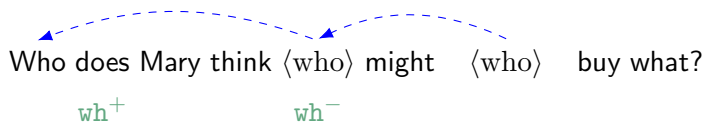
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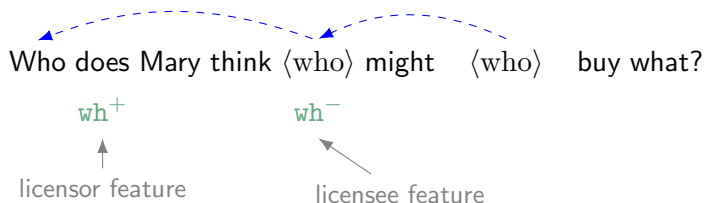
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The diagram illustrates movement in a Minimalist grammar. The sentence is "Who does Mary think $\langle \text{who} \rangle$ might $\langle \text{who} \rangle$ buy what?". Two dashed blue arrows show movement from the object positions (the two $\langle \text{who} \rangle$ phrases) to the subject position (the first $\langle \text{who} \rangle$ phrase).

Minimalist grammars and movement

Who does Mary think $\langle \text{who} \rangle$ might $\langle \text{who} \rangle$ buy what?



Limitation

- 1 No feature can be checked more than once.
- 2 No lexical item (LI) may have more than $n \geq 1$ features.
- 3 Movement is **finitely bounded**:
 - ▶ no LI moves more than n times
 - ▶ no LI is targeted by more than n movers

Minimalist grammars and movement

Who does Mary think $\langle \text{who} \rangle$ might $\langle \text{who} \rangle$ buy what?



The diagram illustrates movement in the sentence "Who does Mary think <who> might <who> buy what?". Two blue dashed arrows indicate the movement of the first <who> to the position of "Who" and the second <who> to the position of "might".

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A problem: Multiple wh-movement

- ▶ In some languages like Bulgarian, more than one wh-phrase moves to the front. (Bošković 2002)

Who what does Mary think might buy

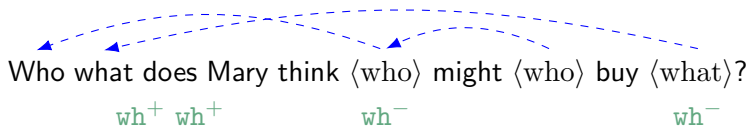
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$\text{wh}^+ \text{ wh}^+ \quad \text{wh}^- \quad \text{wh}^-$



- ▶ **Claim:** no upper bound on moved wh-phrases
- ▶ **Consequence:** impossible with standard MGs

Solution: Persistent licenser features

- ▶ Standard $\text{wh}^+ \Leftrightarrow$ persistent wh_{∞}^+
- ▶ wh_{∞}^+ can be checked more than once (cf. Laszakovits 2018)

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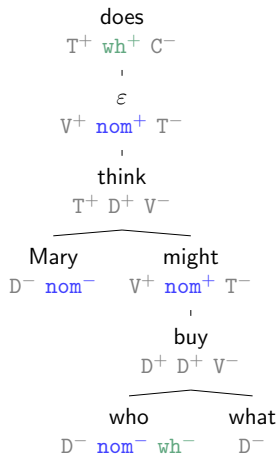
wh_{∞}^{+}
 wh^{-}
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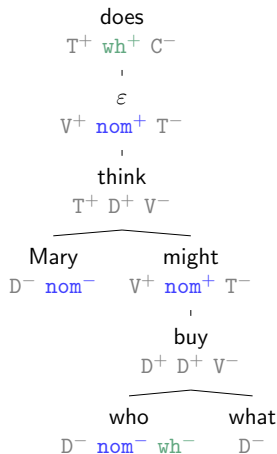
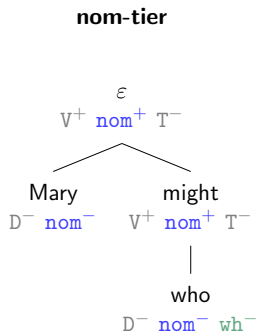
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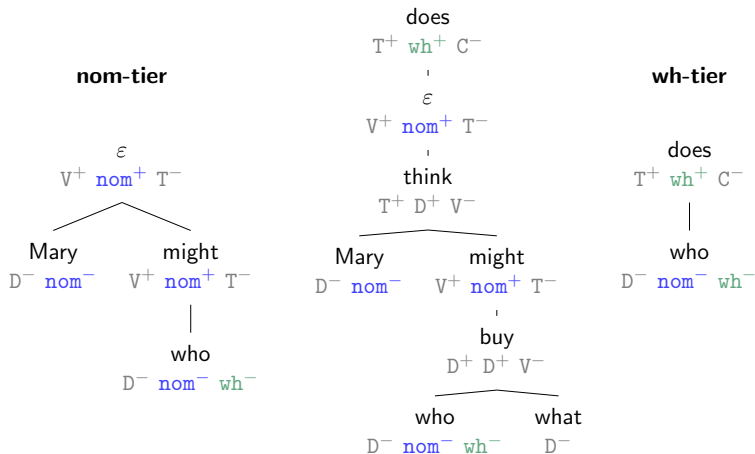
Movement in MGs is tier-based strictly local



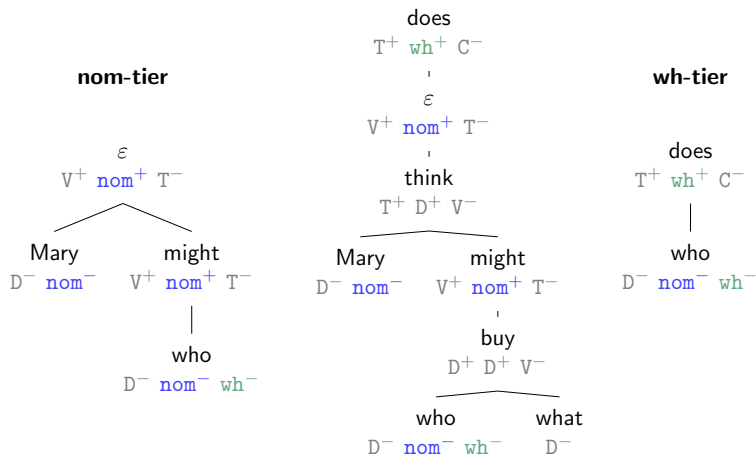
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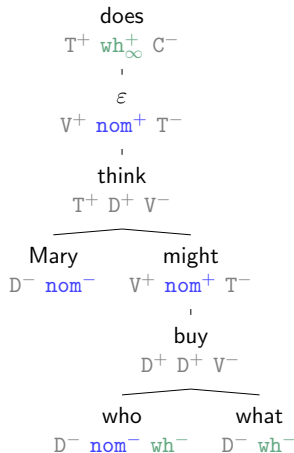
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Feature checking as a constraint on tiers

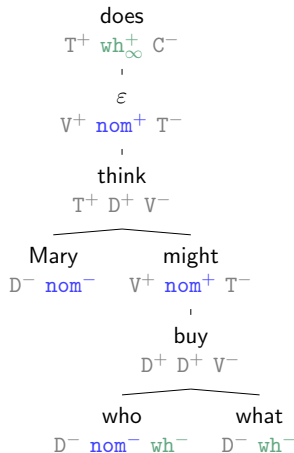
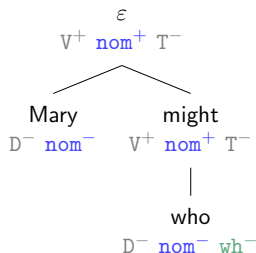
On each f -tier, every f^+ has **exactly 1** f^- among its daughters.

Persistent licensor features are also TSL

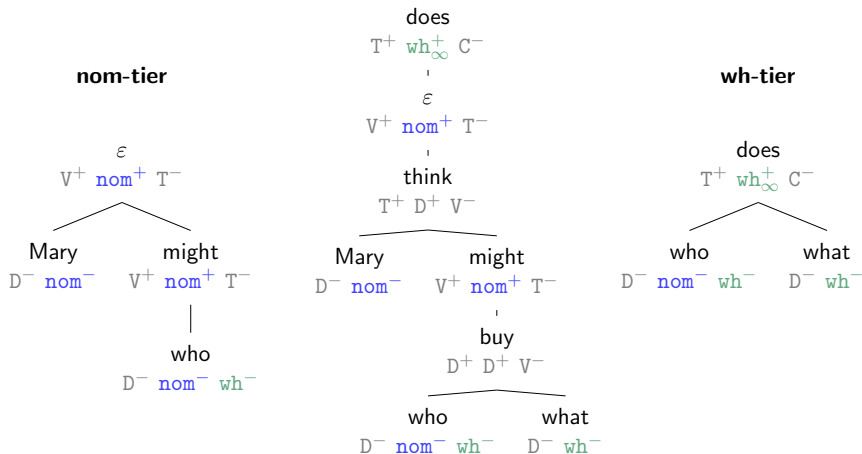


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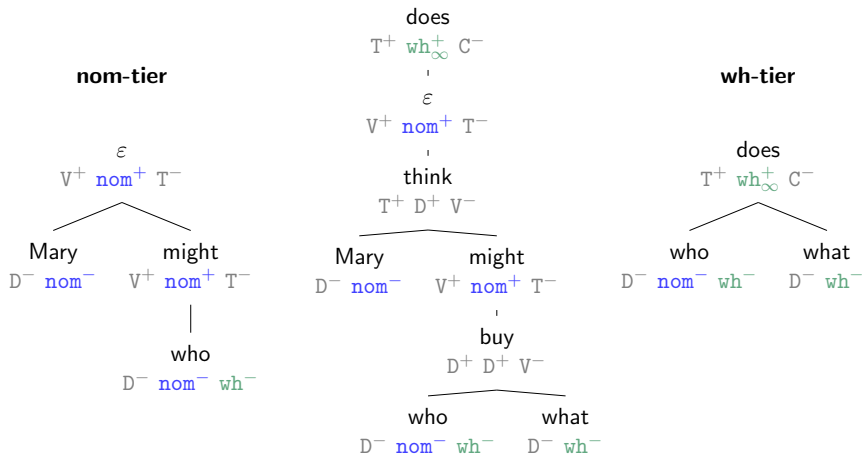
nom-tier



Persistent licensor features are also TSL



Persistent licenser features are also TSL



Persistent feature checking as a constraint on tiers

On each f -tier, every f_∞^+ has **at least 1** f^- among its daughters.

Multiple wh-movement is not special

From the TSL-perspective, multiple wh-movement is already part of standard movement:

- ▶ Standard movement: every f^+ has exactly one f^- daughter
- ▶ **TSL:** “exactly one” = “at least one” + “at most one”

multiple wh-movement standard movement - “at most one”

standard movement multiple wh-movement + “at most one”

Weak generative capacity is unaffected

Persistent features do not increase weak generative capacity, because standard MGs are already at the **expressivity edge**:

- 1 the set of derivation trees is still definable in first-order logic,
- 2 so is the mapping from derivation trees to strings,
- 3 hence the resulting string language is at most an MCFL,
- 4 but every MCFL is already generated by a standard MG without persistent features.

(Harkema 2001; Michaelis 2001)

Conclusion

- ▶ MGs are frequently criticized for their inability to handle multiple wh-movement.
- ▶ But all it takes is persistent features.
(Stabler 2011; Laszakovits 2018)
- ▶ Persistent licensor features preserve
 - ▶ weak generative capacity, and
 - ▶ the TSL-nature of MG derivations.
- ▶ Multiple wh-movement is perfectly natural.

But what about persistent licensee features like nom_{∞}^{-} ?

Good question! Check the paper!

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Acknowledgments

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References

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