

Tough Partial Movement

Michael Clauss
UMass Amherst

Acquisition of Adjectives Across Languages
Utrecht University – 29 November 2013

Roadmap

- Tough Movement phenomena
 - Syntactic Facts
 - Acquisition Facts
- Medial Wh and Partial Movement
- Free Relative Clauses
- Experiment
- Prospects and Concluding Remarks

Tough Movement

- Some English adjectives allow infinitival complements like (1-2)
 - (1) Dora is tough to please
 - (2) It's tough to please Dora

Tough Movement

- Some English adjectives allow infinitival complements like (1-2)
 - (1) **Dora** is tough to please
 - (2) It's tough to please **Dora**
- Thematic Objects of the infinitival clause may be pronounced as Sentential Subjects.
 - This is commonly called Tough Movement (**TM**)

Tough Movement

- Three types, in terms of TM constructions
 - Tough type – Optional movement
 - (1) Dora is tough to please
 - (2) It is tough to please Dora

Tough Movement

- Three types, in terms of TM constructions
 - Pretty type – Mandatory movement
 - (3) Dora is pretty to look at
 - (4) *It is pretty to look at Dora

Tough Movement

- Three types, in terms of TM constructions
 - Heavy type – Infinitival complement barred
 - (5) *Dora is heavy to lift
 - (6) *It is heavy to lift Dora

Tough Movement

- Children's interpretation of TM
 - Many studies show non-adultlike performance on TM constructions (Chomsky 1969, Anderson 2005, inter alia)

Tough Movement

- Children's interpretation of TM
 - Adult parse
 - (7) $Dora_i$ is tough to please t_i
→ Pleasing Dora is tough
 - Child parse
 - (8) $Dora_i$ is tough PRO_i to please
→ Dora has a hard time pleasing (anyone)

Tough Movement

- Becker et al (2012): Children can give TM parses provided the subject is inanimate
 - Inanimates being prototypical objects makes them easier to give TM parses to

Tough Movement

- Becker et al (2012): Children can give TM parses provided the subject is inanimate
 - Inanimates being prototypical objects makes them easier to give TM parses to
 - (9) Dora is tough to lift
→ Child parse
 - (10) The chair is tough to lift
→ Adult parse

Tough Movement

- Two syntactic analyses of TM constructions are possible:
 - Long distance movement – The Sentential Subject moves from the lower clause to the higher one

(11) Dora is tough [PRO to please t]




Tough Movement

- Two syntactic analyses of TM constructions are possible:
 - No long-distance movement – Sentential Subject generated as such, and a rule of construal relates it to the lower Object position
- (12) Dora is tough [PRO to please (Dora)]

Tough Movement

- Chomsky (1977) and related works develop a version of the latter where an abstract operator undergoes local Wh movement within the lower clause

(13) Dora is tough [Op PRO to please t]

A diagram illustrating the movement of the abstract operator PRO to the operator position (Op) within a clause. A horizontal line with an upward-pointing arrowhead is positioned below the text "[Op PRO to please t]". The arrowhead points to the "Op" position, and the line extends to the right, ending under the "t" position, indicating the movement of PRO from the trace position to the operator position.

Tough Movement

- This analysis has the advantage of being A-Bar movement, which predicts that children should have the parse more available to them than A movement
 - A Movement operations like passivization are systematically problematic for children in the same range as those who can (in some cases) parse TM (Borer and Wexler 1987, inter alia)
 - The Long Distance analysis of TM moves the subject into Spec-IP, an A position.

Tough Movement

- Even children's failures on TM constructions is not like their A-Movement performances

(14) Dora_i is tough [PRO_i to see]

→ Children give Subject Control parse

(15) Dora seems to see

→ Children interpret as “Dora sees”

- In the *tough* misparses, children succeed in parsing the subject as an argument of two predicate; in raising misparses, they fail to associate the subject with both predicates.

Tough Movement

- Summary:
 - Children's performance on TM constructions, while imperfect, is better than their performance on A Movement constructions
 - This supports an A-Bar Movement analysis of TM, such as Chomsky's Abstract Wh-Operator approach

Medial Wh

- Children often give non-adultlike responses in the environment of Medial Wh expressions
 - How did Ben show where Dora was hiding
 - (15) Adult: With a picture
 - (16) Child: Behind the tree
 - About 20% of the time (de Villiers et al 2008)

Medial Wh

- These non-adultlike parses resemble German Scope-Marking Constructions
 - (17) Was glaubst du wann daß sie gekommen ist
What think you when that she coming is
'When do you think she is coming?'

Medial Wh

- Both of these resemble the Chomsky analysis of TM in being movement of a Wh item to the highest part of an embedded clause, but being interpreted in the matrix clause.

(18) [Dora is tough [Op to please t]



(19) Was glaubst du [wann das sie t gekommen ist]



Medial Wh

- Finding some independent relationship between the two constructions would support the Chomsky analysis of TM.

Free Relative Clauses

- Free Relative Clauses in English are distinguished from other embedded Wh constructions both syntactically and semantically

Free Relative Clauses

- Syntactically: FRCs don't allow phrasal movement
 - (20) Dora ate what/*which cake I made.
 - (21) Dora asked what/which cake I made.
- Semantically: Definite descriptions
 - (22) Dora ate what I made. #I made nothing.
 - (23) Dora asked what I made. I made nothing.

Experiment

- I examined children's responses to the following sort of questions:

(24) Was what Dora saw scary?

- Matrix Polar question
- Subject contains Wh expression but not Wh semantics
- Adjectives vary in terms of type

Experiment

- Tests two things at once:
 - Are children's non-matrix Wh responses triggered by the Wh word itself or by Wh syntax per se?
 - Do TM constructions have Wh-like properties, and are children sensitive to these?

Experiment

- Method
 - Children shown a story in which a character is confused as to whether some thing (x) has some property (y); the child is implored to help the character by answering a question:
 - Is (what Dora saw)_x (scary)_y?

Experiment



Experiment

- Each child saw 4 stories
- In addition to TM-type of adjective, items varied based on target-answer (yes or no) and whether or not the FRC was postposed
 - (25) Was it scary what Dora saw?
- Conducted on 39 children from Western Massachusetts, ages 3;10 to 6;10
 - Median age 5;4

Experiment

- Out of 152 experimental items, 16 instances of Wh answers.
 - Roughly 10%
 - Already lower rate than Medial Wh answers in Wh ... Wh constructions

Experiment

Target answer		$t = -9.11, p < .001$
	N	Rate
Yes	12	15.4%
No	4	5.1%

Experiment

FRC position		$t = -8.66, p < .001$
	N	Rate
In-Situ	11	14.1%
Postposed	5	6.4%

Experiment

Adjective Type		$t = 37.7, p < .001$
	N	Rate
Tough	8	15.4%
Pretty	7	13.4%
Heavy	1	3.8%

Experiment

- Tough and Pretty adjectives differ insignificantly from each other
 - (both TM types; $p > .05$)
- Tough and Pretty taken as a unit differ significantly from Heavy
 - (non-TM type; $t = 37.7, p < .001$)

Discussion

- A clear difference from Medial Wh constructions, which produce closer to 20% non-matrix responses (or above!)
- Apparent effect of target answer could be pragmatic in nature
- Etiology of effect of post-position not obvious

Discussion

- Huge effect of Adjective Type in terms of TM shows that children have some sort of sensitivity to the properties of TM
- Triggering of Wh answers particularly suggests that there is some in common between Wh constructions and TM
 - This supports the Chomsky approach to TM syntax

Discussion

- Two possible ways to think of this effect:
 - Children are projecting silent infinitival clauses which include movement of an abstract Wh operator
Was what Dora saw scary → ... to see
 - Something independent of this Wh operator movement triggers both this response and the TM syntax itself
 - Scary = +Wh; Heavy = -Wh

Discussion

- The first approach is testable, if we look at how children parse TM constructions without complement clauses in general
 - What Dora saw is scary (to see? in general?)
- The second approach is plausible, but it begs the obvious question of what it is about these adjectives that is Wh-like if not their syntax

Conclusion

- This result provides independent evidence of a relationship between Wh semantics and TM adjectives
- This supports both the Chomsky approach to TM and a view of children's Wh behavior that is sensitive to Wh syntax per se to the exclusion of Free Relative Clauses.

Thanks to Tom Roeper, Jill de Villiers, Magda Oiry, Lyn Frazier, Jeremy Hartman, Stefan Keine, Hannah Greene, Walter Sistrunk, Jason Overfelt, Ken Wexler, Seth Cable, the students and teachers at Sunderland Elementary, Bridge Street School, and the CEEC in Hampshire County, MA, and of course to you all!

References

Becker, M, B Estigarribia, and D Gylfadottir. 2012. Tough adjectives are easy to learn. 36th BUCLD Proceedings.

Chomsky, C. 1969. *The Acquisition of Syntax in Children from 5 to 10.*

Chomsky, N. 1977. On Wh-Movement. In Akmajian, Wasow, and Culicover (eds.) *Formal Syntax.*

De Villiers, J, T Roeper, L Bland-Stewart, B Pearson. 2008. Answering hard questions. *Applied Psycholinguistics* 29.