

Reanalyzing relative clause island effects

Dave Kush, Akira Omaki and Norbert Hornstein
University of Maryland

Preview

Two issues:

1. Is there cross-linguistic variation with respect to strong Island-sensitivity?
1. Are islands reducible to information effects?

Roadmap

1. Scandinavian Island-violations
2. Structural factors contributing to extractability
3. Experiments showing similar factors ameliorate island violations in English.
4. Possible explanations for the observed effects.

Preview

We will argue:

- Strong Islandhood is Universal.
- Apparent violations of strong Islands are illusory.
- Constraints stated over structural descriptions are still necessary.

Introduction

Islands for extraction have been studied since Ross (1967).

Strong Islands:

(CSC) *Who did John dance with Mary and ?

(Subj) *What was the theory that predicted *t* disproved?

(RC) *What did John give the book to the man who liked *t*?

Weak Islands:

(CNPC) *Who did John hear the rumor that Mary kissed *t*?

(Wh) *Who did John wonder when Mary kissed *t*?

Islands

- *Subjacency, Barriers, ECP, Phases*

(Chomsky 1973, 1977, 1986, 2000; among others)

- *Relativized Minimality*

(Rizzi 1990; MLC in Chomsky 1995)

- *Illicit PF/LF representations*

(Chomsky 1972; Fox & Lasnik 2003; Lasnik 2001; Lasnik & Saito 1992;

Merchant 2001; Ross 1967, 1969; Szabolsci & Zwarts 1993; Uriagereka 1999)

strong islands = universal, syntactic constraints

Challenge

Challenges to Universality:

- Various Scandinavian languages allow (some) island violations.

Allwood(1976), Engdahl (1989, 1997, 2008), Erteschik-Shir (1973), Mailing & Zaenen (1982), Taraldsen (1981)

Satsfläta

Denne Svesisme er det visst ingen som har vært radikale nok til å låne.

This Swedishism, there is [apparently] no one who [has been] radical enough to [borrow].

(Norwegian, Creider 1987)

Satsfläta

- Constraints usually stated in coarse-grained syntactic vocabulary.
- Apparent violations in *a subset of the structures* that were supposedly disallowed.

Information Structure

Informational accounts of islands

- Informational Status of the displaced element is the primary factor determining extractability.

(Engdahl, Erteschik-shir, Kuno, *inter alia*)

→ If this is tenable, it requires reconsideration of the traditional, syntactic approaches to island constraints

Serious consequences

1. *Structural accounts of islands in danger*
2. *Learnability problem*

Learnability Problem

Parameterization of islands? (cf. Rizzi, 1981)

Classic learnability problems:

- *No negative evidence:*

How do English-speaking kids learn that extraction out of certain islands is bad? (cf. Berwick 1985)

- *Poverty of positive evidence:*

There is **insufficient positive evidence** on extraction out of (a subset of) islands

Swedish kids *cannot* distinguish such input from occasional ungrammatical sentences resulting from speech errors

Aim

Our purpose is twofold:

- *Address claims of structural insensitivity*

Show that **structural factors are essential** for describing the environment out of which these extractions occur.

- *Address claims against universality*

Show that **similar factors ameliorate island violations in English and Swedish sentences.**

Swedish: A Case Study

- Engdahl (1989, 1997): Thorough documentation of naturally occurring extractions out of RCs in Swedish.
- The extractions were movement of various kinds: topicalization, relativization, etc.

Engdahl's Examples

Det språket_i finns det [_{RC} många som talar t_i]
that language are there many that speak
'That language there are many who speak'

Det_i, finns det [_{RC} inge som kände t_i]
that is there no-one that knew
'That, there was nobody who knew.'

Där_i, har jag [_{RC} en mostor som bor t_i]
there have I an aunt that lives
'There, I have an aunt that lives.'

Engdahl's observations

Requirements for successful extraction, Engdahl (1997):

- Contextual salience
- Quantifier of RC head
no, many, a, etc.
- Subject Relatives
- RC is always short
- Gap must be sentence final

How about English?

Translations of the Swedish sentences do not seem too bad in English.

- That language, there are many who speak
- That, there was nobody who knew.
- There, I have an aunt that lives.

English Analogues

Chung & McCloskey (1983)

- Isn't that the song that Paul and Stevie were the only ones who wanted to record?
- This is a paper that we really need to find someone who understands.

Kuno (1976), *inter alia*, reported similar sentences.

Structural characteristics

In all the English and Swedish examples, there are common structural characteristics:

- Subject Relativehood (as observed by Engdahl)
(cf. Chomsky 1986, Chung & McCloskey 1983)

Structural characteristics 1

Subject-Relativehood (English):

? This is **the bill** that there were **no senators** who *t* supported *t*.

* That was **the pen** that there was **a bill** that no senators signed *t* with *t*.

Structural characteristics 2

Predicate types (Norwegian: Allwood 1976):

OK De blommorna ser jag en man som vattnar
the flowers see I a man that waters
“The flowers, I see a man that waters”

* De blommorna talar jag med en man som vattnar
the flowers talk I with a man that waters
“The flowers, I talk with a man that waters”

Structural characteristics

In all the English and Swedish examples, there are common structural characteristics:

- Subject Relativehood
- Existentials and perception verbs

Engdahl's Examples again

Det språket_i finns det [_{RC} många som talar t_i]
that language are there many that speak
'That language there are many who speak'

Existential

Det_i finns det [_{RC} inge som kände t_i]
that is there no-one that knew
'That, there was nobody who knew.'

Existential

Där_i har jag [_{RC} en mostor som bor t_i]
there have I an aunt that lives
'There, I have an aunt that lives.'

(underlyingly)
Existential

(Kayne 1993; Szabolcsi 1983)

Structural characteristics

In all the English and Swedish examples, there are common structural characteristics:

- Subject Relativehood
- Existentials and perception verbs

→ *Small Clause Environments?* (e.g., Stowell 1981)

Extraction out of regular SC

English:

Which bread did you see [_{SC} Bill eat t]?

Swedish:

Vilket bröd så du [_{SC} Bill eta t]?
which bread see you Bill eat

Our Hypothesis

Small-Clause Generalization:

Extraction out of RCs is ameliorated when the RC is a subject relative that is complement to a verb that has [___ SC] in its subcategorization frame

Our Hypothesis

Small-clause-like structures allow extraction.

When speakers allow extraction, they are treating the extraction environment as a **SC**, **not an RC**.

Summary so far

- Small clause matters
→ **a structural factor**
- Information status (a la Endgahl et al.) may interact with this, but **a structural factor plays a significant role for amelioration of RC island violation.**

Motivations for experiments

Acceptability judgment experiments

- controls for informational status of the filler-gap
- manipulates structural factors only to assess their contribution to acceptability
- *structural vs. informational* hypotheses
- Subtle judgment contrasts can be more readily compared with quantified measures
- Data from English (for this talk) and Swedish; Test universality of the proposed structural factor

Plan

Three Acceptability-Judgment Task (AJT) experiments which tested the extent to which the SC-generalization made the correct predictions **in English.**

→ If amelioration is found in English then it suggests a universal role for SC structures

Small Clause contexts we chose:

- Existential constructions [Exp 1 & 2]
- Perception Verb [Exp 3]

AJT design

7 point scale (~ magnitude estimation)

Weskott & Fanselow 2008, Sprouse 2007

Binary acceptability assessment masks subtle variation in speakers' judgments

Schütze 1996, Keller 2000, Featherston 2007

AJT design

Questionnaire Format

Multiple lexicalizations per condition (18 targets)

Balanced fillers (36 fillers)

Latin square design, pseudo-randomization

Experiment 1

Factor 1: Existential vs. “non-SC” environments

- This is the battle that **there was** a historian who studied t at that college.
- This is the battle that **I met** a historian who studied t at that college.

Experiment 1

Factor 2: The quantifier in the RC head

- This is the battle that there were no historians...
- This is the battle that there were many historians...
- This is the battle that there was a historian...

Exp 1 predictions

Structural (small clause) hypothesis:

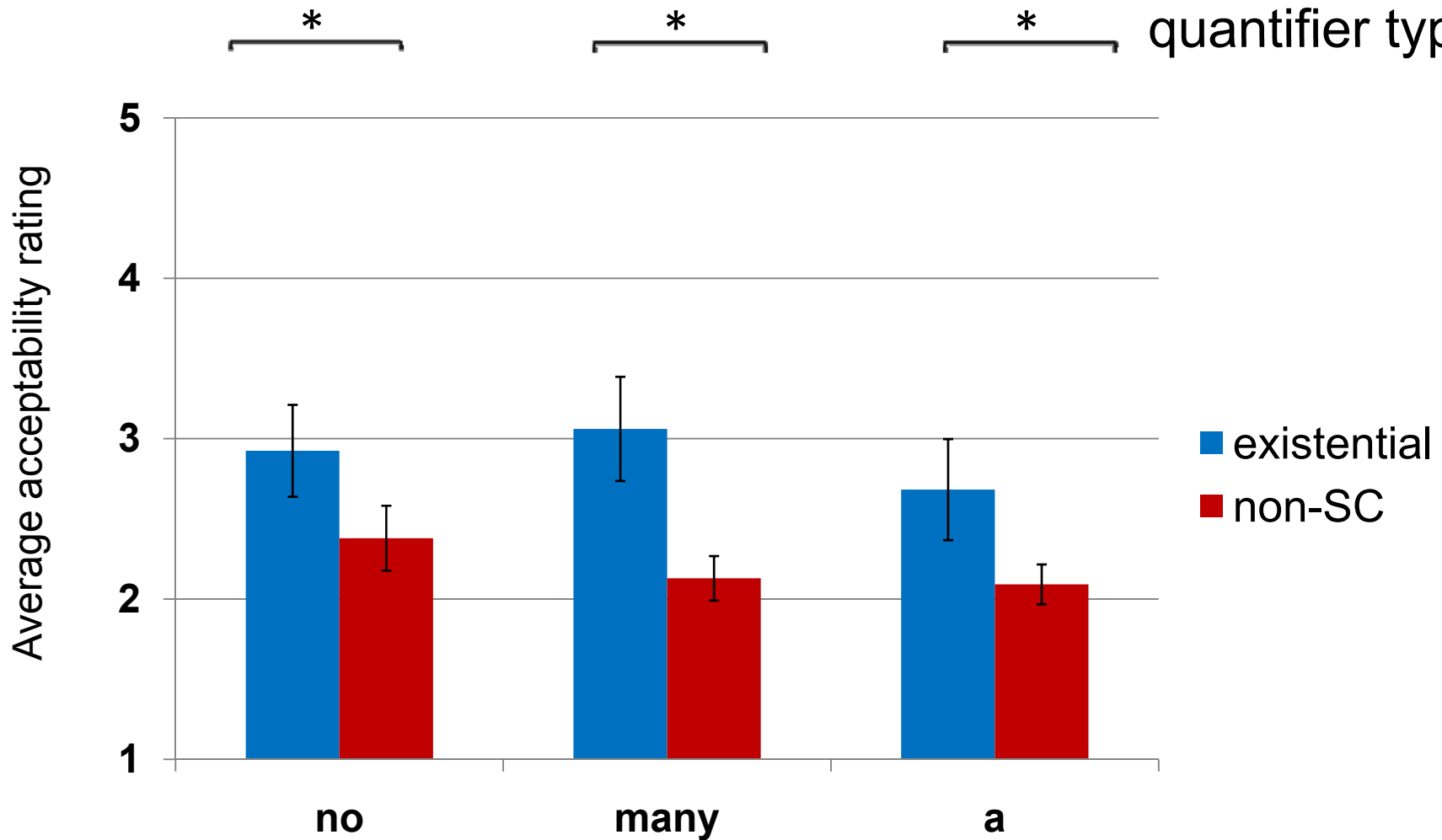
- Existential constructions can (potentially) host small clauses
- Existential condition > Non-SC condition

Non-structural (information status) hypothesis:

- The informational status of the filler-gap relation is the same
- Existential condition = Non-SC condition

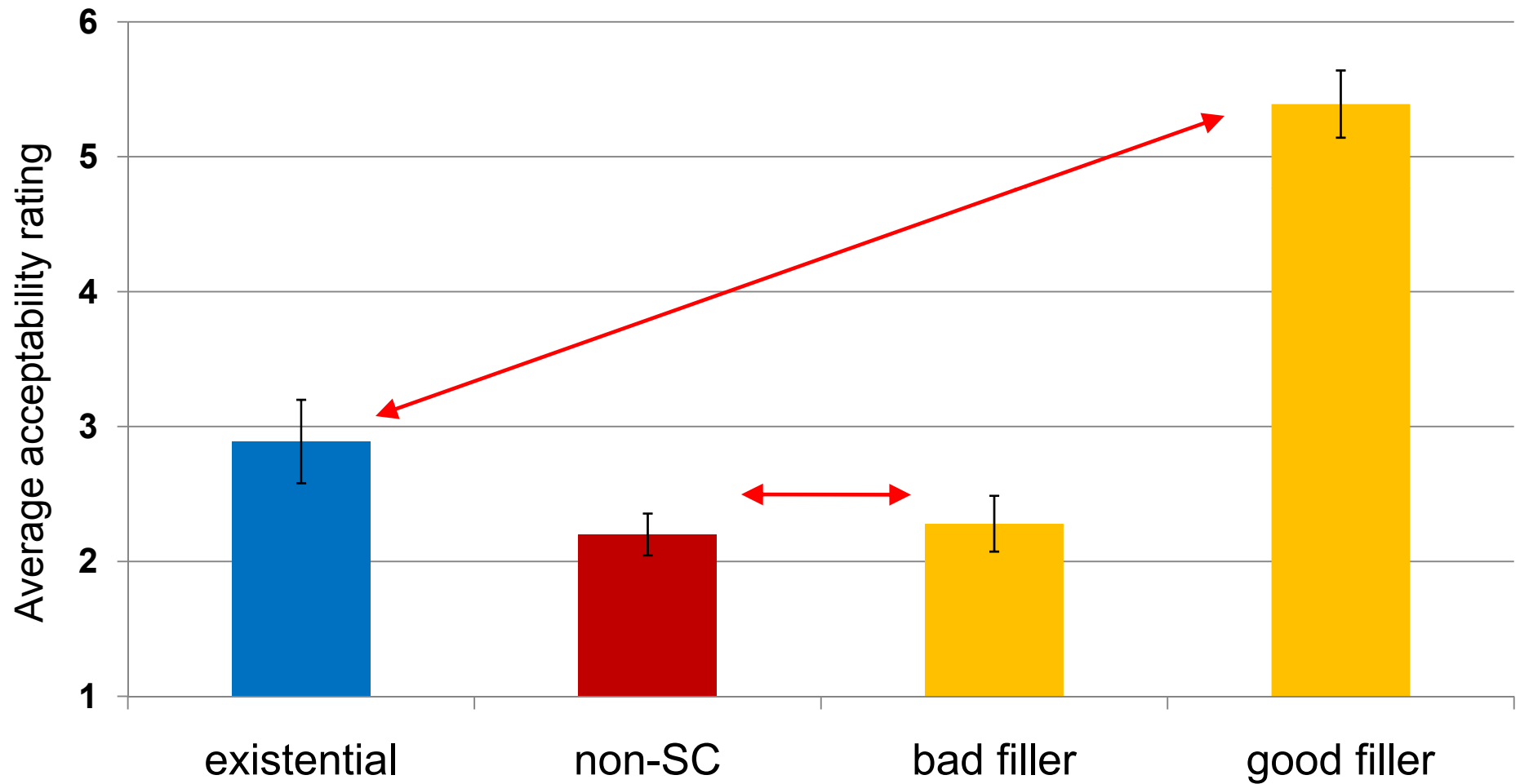
Experiment 1 (N=22)

No effect of
quantifier type



Experiment 1

Targets vs. Fillers (from Exp 3)



Experiment 1

- We found amelioration of RC island violation for existentials, supporting the **structural hypothesis**
- Contextual salience/ discourse status does not seem to be what's driving the effect. (aligns with Sprouse 2007)

Experiment 1

- Amelioration is partial. Compared to good fillers, extraction in the existential condition is still degraded.

→ We'll return to this point later

Experiment 2

Alternative processing account for our findings?

Non-SC sentences have an extra referent intervening between filler and gap.

- **Existential:**

That was the theory that there were no linguists...

- **Non-SC:**

That was the theory that he met no linguists...

Experiment 2

Dependency Locality Theory (Gibson 2000)

- The complexity of sentences increases when a new discourse referent is introduced while processing a syntactic dependency (e.g., filler-gap dependency)
- Support from complexity rating and reading time (Warren & Gibson 2002)

Experiment 2

Gibson: Non-SC is more “complex” than existential

- **Existential:**

That was the theory that there were no linguists...

- **Non-SC:**

That was the theory that *he* met no linguists...

→ The increase in complexity may be why our Non-SC condition received lower acceptability rating

Experiment 2

John said...

...that was the theory that there were no linguists...

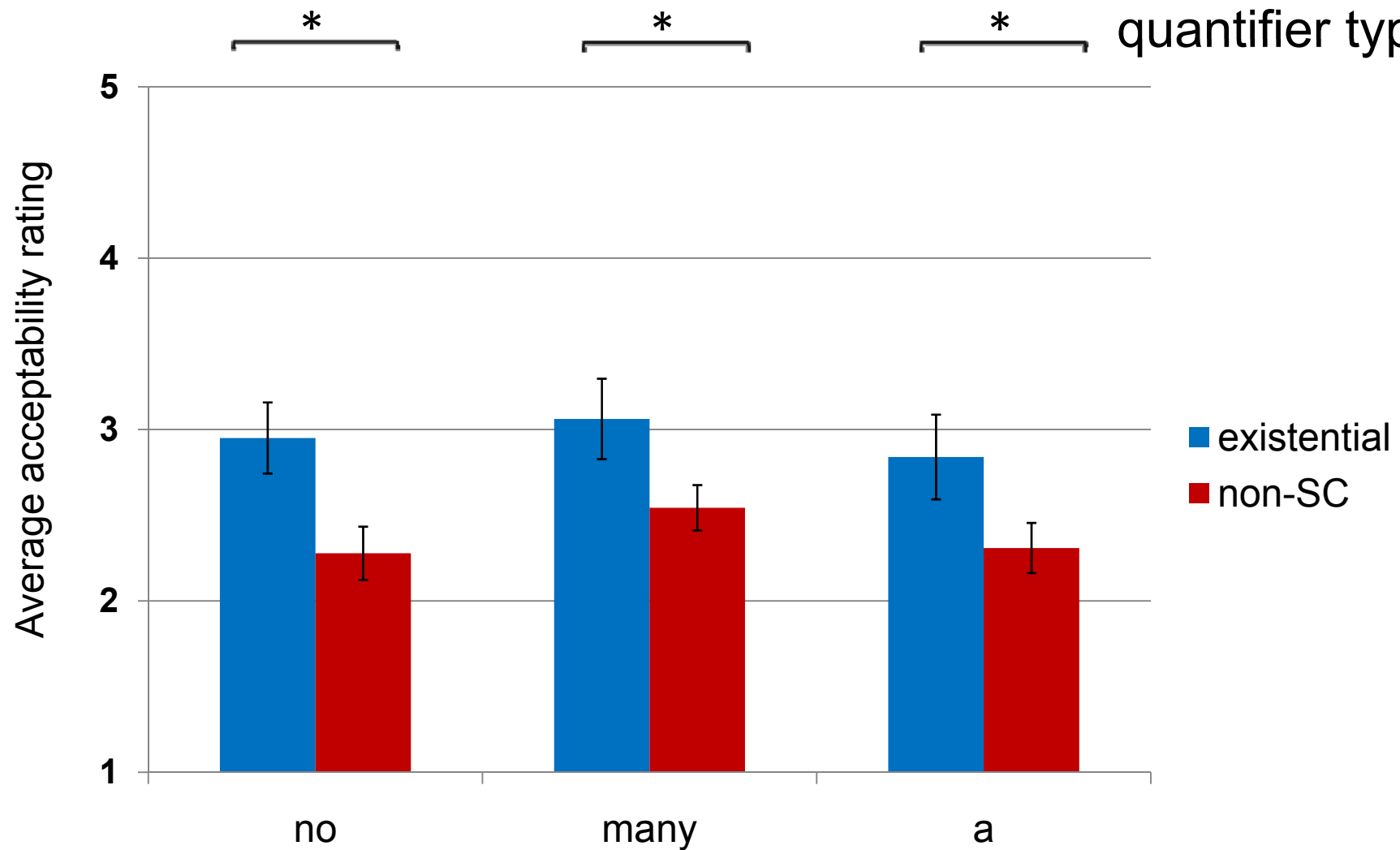
John said...

...that was the theory that *he* met no linguists...

- The pronominal *he* is no longer a new referent; Gibson's theory predicts that the processing cost decreases
- If this was driving the effect in Experiment 1, we should no longer observe a difference between the two conditions

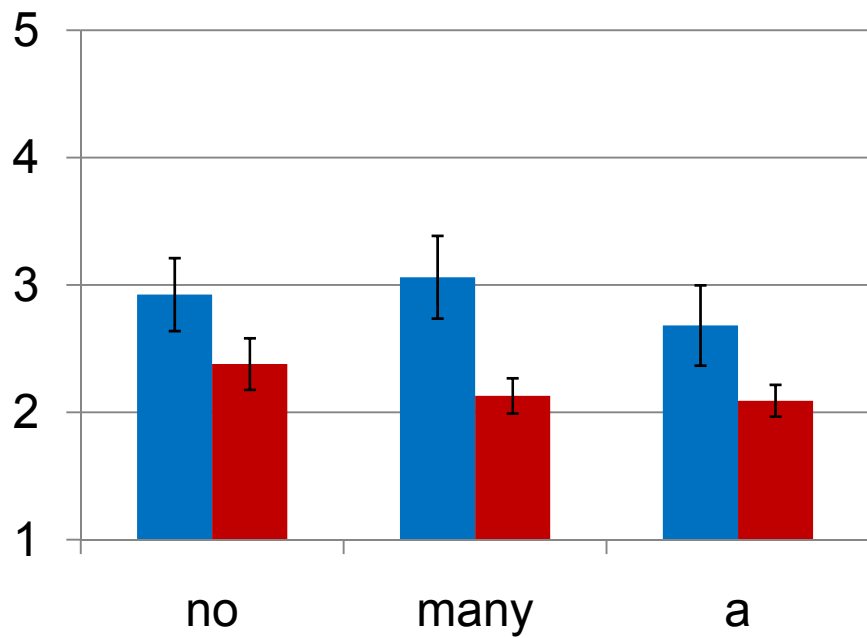
Experiment 2 (N=27)

No effect of
quantifier type

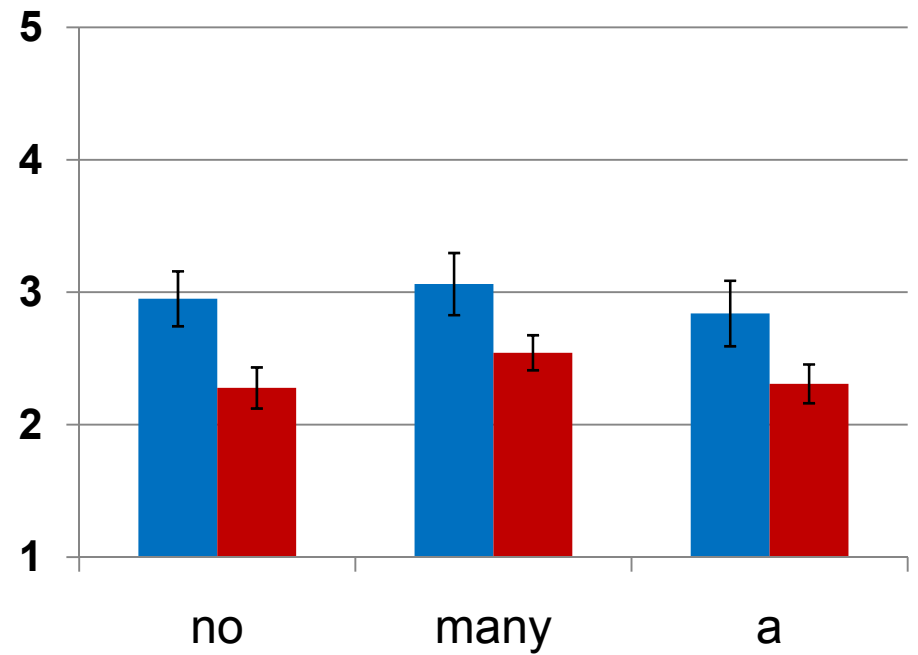


Experiment 1 vs. 2

Experiment 1



Experiment 2



Experiment 2

Summary:

- Replicated the findings in Experiment 1

Existentials > Non-SC

Experiment 3

- Comparison:

- Non-SC *[__ SC]
- Existential [__ SC]
- Perception verb [__SC]

Our predictions:

Existential = Perception V > Non-SC

Experiment 3

- **Existential**

This is the bill that there **were** no senators who discussed.

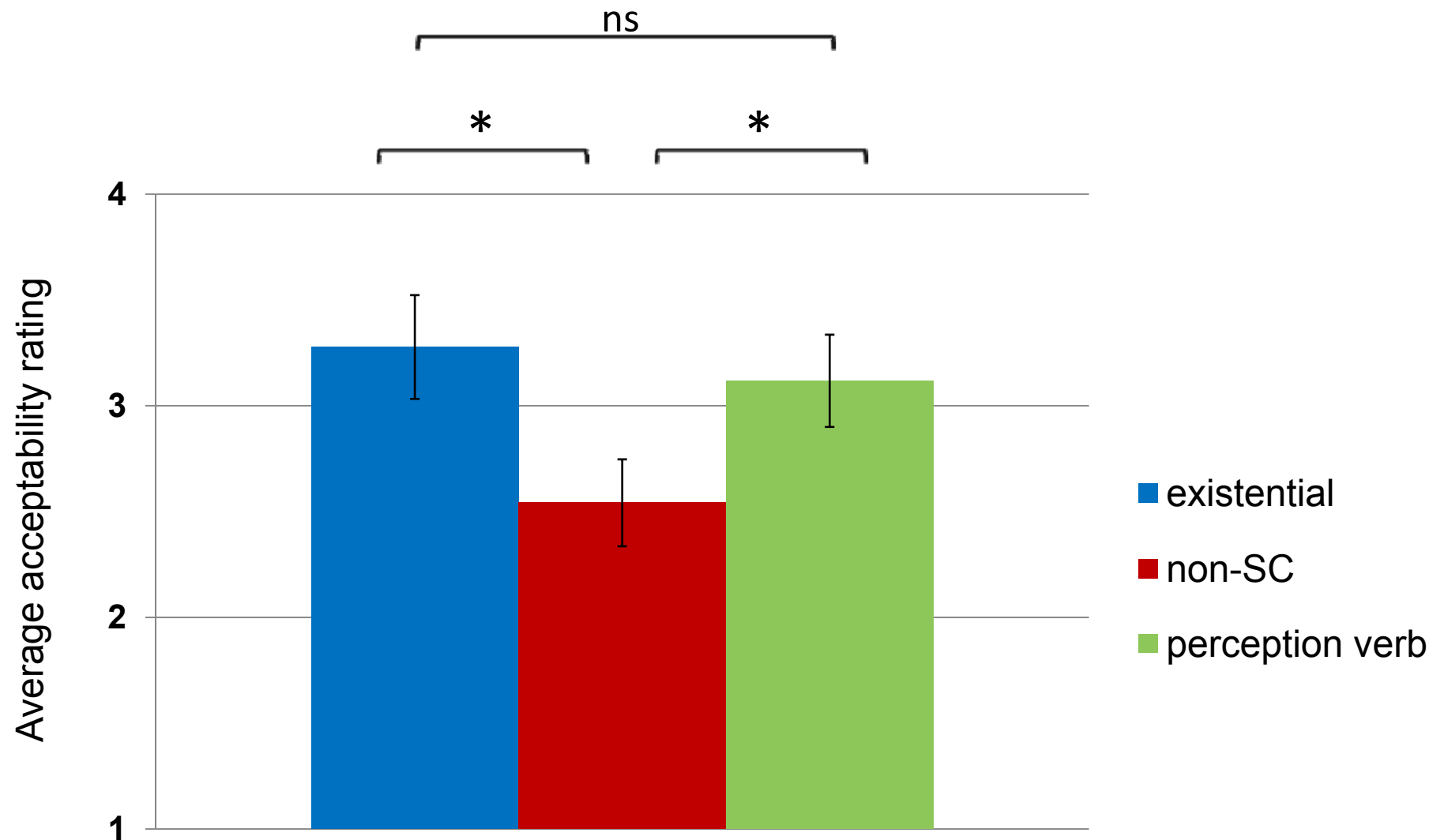
- **non-SC**

This is the bill that I **met** no senators who discussed.

- **Perception verb**

This is the bill that I **saw** no senators who discussed.

Experiment 3 (N=24)



Summing Up

Amelioration of apparent island violations from complements of:

- Existential Constructions
- Perception Verbs

Informational status of the filler-gap is the same across conditions, allowing us to isolate the structural factors crucial for amelioration of extraction out of strong islands.

Summing Up

This increases support for the SC-generalization.

→ NO GRAMMATICAL EXTRACTION OUT OF RCs!

It also suggests the possibility that there are **universal, structural factors** influencing acceptability of RC-Island violating constructions.

Outstanding Question

Is Swedish identical to English?

Is extraction out of small clause contexts still degraded?

Or is extraction out of small clause contexts as good as regular grammatical extraction?

We need to run similar studies in Swedish to figure this out.

Our analyses

Scenario 1: Swedish = English in acceptability rating

Extraction out of small clause contexts IS still degraded
(i.e., English & Swedish have *the same structures*)

→ Processing story: Reanalysis illusion

Scenario 2: Swedish ≠ English in acceptability rating

Extraction out of small clause contexts IS as good as
regular grammatical extraction (i.e., Swedish &
English have *different structures*)

→ Availability of pseudo-relative constructions

Scenario 1: Similar Ratings

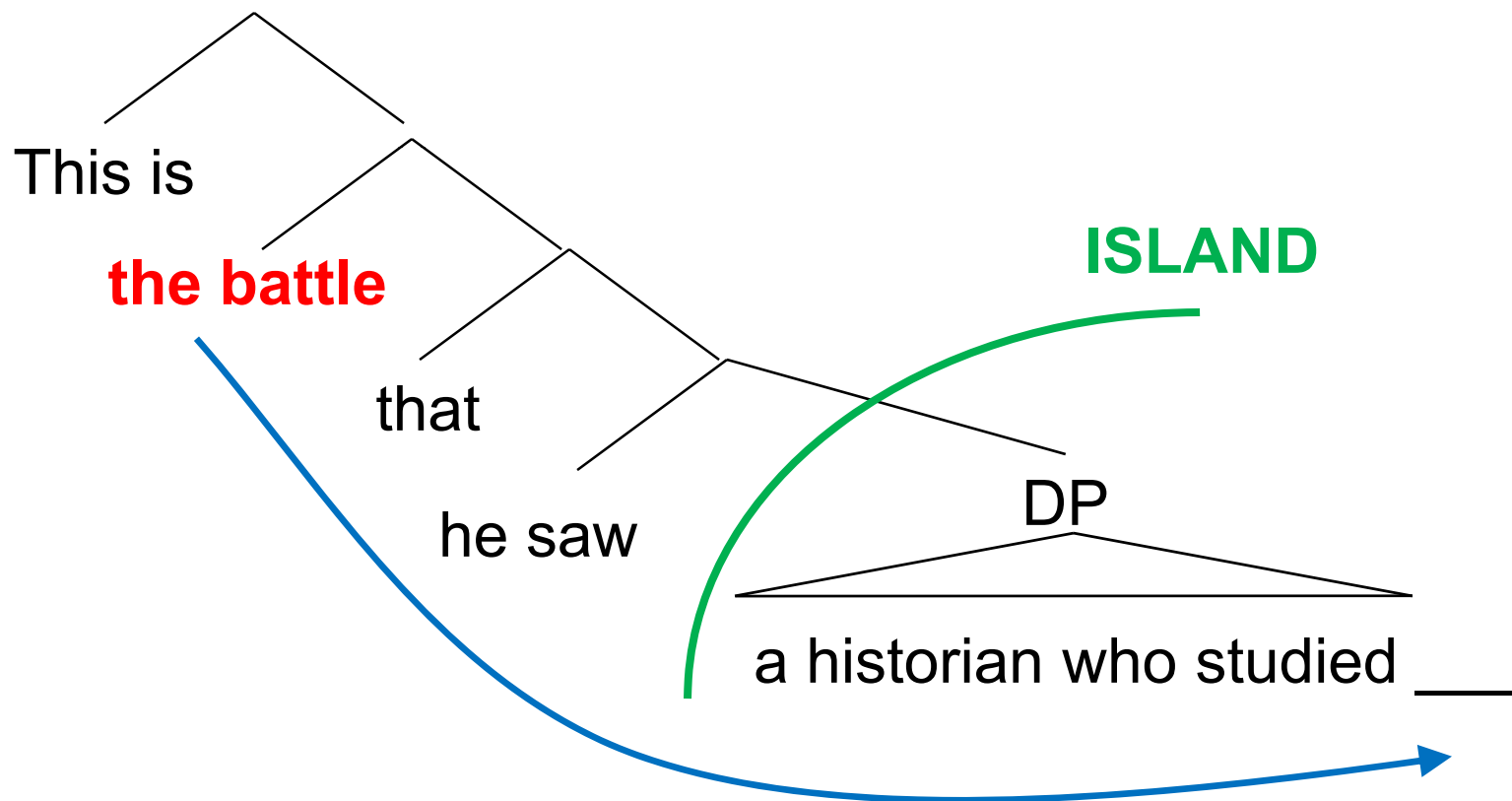
- The amelioration effect is *universal*
- In all languages, the extraction originates in the RC that follow a small clause predicate

...[_{CP} XP₁ [_{IP/PredP} ... pred_{+SC} [_{RC} t₁] ...]]

- We hypothesize that the partial amelioration is due to an *illusory reanalysis process* triggered by universal properties of the parser (Fodor & Inoue 1998)

How it is parsed

This is the battle that he saw a historian who studied t



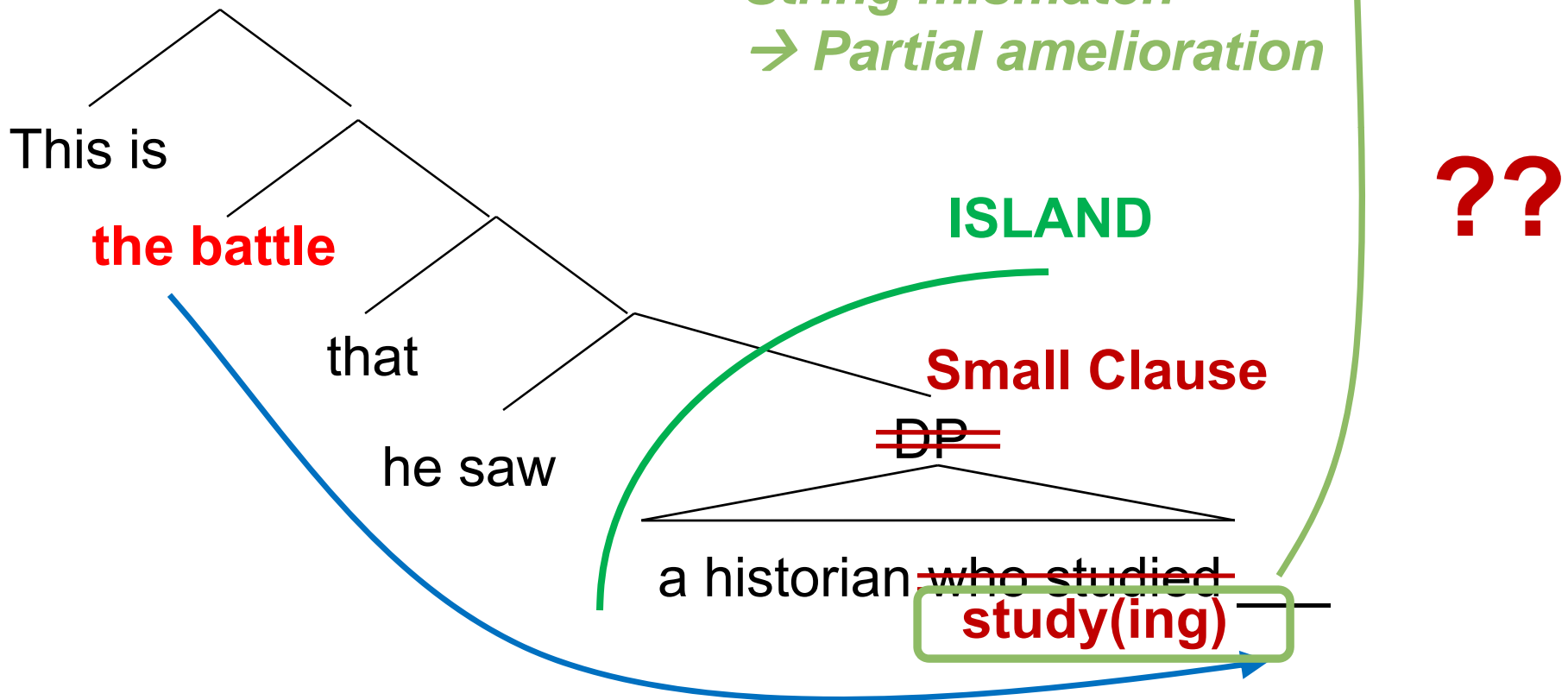
Associate the filler with the gap anyway (Fodor & Inoue 1998)

→ **Fine LF, Bad PF representation** (Lasnik 2001; cf. Merchant 2001)

Repairing PF

This is the battle that he saw a historian who studied t

String mismatch
→ *Partial amelioration*



- Repair strategy:**
- 1) change "who studied" → "study(ing)"
 - 2) DP → Small Clause

Scenario 1: Illusory Reanalysis

- The partial amelioration due to an *illusory reanalysis*

Predictions:

1. Our sentences are worse than extraction out of actual small clauses.

a. This is the battle that he saw a historian **who studied**

b. This is the battle that he saw a historian **studying**

2. Other ungrammatical gaps that could be made “interpretable” → similar degree of degradation?

that-t:

This is the historian₁ that I said ~~that~~ ___₁ studied the battle

Scenario 1: Illusory Reanalysis

The two serious consequences:

1. *informational status account of islands*

Unique role for structure, i.e. **small clause predicate allowing an illusory repair**

2. *Learnability problem:*

There is no language variation; **no learnability problem**

Scenario 2: Swedish \neq English

We expect to see similar relative acceptability differences between SC and non-SC environments in Swedish.

It may be that extraction isn't just "ameliorated" in Swedish, but that it's downright acceptable.

Scenario 2: Swedish ≠ English

- Residual difference stems from the availability of *Pseudo-relative* constructions in Swedish.
- **String ambiguous** between RC and Pseudo-relative.

Pseudo-relatives in the Wild

Italian:

- Ho visto *Mario che correva a tutta velocità*.

‘I saw Mario who was running fast.’

(Cinque 1992)

Pseudo-relatives in the Wild

French:

- J'ai vu *Mario qui courait à toute vitesse.*

- Il y a *des gens qui surveillent.*

'There are people watching.'

- Voila *Marie qui arrive.*

'Here's Marie arriving.'

(Koopman & Sportiche 2008)

Pseudorelatives in the Wild

- Found as complements of perception verbs.
- Despite appearances - **not RCs**.
(Kayne 1975, 1981; Radford 1975, 1981; Schwarze 1974)
- Often analyzed as **SCs**.
(Cinque 1992, *inter alia*)

Pseudorelatives in the Wild

- “Heads” are more mobile than RC heads.
(Cinque 1992, Koopman & Sportiche 2008, and others)
- ‘Subject relatives’
- Allow proper names as heads, but retain restrictive flavor.

Nordic Pseudorelatives?

- Taraldsen (1986, 2001) proposed extending a similar analysis to both que/qui distinction and Norwegian subject relatives.

Subject is Special

Obligatory with subject extraction

Jeg kjenner han *(som) jobber i butikken

I know he *som* works in shop.DEF

Vi vet hvem *(som) snakker med Mary.

We know who *som* talks with Mary.

Subject is Special

Optional with some object extraction

Jeg kjenner han (som) Mary snakker med.

I know he *som* Mary talks with

Ungrammatical in embedded-wh object extraction:

Vi vet hvem (*som) Mary snakker med.

We know who *som* Mary talks with

(Taraldsen 1986)

Mobile Head

Allwood (1976) noted that it was possible to topicalize RC heads (Det+N) as a single unit in Swedish.

Jag ser [en pojke som kysst Lisa] ==>

I see a boy *som* kisses Lisa

En pojke₁ ser jag [*t*₁ som kysst Lisa]

Mobile Head

We note that in Norwegian, this sort of topicalization is only licit in the SC environments we've discussed.

Jeg så [gutt-en [*som* snakket med Mary]]

I saw [boy-def [*som* talked with Mary]]

Gutten, så jeg [t [*som* snakket med Mary]]

Jeg så [gutt-en [*som* snakket med Mary]]

I saw [boy-def [*som* talked with Mary]]

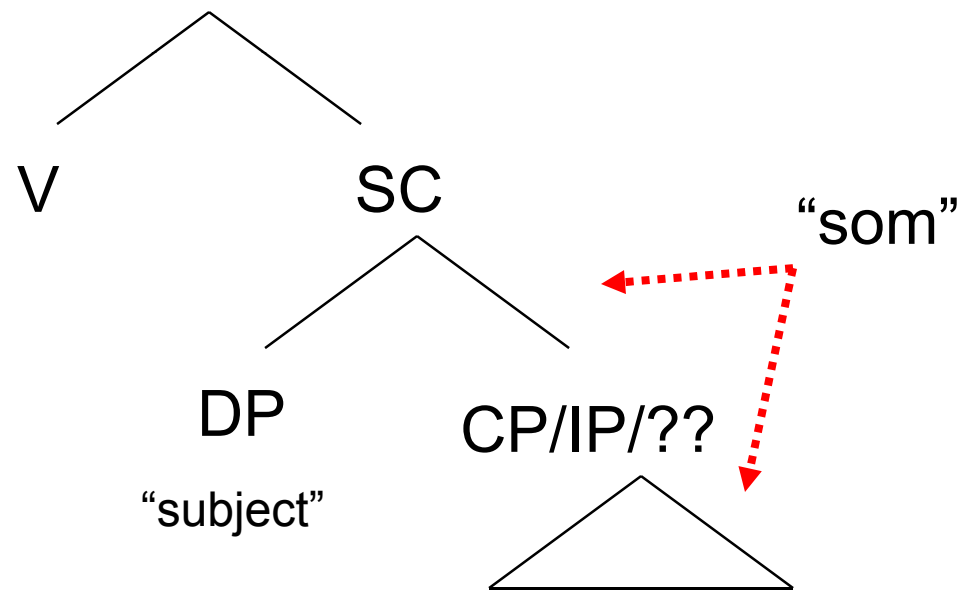
* Gutten, slo jeg [t [*som* snakket med Mary]]

Names as Heads

- Some of Engdahl's examples featured extraction out of clefts whose head was a proper name.
- Pseudo-relatives allow apparent (restrictive) relativization of proper names.
- In all other contexts, relativization of proper names can only be *appositive*.

Nordic Pseudorelatives

We assume something like the following for the structure of these pseudo-relatives:



Nordic Pseudorelatives

Crucially, the pseudo-relative behaves like a clausal complement, rather than a DP/RC. This property has been noted by other researchers. (e.g. Guasti 1988, 1990)

Predictions

On this account, the reason why extraction out of relatives is slightly ameliorated in English is because it is in principle possible in a human language (Swedish).

Predictions:

Similar amelioration for violations in English that are still possible in other languages

-LD binding, that-t, wh-scope marking etc.
(compare universally bad vs. only bad in English)

Scenario 2: Pseudo-Relatives

The two serious consequences:

1. *informational status account of islands*

Unique role for structure, i.e.

pseudo-relatives = complement clause \neq RC

2. *Learnability problem:*

A child needs to detect the presence/absence of pseudo-relatives from positive input

Conclusion

- Apparent RC-Island violating extraction is only licensed in *specific structural environments*.
- These structural factors have cross-linguistic purchase in explaining extractability out of apparent islands.

Conclusion

- Two possible analyses were presented to explain the facts:
 - 1) a universal processing account
 - 2) an account that linked cross-linguistic variability to the availability of the alternative structure in a particular language.
- On both accounts, the learnability problem became more tractable

Conclusion

- Our findings lend support to traditional accounts of RC islands as a *universal constraint stated over the syntactic structures*.

Conclusion

- Island violation is acceptable insofar as the extraction environments is treated as a *clausal complements rather than RCs*.

→ **No Extraction out of RCs, UNIVERSALLY**

Thanks

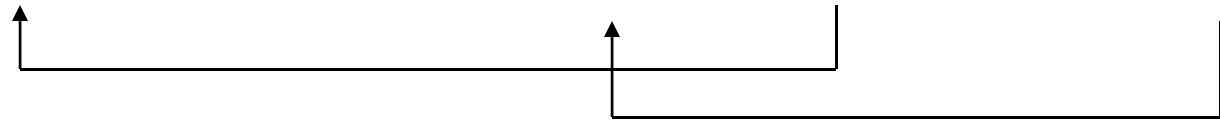
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Engdahl's Analysis

Potential counterexample (Hagaboom 2004):

That's the artist_i that I buy whatever_k t_i produces t_k.



(Norwegian)