Jurka (2009): Gradient Acceptability and Subject Islands in German
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I. The Point
i. Main Concerns
• Provide evidence for subject islands in languages with in-situ subjects (specifically German)
• Show that freezing effects are insufficient to explain subject island effects as argued by Stepanov
• Show how Uriagereka's Multiple Spell-Out (MSO) theory can better explain the subject/object asymmetry Stepanov subsumes under freezing effects

ii. Secondary Concerns
• Argue against binary grammaticality
• Argue for more rigid standards of data gathering
• Propose a reanalysis and repurposing of the Linear Correspondence Axiom (LCA) required for an MSO analysis of these subject island phenomena

iii. Tertiary Concerns
• Examine Across-the-Board (ATB) movement observed in was-für split constructions
• Propose a sideward movement account of ATB was-für split

II. Theoretical Background
i. Ross's Sentential Subject Constraint (SSC)
• Weakened by Ross to prevent blocking sentences like (1). More methodological investigation shows problems with this example

(1) Of which cars were the hoods damaged by the explosion?

• Ross claims that stranding the P sharply decreases grammaticality, yet stranding is usually preferable to pied-piping
• We can account to sentences like (1) better by proposing that they constitute a hanging topic construction
• A constraint on only sentential subjects seems odd and stipulative
• Chomsky (1973) therefore generalizes the SSC to a simple Subject Condition given in (2)

(2) No rule can involve X, Y in the structure ...

...X...[α...Y...]

where (a) α is a subject phrase properly containing Y and (b) Y is subjacent to X (Chomsky 1973:250, ex. (99))

ii. Freezing Effects
(3) A node is frozen if (i) its immediate structure is non-base or (ii) it has been raised.
• Frozen nodes are no longer permeable for extraction
• Stepanov argues that freezing effects are the cause of subject islands in languages that obligatorily raise the subject to SpecTP

iii. Condition on Extraction Domain (CED)
(4) Condition on Extraction Domain (CED) (Huang 1982:505)
A phrase A may be extracted out of a domain B only if B is properly governed.

(5) Definition of (Proper) Government
α is governed by β if α is c-commanded by β and no major category or major category boundary appears between α and β.

• This gives us extraction out of complements while blocking extraction out of specifiers and adjuncts
• Stepanov argues that extraction out of in-situ subjects is fine and the CED is therefore inaccurate (Jurka disagrees)

iv. Multiple Spell-Out (MSO)
• Rejects the notion of a single spell-out (SO)
• Spelling out structures is a consequence of linearization requirements necessary to satisfy PF legibility requirements
• Use the Linear Correspondence Axiom (LCA) as a linearization algorithm

(6) Linear Correspondence Axiom (LCA)
A lexical item α precedes a lexical item β iff α asymmetrically c-commands β.
• "met" does not asymmetrically c-command (a-CC) any terminal in the complex specifier, so we have a problem
• This problem arises for all complex specifiers and adjuncts
• To build these relations into a bottom-up derivation, we construct the specifier separately

(8) Side Workspace       Main Workspace

• SO first applies to the specifier in the "side workspace" in (8) leaving only the DP label

(9)

• Since this DP a-CCs the rest of the tree, we can finish linearization
• Crucially, the syntax cannot access spelled-out structures, preventing extraction from subjects
• SO of the main spine can wait until the end of the derivation, allowing for extraction from objects
• This predicts a violent death for derivations involving extractions from left branches, essentially deriving the effects of the CED from MSO
• Freezing shouldn't make grammaticality worse since the derivation has already failed, but might harm acceptability by imposing tighter processing conditions (isn't this assuming binary grammaticality, something we're arguing against?)
• Moved wh-elements merging into adjunction positions will need to be spelled-out to satisfy linearization
• Unfortunately, matrix C can still access the lower copy of the wh-element, so we stipulate that the lower copy must be spelled-out before it can be moved (might be better accounted for by the fact that the higher copy is closer to matrix C and the lower is thus inaccessible due to minimality)
• Increase in acceptability for extraction from subjects of unaccusatives or passive predicates might result from the ability of some speakers to extract from the lower copy

III. Acceptability Judgments

i. Gradience
• Stepanov assumes binary grammaticality
• Early generative work proposed gradience for grammaticality, using binary grammaticality as a useful abstraction
• More rigid methodology allows us to capture more fine-grained data and to work within a framework of gradient grammaticality
ii. Why German
• Allows in-situ and derived subjects
• Scrambling allows manipulation of SUBJECT/OBJECT and IN SITU/MOVED independently
• No covert arguments to worry about

iii. Why Not NP Subextraction
• NP Subextractions: German does not allow P-stranding so we can't be sure that we're not facing hanging topic constructions as in (1)
• Instead focus on was-für split and wh-extraction from non-finite clauses.

IV. Was-für Split
i. Preliminary

• Was-für (what-for, glossed as “what kind of”)

(10) a. Was-für
Was für ein Schnitzel hat der Hermes verspeist?
what for a schnitzel has the Hermes eaten.up
“What kind of schnitzel did Hermes eat up?”

b. Was-für split
Was hat der Hermes für ein Schnitzel verspeist?
what has the Hermes for a schnitzel eaten.up
“What kind of schnitzel did Hermes eat up?”

(11) a. Was haben denn für Ameisen einen Postbeamten gebissen?
what have PRT for ants a postman bitten
“What kind of ants bit the postman?”

b. *Was haben für Ameisen denn einen Postbeamten gebissen?
what have for ants PRT a postman bitten
“What kind of ants bit the postman?”

• Particle denn (“indeed”) demarcates TP and VP/shows whether subject has moved
• Splits from moved subjects are less acceptable
• Diesing gives binary grammaticality judgments and misses intermediate values
• If Stepanov is right, we expect extraction from moved objects to be just as bad
• If the CED is right, we expect a subject/object asymmetry
• If Diesing is also right, we expect objects>unmoved subjects>moved subjects

ii. Experiment 1 (unergatives)
a) Participants and Procedure
• 32 native German speakers, 31 used for data analysis

b) Design
• 2x3: SUBJECT/OBJECT, MOVED/INSITU

(12) a. Subject, no split
Was für eine Ameise hat denn den Beamten gebissen?
what for a ant has PRT the clerk bitten
“What kind of ant bit the clerk?”

b. Object, no split
Was für einen Beamten hat denn die Ameise gebissen?
what for an clerk has PRT the ant bitten
“What kind of clerk did the ant bite?”

c. Split from in-situ subject
Was hat denn für eine Ameise den Beamten gebissen?
what has PRT for an ant the clerk bitten
“What kind of ant bit the clerk?”

d. Split from moved subject
Was hat für eine Ameise denn den Beamten gebissen?
what has for an ant PRT the clerk bitten
“What kind of ant bit the clerk?”

e. Split from in-situ object
Was hat denn die Ameise für einen Beamten gebissen?
what has PRT the ant for a clerk bitten
“What kind of clerk did the ant bite?”

f. Split from moved object
Was hat denn für einen Beamten die Ameise gebissen?
what has PRT for a clerk the ant bitten
“What kind of clerk did the ant bite?”

• 3 tokens for each condition distributed into 6 lists in Latin Square design to spread noise between conditions
• 24 stimuli from another experiment and 36 fillers of varying grammaticality included
• Pseudo-randomized total of 78 sentences

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c) Results

(13)

- Rejects Stepanov's predictions
- Evidence for freezing effects and subject condition violation (cumulative)
- Averaging results might be bad if subjects have different grammars, but 28/31 subjects individually represent the pattern in (13)
- Subject condition cannot be reduced to freezing effects
- Freezing effect is much smaller and might be reduced to a processing effect

iii. Experiment 2 (Passivized Ditransitives)

- German passivized ditransitives surface with the order indirect object > subject
- Allows us to test whether the effects in §ii result from how late or how close to the verb the gap is

b) Design

(14) a. No extraction, unmarked word order
- Gestern wurde einem Professor ein Student vorgestellt.
  "Yesterday a student was introduced to a professor."

b. No extraction, marked word order
- Gestern wurde eine Student einem Professor vorgestellt.
  "Yesterday it was a professor a student was introduced to."

c. Extraction out of subject, unmarked word order
- Was wurde denn einem Professor für ein Student vorgestellt?
  "What kind of student was a professor introduced to?"

d. Extraction out of indirect object, unmarked word order
- Was wurde denn für einem Professor ein Student vorgestellt?
  "What kind of student was a professor introduced to?"

e. Extraction out of subject, marked word order
- Was wurde denn für ein Student einem Professor vorgestellt?
  "What kind of student was a professor introduced to?"

f. Extraction out of indirect object, marked word order
- Was wurde denn für einen Professor ein Student vorgestellt?
  "What kind of student was a professor introduced to?"

• Only indefinite and animate subjects and IOs

a) Participants and Procedure

- 23 native German speakers in online study
- Same procedure as in §ii.
c) Results

• MARKED/UNMARKED marginally significant, speakers slightly prefer IO>Subj
• MSO correctly predicts both subjects and IOs to be problematic extractions
• Asymmetry for SUBJ/IO extraction is probably due to passivized subjects starting out as thematic objects, which improves acceptability for some speakers
• Marked word order seems to have the same effect in extracted and in-situ
• No additional effects of extraction out of moved constituents in marked order extractions shows evidence against freezing effects
• Linear order does not affect the asymmetry
• Previous accounts problematically judge (14c) to be completely grammatical and (14d) and (14f) to be ungrammatical due to the assumption of binary grammaticality

V. Extraction Out of Non-Finite Clauses
i. Preliminary
• Literature focuses on extraction out of subjects, but it would be useful to compare this to extraction out of objects
• Sternefeld (1985) argues that Haider (1983) is problematic as the extractions involve unaccusative and passive predicates, if we control for this, we will see that the subject condition holds
• However, things are even more muddled as Sternefeld uses non-d-linked wh-arguments while Haider uses d-linked wh-arguments and Haider uses an auxiliary in V2 while Sternefeld uses a main verb

• Thus, four factors on islandhood described:
  - in-situ/derived
  - unaccusative/unergative matrix predicate
  - d-linked/non-d-linked
  - V2 filled with main verb/auxiliary

ii. Experiment 3 (Sentential Subjects vs. Sentential Objects)

a) Participants and Procedure
• 32 speakers
• Procedure as above

b) Design
• 2x2x2: SUB/OBJ, EXTRACTION, EXTRAPosition

(16) a. Subject, no extraction
Die Diplomarbeit zu schreiben hat die Studentin gelangweilt.
the MA to write has the student.FEM bored
“Writing the MA has bored the student.”

b. Subject, extraction
Welche Arbeit hat denn zu schreiben die Studentin gelangweilt?
which paper has PRT to write the student.FEM bored
“What paper has writing bored the student.”

c. Object, no extraction
Die Studentin hat die Diplomarbeit zu schreiben vorgehabt.
the student.FEM has the MA to write planned
“The student planned to write the MA.”

d. Object, extraction
Welche Arbeit hat denn die Studentin zu schreiben vorgehabt?
which paper has PRT the student.FEM to write planned
“What paper has the student planned to write?”

e. Subject, no extraction, extraposed
Es hat die Studentin gelangweilt die Diplomarbeit zu schreiben.
it has the student.FEM bored the MA to write
“It bored the student to write the MA.”

f. Subject, extraction, extraposed
Welche Arbeit hat (es) denn die Studentin gelangweilt zu schreiben?
which paper has (it) PRT the student.FEM bored to write
“What paper did it bore the student to write?”
g. Object, no extraction, extraposed

Die Studentin hat vorgehabt die Diplomarbeit zu schreiben?
the student.FEM has planned the MA to write
“The student planned to write the MA.”

h. Object, extraction, extraposed

Welche Arbeit hat denn die Studentin vorgehabt zu schreiben?
which paper has PRT the student.FEM planned to write
“Which paper did the student plan to write?”

• Potential Confound: The sets of German predicates that take non-finite sentential subjects and sentential objects do not overlap
• Every wh-argument is d-linked to provide the best chance for extraction

c) Results

• Additional question: What is the base position of sentential arguments?

(17) a. no subj/obj asymmetry in base or extraposed
sentential arguments base-generated in VP, extraction is possible,
extraposition happens later and has no effect on extractability
b. sub/obj asymmetry in base, no asymmetry when extraposed
sentential arguments base-generated in VP, extraction shows CED effects,
extraposed clauses are base-generated in complement positions
c. no subj/obj asymmetry in base, asymmetry when extraposed
sentential arguments base-generated in an “extraposed” complement position
“base position” is a result of movement so freezing blocks extractions
d. sub/obj asymmetry in base and extraposed
sentential arguments base-generated in VP, extraction shows CED effects,
extraposition is rightward movement to adjoined position after extraction,
extraposition does not change permeability of a domain

(18)

Subject extraction again much worse than object extraction
• Slight increase when extracting objects due to speaker dispreference for heavy constituents in preverbal object position overcoming degradation of extraction, though extraposition levels the effect
• Slight effect for extraposition, but independent of extraction
• Thus, only base position matters for extraction, favoring (17d)
• CED effects appear independent of freezing effects

iii) Experiment 4 (Auxiliaries vs. Main Verbs)

a) Participants and Procedure
• 23 speakers
• Procedure as above
b) Design
•2x2: SUB/OBJ, MAIN/AUX

(19) a. Subject, auxiliary
Welche Sonate hat denn den Pianisten zu spielen gelangweilt?
which sonata has PRT the.ACC pianist to play bored
“Which sonata did it bore the man to play?”

b. Subject, main verb
Welche Sonate langweilt denn den Pianisten zu spielen?
which sonata bored PRT the.ACC pianist to play
“Which sonata did it bore the man to play?”

c. Object, auxiliary
Welche Sonate hat denn der Mann zu spielen geplant?
which sonata has PRT the man to play planned
“Which sonata did the man plan to play?”

d. Object, main verb
Welche Sonate plante denn der Mann zu spielen?
which sonata planned PRT the man to play
“Which sonata did the man plan to play?”

c) Results
(20)

iv. Experiment 5 (Separable Verbs)
a) Introduction
• Having an auxiliary in the second position implies a two-part predicate, which might facilitate parsing
• We would expect the same facilitation with other two-part predicates like separable verbs, but the literature relies on introspection which is dubious with such fine-grained distinctions
• No information given regarding participants or procedure

b) Design
•2x2: SEPARABLE, EXTRACTION

(21) a. Separable, no extraction
Die Arbeit zu schreiben regt die Studentin auf.
the paper to write annoys the student up
“Writing the paper annoys the student.”

b. Separable, extraction
Welche Arbeit regt denn zu schreiben die Studentin auf?
which paper annoys PRT to write the student up
“Which paper does writing annoy the student?”

c. Inseparable, no extraction
Die Arbeit zu schreiben ärgert die Studentin.
the paper to write annoys the student
“Writing the paper annoys the student.”

d. Inseparable, extraction
Welche Arbeit ärgert denn zu schreiben die Studentin?
which paper annoys PRT to write the student
“Which paper does writing annoy the student?”
c) Results

(22)

Unsurprisingly, strong effect for EXTRACTION

No effect for SEPARABLE either independently or interactively

Asymmetry discussed in §iiic is probably due entirely to the position of the element that bears semantic content

Jeff Lidz proposes that storing the verb until the gap in the thematic position is reached burdens working memory and the parser must then reconstruct the trace of the head movement and associate it with the sentential argument

Crucially, no reconstruction of head movement is needed with auxiliaries because the past participle bearing the semantic content is simply adjacent to the sentential argument

Verbal particles don't help since this reconstruction still needs to take place

VI. Accounting for the Data

i. Some Problems for The LCA in SOV languages

LCA seems to predict that freezing will prevent extraction out of objects in SOV languages because the object surfaces in a derived position

This is clearly wrong

Additionally, we presented evidence in §Viec that SOV is the basic word order

In fact, the LCA doesn't directly derive SVO order

(23) a. b.

-CC establishes the same relations between non-terminals in both (23a) and (23b) yielding the D-relations in (24a) and hence the non-terminal-to-terminal dominance relations, d in (24b)

(24) a. D(A) = \{<NP_1,VP>, <NP_1,V>, <NP_1,NP_2>, <NP_1,N_2>, <V,N_2>\}

b. d(a) = \{<n_1,v>, <v,n_2>, <n_1,n_2>\}

\(<n_1,v> and <v,n_2> do not force a choice of either structure in (23) if they are interpreted structurally rather than sequentially

If we want to believe that these relations are structural, we will need some way to stipulate how d(a) sets are mapped and will thus need something resembling a head parameter

ii. The LCA as a Last Resort

We have two options at this point:

-Go with Kayne and say that a-CC maps to linear precedence: SVO

-Suggest that it maps into subsequence : OVS, which is typologically odd

Achieving SOV in this framework is going to be ugly, but we've already proposed that Kayne's movement analysis is problematic as well

Instead, we propose that linear ordering is lexically determined by the head and that the LCA serves only to rescue us in situations where we must determine ordering between two non-heads
• This seems like a sensible move since headedness is not universal even within German:
  - VPs are head-final
  - PPs are head-initial
  - Headedness varies lexically for some categories

• With this solution, we retain the notions that specifiers are to the left and that movement is always to the left, but lets us better explain these facts about German (and about other languages as well)

• Additionally, these seems to prevent us needing to add any additional stipulations to our notion of c-command

• Crucially, this allows us to make use of MSO for SOV languages

iii. MSO and Was-für
• If we are building from the bottom up, in the case of extraction from an in-situ subject, we need to linearize the whP in a was-für split before it can be merged into the main spine

• However, once the whP is spelled out and merged in, the elements within it can no longer be accessed by any syntactic operation

• Thus when T and C are merged, the wh-feature on C cannot probe for an attract any element from the whP and the derivation crashes

• Because the object need not be spelled out, after T and C merge the wh-feature can probe into it and find the whord, copying and moving it to SpecCP and allowing the derivation to converge

VII. Across the Board (ATB) Was-für Split
i. The Construction
(25) a. Was hat denn für eine Prinzessin einen Frosch geküsst?
   “What kind of princess kissed what kind of frog?”

   b. Was wurde denn für einem Mädchen für einen Mann vorgestellt?
   what was PRT for a.DAT girl for a man introduced
   “What kind of man was what kind of girl introduced to?”

• It appears that a single was is associated with two instances of für
• These cannot be parsed as exclamatives as the particle denn is only licensed in question contexts
• Even more interestingly, ATB was-für can, for some speakers, ameliorate island violations in a manner similar to Parasitic Gap (PG) constructions

(26) a. Extraction out of subject
   ?*Was hat denn für eine Prinzessin einen Frosch geküsst?
   what has PRT for a princess a frog kissed
   “What kind of princess kissed a frog?”

   b. ATB-extraction
   Was hat denn für eine Prinzessin für einen Frosch geküsst?
   what has PRT for a princess for a frog kissed
   “What kind of princess kissed what kind of frog?”

• If we wish to deal with this gradience effect in a coherent way, we should gather better data
• In an experiment with 23 subjects using the “usual experimental methodology”, 52% of speakers preferred ATB Was-für split to Was-für split out of islands

• 21% did not show this pattern and 26% were indeterminate as they found regular was-für split to be only marginally acceptable

• Variation might be due to difficulty constructing a contextually relevant question and the informal status of Was-für split that lends itself to prescriptive interference

ii) A Sideward Movement Account
• Propose that constituents can be copied and moved into separate phrase markes constructed in parallel

• For simplicity, enumerate (25a) as shown in (26)

(26)
N={T, C, what, has, for, a, princess, for, a, frog, kissed}

• As before, we must construct the specifier separately from the object and verb, leaving us with the elements indicated in (27)

(27)
N={T, C, what, has, for, a, princess, for, a, frog, kissed}

• Because German does not allow a for-PP to feature as thematic agent of a sentence, we must merge a what into the specifier of the whP we have constructed

• But there is no what left in the enumeration! Therefore, we copy the what in the object position and sideward move it to the specifier of whP

• As before, the whP must then be spelled out before it can be merged into the main spine

• However, unlike before, when T and C are merged and the Q-feature on C needs to be checked, there is a what available in the main spine in the object position

• This what is copied and merged into SpecCP and the derivation converges

• Nunes's (1995) chain reduction algorithm deletes all but the highest copy, ensuring that the instances of what in the subject and object positions are deleted