

# Parasitic gaps aren't parasitic, or, The Case of the Uninvited Guest

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# Propositions

We argue for two main propositions in this talk.

- 1 Subject islands, that is, the unacceptability of extractions from subject (ExtrSubj), do not reflect a grammatical constraint (e.g. the Subject Condition). ExtrSubj is indeed more complex than extraction from non-subjects, but this is not a matter of grammar *per se*.
- 2 The amelioration of subject islands in parasitic gap configurations is not the consequence of a special grammatical mechanism. Rather, the parasitic gap configuration reduces the complexity associated with ExtrSubj. Absence of the parasitic gap configuration means that there is a referring expression in the predicate, what we call the Uninvited Guest.

## How to show this?

- 1 An account of parasitic gaps in terms of grammatical structure vs. processing complexity is neutral with respect to the core facts.
- 2 The differences lie outside of the core facts.
  - 1 Some island violations are not ameliorated by parasitic gaps – they are too complex on their own.
  - 2 The factors that are at play in determining judgments in the case of some island violations (and the effects of parasitic gaps) are at play in non-island configurations as well.

It's been known since Ross (1967) that ExtrSubj is problematic. (1a) illustrates a classic subject island, while (1b) illustrates that the same configuration is more acceptable when the gap in the subject – the 'parasitic gap' – is accompanied by a 'true' gap in the clause. The notation  $pg$  denotes a gap in an island that is arguably licensed by the 'true' gap.

- (1) a. \*Who<sub>i</sub> would talking to  $t_i$  about this prove to Sandy that something's up?  
b. Who<sub>i</sub> would talking to  $pg_i$  about this prove to  $t_i$  that something's up?

## Subject condition I

- Ross accounts for restrictions on extraction from sentential subjects by assuming the Sentential Subject Constraint.
- This constraint was generalized to the Subject Condition by Chomsky (1973), and several cases were subsequently argued to fall under Subjacency (Chomsky 1986)
- The lower acceptability of ExtrSubj is in fact quite general, and appears to occur regardless of the type of subject.

## Subject condition I

- (2)
- a. \* Who does talking to *t* bother Mary? [gerund]
  - b. \* Who does us talking to *t* bother Mary? [gerund with pronominal subject]
  - c. \* Who does John talking to *t* bother Mary? [gerund with R-expression subject]
  - d. \* Who does that John talks to *t* bother Mary? [*that* clause]
  - e. \* Who would to talk to *t* bother Mary? [infinitive]
  - f. \* Who would for us/John to *t* talk to bother Mary? [*for-to* infinitive]

## Subject condition II

- g. \* Who do offensive jokes about  $t$  bother Mary? [DP]
- h. \* Who does everyone/the man that talks to  $t$  dislike Mary? [relative clause in a DP; also violates Complex NP Constraint]
- i. \* Who does the fact that John talks to  $t$  bother Mary? [sentential complement of N like *belief*, *claim*]



## Variability of subject islands

In spite of the constraint, some ExtrSubjs are judged to be good

...

- (3) a. What were pictures of *t* seen around the globe?  
(Kluender 1998, 268)
- b. It's the kind of policy statement that jokes about *t*  
are a dime a dozen. (Levine et al. 2001, 204)
- c. There are certain topics that jokes about *t* are  
completely unacceptable. (Levine & Sag 2003, 252,  
n.6)
- d. What did the attempt to find *t* end in failure?  
(Hofmeister & Sag 2010, 370)

[Cited by Chaves & Dery 2014, 97]

... and some are judged to be bad.

- (4) a. \* Which cars were the hoods of *t* damaged by the explosion? (Ross 1967)
- b. \* Which constraint are good examples of *t* needed? (adapted from Sauerland & Elbourne 2002, 304)
- c. ?? What did a bottle of *t* appear in the kitchen? (Polinsky et al. (2013))
- d. \* Which man was the friend of *t* fired?
- e. \* What was the owner of *t* arrested? (Haegeman et al. (2014))

[Cited by Chaves & Dery 2014, 97]

Some of these cases can be improved by manipulating the context and various other properties.

- (5) (?) These are the cars that the previously unblemished hoods of *t* were severely damaged by the explosion.  
[cf. \*Which cars were the hoods of *t* damaged by the explosion?]
- (6) (?) The only remaining constraint that more good examples of *t* are definitely needed is the Subject Condition.  
[Cf. Which constraint are good examples of *t* needed?]

[Note difference between wh-question and relative clause!]

Similar manipulations improve ExtrSubj for the remaining examples in (4).

- (7) a. ? I know that a case of BEER appeared in the DRIVEWAY, but what did a BOTTLE of  $t$  appear in the KITCHEN?
- b. ? This is the man that the very best friend of  $t$  was recently fired.
- c. ? Is this the car that the completely irresponsible owner of  $t$  was just arrested?

## Chaves

Finally, Chaves & Dery (2018) showed experimentally that “subject-internal gaps can in fact become as acceptable as uncontroversially acceptable controls and are actively postulated during on-line sentence comprehension, by simply increasing their frequency, provided that the propositions they express are highly felicitous to begin with.”

The view that ExtrSubj is not inherently ungrammatical is supported by the existence of fully acceptable examples in corpora.

- (8) a. ... with them – the people who love you and who you love, who you laugh with and **who spending time with** is enriching rather than exhausting.
- b. More than anything though, The Joker is a fascinating character **who spending time with** is a treat.
- c. There are some things **which fighting against** is not worth the effort. Concentrating on things which can create significant positive change is much more fruitful.

## Relationship between subject islands and parasitic gaps

- We maintain that it is not sufficient to simply stipulate (a) the contexts in which ExtrSubj is unacceptable, and (b) that the parasitic gap configuration somehow eliminates this unacceptability.
- Rather, we suggest that there is a complexity factor in sentences with subject island violations that is absent in corresponding parasitic gap configurations – the ‘Uninvited Guest’ – and the absence of this factor reduces the severity of the unacceptability.
- If ExtrSubj is not that complex, the absence of the Uninvited Guest means that there is little or no additional complexity, and it will be judged acceptable.

## The basic idea of the Uninvited Guest I

[Elaborates the last point . . .]

- The basic idea of the Uninvited Guest is that however acceptable or unacceptable the extraction from the subject is, encountering an overt argument that is distinct from the extracted argument adds processing cost and therefore reduces acceptability.
- What this means is that an island violation that is judged to be acceptable will be judged to be worse when an overt argument is added.



## The basic idea of the Uninvited Guest II

- If the island violation is completely unacceptable to begin with, then adding the argument will of course have no clear effect.
- Moreover, we expect that the degree of unacceptability will correlate with the referentiality of the argument.
- A gap that is bound by a previously identified  $A'$  constituent requires no additional processing to identify the identity of the referent.
- Thus it will be most acceptable, other things being equal. This is the parasitic gap configuration.

## Referentiality I

The role of referentiality in processing complexity has been already demonstrated.

- An early proposal that processing a referring expression contributes complexity is due to Gibson, who proposes that encountering a full NP while processing a filler-gap dependency adds measurable complexity to processing (Gibson 1991, 1998, 2000; Gibson & Hickok 1993; Gibson & Pearlmutter 1998).
- Developing this general idea, consider the acceptable ExtrSubj that we have noted thus far.

## Referentiality II

- The best cases cited in the literature are intransitives or passives (cf. (3)), with no referring expression in the predicate.
  - (3) a. What were pictures of  $t$  seen around the globe?  
(Kluender 1998, 268)
  - b. It's the kind of policy statement that jokes about  $t$  are a dime a dozen. (Levine et al. 2001, 204)
  - c. There are certain topics that jokes about  $t$  are completely unacceptable. (Levine & Sag 2003, 252, n.6)

## Referentiality III

d. What did the attempt to find  $t$  end in failure?  
(Hofmeister & Sag 2010, 370)

[Cited by Chaves & Dery 2014, 97]

- Of course. there are certainly intransitives and passives that are unacceptable (cf. (4)).
- But if we focus just on the acceptable cases, we find that we can make them less acceptable simply by replacing the intransitive or passive predicate with one that contains a referring argument.

- (9) a. The Joker is a fascinating character who spending time with  $t$   
 $\left\{ \begin{array}{l} \text{is a treat} \\ \text{*?drives Sandy crazy} \end{array} \right\}$ .
- b. \*I will be meeting my co-teacher, who getting along with  $t$   
 $\left\{ \begin{array}{l} \text{is crucial to my sanity in Korea} \\ \text{*irritates the other teachers} \end{array} \right\}$ .
- c. ... they're just running the same manufacturing process which spending money on  $t$   
 $\left\{ \begin{array}{l} \text{would be pointless} \\ \text{?will make the new process useless} \end{array} \right\}$ .
- d. I'm in the process of paying back my latest bout of kleptomania, which fighting against  $t$   
 $\left\{ \begin{array}{l} \text{is an everyday struggle} \\ \text{?has prevented curing my diabetes} \end{array} \right\}$ .

## Referentiality plays a role in the acceptability of island violations

- (10) a. ? a person that everyone that talked to *t* felt uneasy about Sandy
- b. ?? a person that the officer that talked to *t* felt uneasy about Sandy
- c. \* a person that the very same officer that talked to *t* felt uneasy about Sandy

## Gradient judgments with parasitic gaps

In fact the same gradient judgment occurs when there is a parasitic gap configuration (i.e. a true gap), suggesting that the amelioration due to the parasitic gap configuration is a **constant factor** that interacts with other factors at play elsewhere in the sentence.

- (11) a. a person that everyone that talked to *pg* felt uneasy about *t*
- b. ? a person that the officer that talked to *pg* felt uneasy about *t*
- c. ?? a person that the very same officer that talked to *pg* felt uneasy about *t*

## Gradient judgments elsewhere I

Assuming that the referentiality of the NPs is in general a factor contributing to unacceptability, we would expect that the same type of acceptability ranking should be found in cases where there is no 'island violation' in the strict sense. The examples in (12) (next slide) contain a single gap with increasing referentiality of the NPs, while those in (13) are identical except that they contain two gaps, neither of which is in an island. The  $>$  sign indicates the relative acceptability of the examples.



## Gradient judgments elsewhere

- (12)
- a. a person who I talked about working with  $t$
  - b. a person who I talked about working with  $t$  to some good friends of Sandy's >
  - c. a person who I talked about everyone working with  $t$  to some good friends of Sandy's >
  - d. a person who I talked about the new assistant working with  $t$  to some good friends of Sandy's

## Gradient judgments elsewhere

- (13)
- a. a person who I talked about working with  $t$
  - b. a person who I talked about working with  $t$  to some good friends of  $t$  >
  - c. a person who I talked about everyone working with  $t$  to some good friends of  $t$  >
  - d. a person who I talked about the new assistant working with  $t$  to some good friends of  $t$

## Coordination I

The Uninvited Guest plays a role in asymmetric extraction from coordinate structures.

Coordinate structure constraint (Ross 1967)

- (14)
- a. \* The lute which Henry plays *t* and sings madrigals is warped.
  - b. \* The madrigals which Henry plays the lute and sings *t* sound lousy.
  - c. \* The nurse who *t* polished her trombone and the plumber computed my tax was a blonde.
  - d. \* Which trombone did the nurse polish *t* and the plumber computed my tax?

## Coordination II

- e. \* The plumber who the nurse polished her trombone and  $t$  computed my tax was a hefty fellow.
- f. \* Whose tax did the nurse polish her trombone and the plumber compute  $t$ ?

## Asymmetric extraction

Ross (1967, 168) also noted that there are acceptable cases of asymmetric extraction from coordinate structures.

- (15)
- a. I went to the store and bought some whisky.
  - b. I went to the store and Mike bought some whisky.
  - c. Here's the whisky which I went to the store and bought.

Subsequently, many others have made similar observations, such as those in (16).

- (16) a. Who<sub>i</sub> did Lizzie Borden take an ax and whack  $t_i$  to death?
- b. How much<sub>i</sub> can you drink  $t_i$  and still stay sober?  
(Goldsmith 1985)
- c. How many lakes<sub>i</sub> can we destroy  $t_i$  and not arouse public antipathy?
- d. How many kinds of tequila<sub>i</sub> has he [snuck off to Mexico, sampled  $t_i$  , and come back the same day without telling anyone]? (Lakoff 1986)

- e. Concerts that short, you can leave work early, hear the entirety of  $t_i$ , and still be back at the job before anyone notices you are gone. (Lakoff 1986)

Kehler (1996) makes a convincing case that asymmetric extraction is best when there is a non-parallel coherence relation between the two conjuncts.

- When the conjuncts are parallel, as in (14) (the classic Ross examples), the extraction must be parallel.
- Effectively, asymmetric extraction conflicts with the semantic parallelism.
- But when there is a coherence relation, the conjuncts are interpreted as connected to one another in some way, allowing one argument to be extracted.



- The function of the Uninvited Guest in the case of coordination is to interfere with the coherence of two conjuncts, e.g. by introducing a new discourse participant that makes it difficult to construe the two events as connected.
- The presence of the Uninvited Guest, which refers to an entity that is distinct from the subject of the first conjunct, requires that the connection involve actions committed by two distinct individuals.

In fact, we can construct minimal pairs with many of the examples in (15)-(16) by introducing an additional referring expression – the Uninvited Guest – in the second conjunct.

- (17)
- a. Here's the whisky which I went to the store and (\*Mike) bought *t*.
  - b. Who did Lizzie Borden take an ax and (\*Sandy) whack *t* to death?
  - c. How much can you drink *t* and (\*Sandy) still stay sober?
  - d. How many lakes can we destroy *t* and (\*the government) not arouse public antipathy?

Some of these examples are better when the Uninvited Guest is coreferential with the subject of the first conjunct.

- (18) a. ? Here's the whisky which I went to the store and I bought *t*.
- b. ? those poor people that Lizzie Borden took an ax and she whacked *t* to death
- c. ? How much can you drink *t* and you still stay sober?
- d. Lakes like that we can destroy *t* and we won't arouse public antipathy.

And using contrastive focus to mark the connectedness of the two events may also contribute to acceptability. Compare (19) with (17a), for example.

(19) Here's the whisky which SANDY went to the store but  
MIKE bought *t*.

## Insufficiency of the Uninvited Guest I

- Finally, we provide support for the Uninvited Guest as a critical factor in the unacceptability of island violations by showing that there are island violations that are unaffected by a parasitic gap configuration.
- Our interpretation of these cases is that the island violations are so unacceptable that the effect of a gap in the predicate and a referring expression in the predicate cannot be distinguished.

## Insufficiency of the Uninvited Guest II

- If the true gap licenses a gap inside of an island that would otherwise be illicit, then we might expect that all such configurations would be acceptable. But they are not, as the examples in (20) show.

- (20) a. \* Who<sub>i</sub> did John give  $pg_i$ 's pictures to  
 $\left\{ \begin{array}{c} t_i \\ \text{Mary} \end{array} \right\}$ ? [Left Branch Constraint]
- b. \* Who<sub>i</sub> did the policeman that arrested  $pg_i$  steal  
some money from  $\left\{ \begin{array}{c} t_i \\ \text{Mary} \end{array} \right\}$ ? [Complex NP  
Constraint]

## Insufficiency of the Uninvited Guest III

- c. \* Which author<sub>*i*</sub> did you introduce  $\left\{ \begin{array}{l} t_i \\ \text{Mary} \end{array} \right\}$  to  
the critic that offended  $pg_i$ ? [Complex NP  
Constraint]
- d. \* Who<sub>*i*</sub> did you suggest to  $\left\{ \begin{array}{l} t_i \\ \text{Mary} \end{array} \right\}$  that  $pg_i$   
would win? [ECP/*that-t* Constraint]
- e. \* Who<sub>*i*</sub> did you mention that  $pg_i$  talked to  
 $\left\{ \begin{array}{l} t_i \\ \text{Mary} \end{array} \right\}$ ? [ECP/*that-t* Constraint]

## Insufficiency of the Uninvited Guest IV

- f. \* Who<sub>i</sub> did you talk to  $\left\{ \begin{array}{l} t_i \\ \text{Mary} \end{array} \right\}$  even though  
*pg<sub>i</sub>* had argued with John?  
[CED+Complementizer-t Constraint]



## Insufficiency of the Uninvited Guest

- We contend that the extractions in (20) are sufficiently complex that replacing the Uninvited Guest with a gap cannot get them across the threshold of acceptability.
- If we are right, then there is no general ‘parasitic gap’ mechanism, however it is formulated in derivational or configurational terms (e.g., Chomsky (1986), Frampton (1990), Kayne (1983) and many others).
- Rather, the parasitic gap phenomenon is on a spectrum of acceptability with the Uninvited Guest, in that it shows a range of unacceptability depending on referentiality of arguments and other factors.

## Uninvited Guest outside of islands

- Notice that this relationship holds even in the absence of traditional island configurations.
- In (21), neither gap is problematic, and the ATB configuration is acceptable.

- (21)
- Who<sub>*i*</sub> did you introduce friends of Bill to enemies of *t<sub>i</sub>*?
  - Who<sub>*i*</sub> did you introduce friends of *t<sub>i</sub>* to enemies of Hillary?
  - Who<sub>*i*</sub> did you introduce friends of *t<sub>i</sub>* to enemies of *t<sub>i</sub>*?

- But when one of the gaps is problematic on its own, even if it is not in an island, the addition of a second gap does not improve matters.
- For example, in (22a,b) the particle in VP final position is too far from the verb.

- (22)
- ? Who<sub>i</sub> did you look the information about  $t_i$  up?
  - ?? Who<sub>i</sub> did you look the information about  $t_i$  up for  $t_i$ ?
  - Who were you seeking information about  $t_i$ ?
  - Who were you seeking information about  $t_i$  for  $t_i$ ?

## Summary

- We have argued that subject islands are not islands in the sense of a grammatical constraint.
- The unacceptability of ExtrSubj is due to a number of factors, most prominently the presence in the predicate of a referring expressions, the Uninvited Guest, that is not linked to the subject.
- The replacement of the Uninvited Guest by a gap links the predicate more closely to the subject since the gaps in both of them are bound by the same  $A'$  operator.

## Examples from corpora I

(23) *getting along with*

- a. -... with them – the people who love you and who you love, who you laugh with and **who spending time with** is enriching rather than exhausting.<sup>1</sup>
- b. And she was one who spending time with was priceless – a gift, worth every minute? Yes, I get that she was ‘diagnosed’ with cancer just shy of 3 years ago, but ...<sup>2</sup>
- c. More than anything though, The Joker is a fascinating character **who spending time with** is a treat.<sup>3</sup>

## Examples from corpora II

- d. Focus on those **with whom spending time** is delightful, client sessions which are such a pleasure that time simply flies.<sup>4</sup>
- e. I will be meeting my co-teacher, **who getting along with** is crucial to my sanity in Korea.<sup>5</sup>

(24) *spending time with*

- a. I'm looking for someone who I click with. You know, the type of person **who spending time with** is effortless.<sup>6</sup>

## Examples from corpora III

- b. So thoughtful!! Gifts from someone **who spending time with** is a relief, a breath of fresh air, like walking into your home and sitting on the couch after a long day, etc, ect!<sup>7</sup>
- c. IT'S GONE. TIME WITH MY MOM IS GONE. And she was one **who spending time with** was priceless – a gift, worth every minute?<sup>8</sup>

## Examples from corpora IV

- d. Survived by her children, Mae (Terry), Dale (Andelyn), Joanne (Gary), Cathy (Jordan), George, Betty (Tim), Danny (Angela); a proud grandmother of 14 grandchildren and 16 great-grandchildren, **who spending time with** was one of her finest joys; brothers, Harold and Mark (Pearl); sisters, Jennie and Joan.<sup>9</sup>
- e. In your head you're able to let the mind wander to all sorts of corners, day dreaming about the happy things you hope might happen one day, the good times you've enjoyed, and the people **who spending time with** makes you feel good.<sup>10</sup>



## Examples from corpora V

- f. The purpose of a relationship (in my mind) is to find someone **who spending time with** makes you happier than you would be on your own, this guy's behaviour does not represent that in my opinion and it certainly doesn't sound like minor character traits that you may be able to change with time because it doesn't sound like he's at all willing to change.<sup>11</sup>
- g. I can see how isolated you are feeling - does writing here help to ease that? Is there anyone locally who you do feel able to reach out? Is there anyone **who spending time with** helps to alleviate that feeling?<sup>12</sup>

## Examples from corpora VI

- h. There's frequently someone **who spending time with** is the opposite of a gg with in a loss (often even in wins).<sup>13</sup>
- i. Words won't describe how much I love you man, you're really a good and a funny friend **who spending time with** is like living in heaven. Happy birthday and I hope from my deep heart success for your life and to always achieve your goals.<sup>14</sup>
- j. And thus you become one of those friends **who spending time with** is a ridiculous chore.<sup>15</sup>

## Examples from corpora VII

- k. An unparalleled, unique woman with nothing ever to say and **who spending time with** is crushingly dull.  
[link omitted to save space]

(25) *with whom spending time*

- a. I Hate Myself :) centers on two thoroughly repellent, self-absorbed figures **with whom spending time** proves a nearly intolerable trial.<sup>16</sup>
- b. I got to know Maarten as a bonvivant, classic philosopher and thinker **with whom spending time** is joyful as well as stimulating.<sup>17</sup>

## Examples from corpora VIII

- c. The pig, while messy, was not as messy as Rick, **with whom spending time** remains glorious torture: 'Lead Balloon' returns<sup>18</sup>

(26) Miscellaneous gerunds

- a. There are many other changes, in minor detail **which finding out about** is almost a hobby on its own !!<sup>19</sup>

## Examples from corpora IX

- b. I'm a guy who likes traveling, meeting people and places. After living in US, I could increase this desire of knowing the World and its different cultures. Once you start it, you don't want to stop anymore. Also, I am a person **who getting along with** is really easy. Love music, sports, dancing, jokes, fun. [Not a native speaker?]<sup>20</sup>
- c. I think you are a giant jackass with a name of an ancient actor **which making jokes about** is no longer funny, even he is probably sick of it.<sup>21</sup>

## Examples from corpora X

- d. It's old tech so nobody is invested in improving it further meaning that what Nintendo launched with is what they're stuck with, they likely cost almost as much to product now as they did then as they're just running the same manufacturing process **which spending money on** would be pointless.<sup>22</sup>
- e. As long as you have the correct e-mail address for the recipient (the only scary bit) then the system works well and is ideal for those **who buying presents for** is. . .<sup>23</sup>

## Examples from corpora XI

- f. I've been caught for some really minor things. I'm in the process of paying back my latest bout of kleptomania, **which fighting against** is an everyday struggle.<sup>24</sup>
- g. There are some things **which fighting against** is not worth the effort. Concentrating on things which can create significant positive change is much more fruitful.<sup>25</sup>
- h. you are one of those **who arguing with** is just like with women . . . useless [sic]<sup>26</sup>

## Examples from corpora XII

- i. I just defended you by saying /pol/ is all about defying authorities, **which appealing to** is a fallacy, and you call 'us' peterson \*\*\*\*\*<sub>S</sub>.<sup>27</sup>
- j. If you are absent for a class, you should get any assignments and complete it before the next time the class meets. This is a class **that keeping up with** is really important since topics tend to build on one another.<sup>28</sup>
- k. Suddenly, the locusts disappeared and were replaced by rows of young corn plants that at first I mistook for the green cannon lilies **that taking care of** was part of my work assignment.<sup>29</sup>



## Examples from corpora XIII

- l. When I faced a difficult decision, a challenge, a controversial topic or was in a place **that getting out of** was tough, Dave would look me straight in the eye and tell me, “Do the right thing.”<sup>30</sup>
- m. Nov 22, 2009 – It is no wonder that I am already missing New York, a city that is extremely easy to fall in love with and **that staying away from** is tremendously ...<sup>31</sup>
- n. My co-workers were all older individuals **with who [sic] getting along with** was a pleasure and I’m sure they might say the same about me.<sup>32</sup>

## Examples from corpora XIV

- o. She got all worked up over someone who's probably not going appreciate her advice (at least not now), and **who living with** is just going to continue being intolerable.<sup>33</sup>
- p. Here I am, getting up early for a soccer match, but I can't make myself get up and spend time with God, **who having a relationship with** is so much more important than watching sports.<sup>34</sup>

### (27) *Infinitivals*

## Examples from corpora XV

- a. The Liberals are in permanent thrall to the protectionist Nationals who make up the coalition numbers, some of whom have social positions **which to describe as antiquated** is insulting to antiques.<sup>35</sup>
- b. Leaving the room, she is quick to offer you some Arabic coffee and dates **which to refuse** would be insane because both are delicious, and an opportunity to relax and eat is welcome when working twelve hours.<sup>36</sup>

## Examples from corpora XVI

- c. ... enactment, **which to refuse** would indeed be assuming the responsibility by thwarting the Governor's policy. The honourable member for Ellesmere had ...<sup>37</sup>
- d. I desire that you accept of no offers of transportation from officials who deprived you of the very food, in some cases, which was necessary to supply your pressing wants, and who couple their offers of a free passage with conditions **which to accept** would cast a stain upon your patriotism as Irishmen and as free citizens, who are bound to sympathize with every struggling nationality.<sup>38</sup>

## Examples from corpora XVII

- e. The moment itself was something **which to deny** would be a blasphemy.<sup>39</sup>
- f. On various occasions, I have deplored the disgraceful event, **which to deny** would betray a defiance of truth, or a lapse of faculties, best refuted by your uniform reception of my, perhaps too frequent, addresses.<sup>40</sup>
- g. ... spirit fond of encountering difficulties, **which to avoid** would incur no censure, but **which to meet** would be impertinent and hazardous.<sup>41</sup>

(28) *that the owner of*

## Examples from corpora XVIII

- a. After one year, any repair of a water service line **that the owner of** is responsible for will be billed to the owner at the current schedule of rates and fees and ...<sup>42</sup>
- b. A distressed home is either one that has already been foreclosed on or one **that the owner of** is trying to avoid foreclosure by listing on the ...<sup>43</sup>
- c. ... because it's worth supporting a small Time Business that the owner of is very good-hearted and his staff also is too every chance I get I refer potential clients to<sup>44</sup>

## Examples from corpora XIX

- d. In fact, there are a couple of Bajas sitting in my back yard right now **which the owner of** is talking about selling.<sup>45</sup> I'm about to move and they both ...<sup>46</sup>
- e. there is stock on the property **which the owner of** is liable for if they get onto the road and cause damage then nobody cares whether a ...<sup>47</sup>
- f. a 390SE **which the owner of** was just “odd” finally after much haggling and a viewing where he wouldn't let me drive it (or drive it himself) ...<sup>48</sup>

(29) *which the cure for*

## Examples from corpora XX

- a. A whole box of shredded wheat (vet visit), a bee (vet visit), a razor, and the latest mouse bait (2 days ago), **which the cure for** is 1 Tbs. of...<sup>49</sup>
- b. If you feed your pet a Poisonous Jelly, it should wind up with Neomonina, **which the cure for** is much cheaper.<sup>50</sup>
- c. Soot means rich ie incomplete combustion **which the cure for** is more air.<sup>51</sup>

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<sup>1</sup><https://my.lumitylife.com/.../is-it-time-for-a-toxic-friend-detox/30.08.2016>

<sup>2</sup>Time: My Love Language — - Adrienne Graves  
[www.adriennegraves.com/uncategorized/time-my-love-language/](http://www.adriennegraves.com/uncategorized/time-my-love-language/)

<sup>3</sup><https://pgcooper1939.wordpress.com/2012/07/12/pg-cooper-the-dark-knight-review/>

<sup>4</sup><http://organizeforsuccess.blogspot.de/2016/01/document-your-ideal->



## Weak crossover I

Another extraction context that is sensitive to referentiality is weak crossover, illustrated in (28).

(30) (\*)Who<sub>i</sub> does his<sub>i</sub> mother love  $t_i$ .

The processing complexity in this configuration is very different than that seen in ExtrSubj. Nevertheless, we find that that weak crossover violations are ameliorated when the wh-antecedent of the pronoun/gap pair is already linked to another gap (Culicover 2013). E.g.,

(31) a. ? Who<sub>i</sub> does his<sub>i</sub> mother love  $t_i$  and Mary dislike  $t_i$ ?

## Weak crossover II

- b. Who<sub>i</sub> does Mary dislike t<sub>i</sub> and his<sub>i</sub> mother love t<sub>i</sub>?
- c. ? I found out who<sub>i</sub> his<sub>i</sub> mother loves t<sub>i</sub> and Mary dislikes t<sub>i</sub>.
- d. I found out who<sub>i</sub> Mary dislikes t<sub>i</sub> and his<sub>i</sub> mother loves t<sub>i</sub>.

Such examples suggest that the interpretation of the gap in a configuration that is difficult to process is facilitated when the A'-constituent is more specified (see Levine & Hukari 2006). In effect, *his* in (29a,c) is comparable to the Uninvited Guest, in that its reference demands to be determined while at the same time the reference of the wh-phrase in A' position is at issue. In (29 b,d),

## Weak crossover III

the  $A'$ -constituent is assigned a  $\theta$ -role by the first gap before the pronoun is encountered, which provides an antecedent for the pronoun.

## Intrusions I

Here we provide examples of so-called adjunct islands that suggest that when the processing of a filler-gap dependency is complex, the intrusion of an overt referring expression can add sufficient complexity that the sentence is judged to be unacceptable. Replacing the overt referring expression – the Uninvited Guest – with a gap that is dependent on the filler can reduce the processing load and render the sentence acceptable.

- (32) a. the professor who<sub>i</sub> I went to MIT to work with  $t_i$   
b. ? the professor who<sub>i</sub> I went to MIT so I could work with  $t_i$

## Intrusions II

- c. ?? the professor who<sub>i</sub> I went to MIT so Sandy could work with  $t_i$
- d. \* the professor who<sub>i</sub> I went to MIT so the head of my department could work with  $t_i$
- (33) a. ? a movie that I get depressed when thinking about  $t_i$   
b. ?? a movie that I get depressed whenever I think about  $t_i$
- (34) a. ? a movie that I eat chocolate when thinking about  $t_i$   
b. \* a movie that I eat chocolate whenever I think about  $t_i$

## Intrusions III

- (35) a. ? the professor who I was successful without ever talking to  $t_i$   
b. \* the professor who I was successful without Sandy ever talking to  $t_i$

It is also well-known that each of these less than acceptable configurations can be ameliorated by putting a true gap in the main clause – these are standard parasitic gap constructions. As the examples in (34)-(35) show, the ‘true’ gap adds to acceptability, but differences due to the island configuration remain.

## Intrusions IV

- (36) a. the professor who<sub>i</sub> I went to MIT with  $t_i$  to work with  $pg_i$   
b. the professor who<sub>i</sub> I went to MIT with  $t_i$  so I could work with  $pg_i$   
c. ? the professor who<sub>i</sub> I went to MIT with  $t_i$  so Sandy could work with  $pg_i$   
d. ?? the professor who<sub>i</sub> I went to MIT with  $t_i$  so the head of my department could work with  $pg_i$
- (37) a. the professor who I was impressed by  $t_i$  without even talking with  $t_i$

## Intrusions V

- b. ? the professor who I was impressed by  $t_i$  without even Sandy talking with  $t_i$ ;
- c. ?? the professor who I was impressed by  $t_i$  without even the head of my department talking with  $t_i$ ;

Along related lines, Grano & Lasnik (2018) discuss examples that they claim show that certain dependencies are typically restricted to simple tensed clauses, but may extend across clause boundaries into non-finite clauses, or into finite clauses if there is an intervening bound pronoun. An illustration of the different cases is given in (36). The examples and the judgments are due to Grano & Lasnik (2018).



## Intrusions VI

- (38) a. This magazine is too lowbrow [for John to read \_\_\_].  
b. \* This magazine is too lowbrow [for John to claim that Bill reads \_\_\_].  
c. This magazine is too lowbrow [for John to claim/tend to read \_\_\_].  
d. ? This magazine is too lowbrow [for John<sub>i</sub> to claim that he<sub>i</sub> reads \_\_\_].

## Intrusions VII

Grano & Lasnik (2018) provide experimental evidence to support the differences in acceptability noted here.

Grano & Lasnik (2018) interpret these (and other) judgments in a theoretical framework where (36d) is grammatical while (36b) is ungrammatical. However, as they note, differences in acceptability cannot tell us what is grammatical and what is not.

Our interpretation of these data is that they are fully consistent with the Uninvited Guest, a hypothesis that does not depend on stipulations such as “Unvalued features on the head of the complement to the phase head keep the phase open” and “Bound pronouns optionally enter the derivation with unvalued  $\phi$ -features” (Grano & Lasnik 2018, 482). Our interpretation seems to be

## Intrusions VIII

particularly natural, given that Grano & Lasnik (2018, 480) actually admit that the difference in acceptability between (36b) and (36c) is very likely the consequence of a difference in processing complexity.

## References I

- Chaves, Rui P & Jeruen E Dery. 2014. Which subject islands will the acceptability of improve with repeated exposure? In Robert E. Santana-LaBarge (ed.), *Proceedings of the thirty-first meeting of the west coast conference on formal linguistics*, 96–106. Somerville, MA: Cascadilla Proceedings Project.
- Chaves, Rui P. & Jeruen E. Dery. 2018. Frequency effects in subject islands. *Journal of Linguistics* XX. 1–47.  
doi:10.1017/S0022226718000294.
- Chomsky, Noam. 1973. Conditions on transformations. In Stephen Anderson & Paul Kiparsky (eds.), *A Festschrift for Morris Halle*, 232–286. New York: Holt, Reinhart & Winston.

## References II

- Chomsky, Noam. 1986. *Barriers*. Cambridge, MA: MIT Press.
- Culicover, Peter W. 2013. The role of linear order in the computation of referential dependencies. *Lingua* 136. 125–44.
- Frampton, John. 1990. Parasitic gaps and the theory of wh-chains. *Linguistic Inquiry* 21(1). 49–78.
- Gibson, Edward. 1991. *A computational theory of human linguistic processing: Memory limitations and processing breakdown*. Pittsburgh: Carnegie Mellon University dissertation.
- Gibson, Edward. 1998. Linguistic complexity: Locality of syntactic dependencies. *Cognition* 68(1). 1–76.

## References III

- Gibson, Edward. 2000. The dependency locality theory: a distance-based theory of linguistic complexity. In Alec Marantz, Yasushi Miyashita & Wayne O'Neil (eds.), *Image, language, brain*, 95–126. Cambridge, MA: MIT Press.
- Gibson, Edward & Gregory Hickok. 1993. Sentence processing with empty categories. *Language and Cognitive Processes* 8(2). 147–161.
- Gibson, Edward & Neal Pearlmutter. 1998. Constraints on sentence comprehension. *Trends in Cognitive Science* 2. 262–268.

## References IV

- Goldsmith, John. 1985. A principled exception to the Coordinate Structure Constraint. In William H. Eilfort, Paul D. Kroeber & Karen L. Peterson (eds.), *Proceedings of the Chicago Linguistic Society 21*, 133–143.
- Grano, Thomas & Howard Lasnik. 2018. How to neutralize a finite clause boundary: Phase theory and the grammar of bound pronouns. *Linguistic Inquiry* 49(3). 465–499.
- Haegeman, Liliane, Ángel L Jiménez-Fernández & Andrew Radford. 2014. Deconstructing the subject condition in terms of cumulative constraint violation. *The Linguistic Review* 31(1). 73–150.

## References V

- Hofmeister, Philip. & Ivan A. Sag. 2010. Cognitive constraints and island effects. *Language* 86. 366–415.
- Kayne, Richard S. 1983. Connectedness. *Linguistic Inquiry* 14(2). 223–249.
- Kehler, Andrew. 1996. Coherence and the coordinate structure constraint. In *Annual meeting of the berkeley linguistics society*, vol. 22, 220–231.
- Kluender, Robert. 1998. On the distinction between strong and weak islands: a processing perspective. In Peter W. Culicover & Louise McNally (eds.), *Syntax and semantics 29: The limits of syntax*, 241–279. San Diego, CA: Academic Press.



## References VI

- Lakoff, George. 1986. Frame semantic control of the Coordinate Structure Constraint. In Anne M. Farley, Peter T. Farley & Karl-Erik McCullough (eds.), *Proceedings of the chicago linguistic society 22*, 152–167.
- Levine, Robert & Ivan Sag. 2003. Some empirical issues in the grammar of extraction. In *Proceedings of the 10th international conference on head-driven phrase structure grammar*, 236–256.
- Levine, Robert D. & Thomas Hukari. 2006. *The unity of unbounded dependency constructions*. Stanford, CA:: CSLI.

## References VII

- Levine, Robert D., Thomas E. Hukari & Michael Calcagno. 2001. Parasitic gaps in English: some overlooked cases and their theoretical implications. In Peter W. Culicover & Paul Postal (eds.), *Parasitic gaps*, 181–222. Cambridge, MA: MIT Press.
- Polinsky, Maria, Carlos G. Gallo, Peter Graff, Ekaterina Kravtchenko, Adam Milton Morgan & Anne Sturgeon. 2013. Subject islands are different. In Jon Sprouse & Norbert Hornstein (eds.), *Experimental syntax and island effects*, 286–309. Cambridge University Press.
- Ross, John R. 1967. *Constraints on variables in syntax*: Massachusetts Institute of Technology dissertation.

## References VIII

Sauerland, Uli & Paul Elbourne. 2002. Total reconstruction, PF-movement, and the derivational order. *Linguistic Inquiry* 33(2). 283–319.