

UNIVERSITY OF CALIFORNIA
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**Not Just Emphatic Reflexives Themselves:
Their Syntax, Semantics and Prosody**

A thesis submitted in partial satisfaction
of the requirements for the degree
Master of Arts in Linguistics

by

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*To my maternal grandparents,
who always took great interest in my academic progress*

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ABSTRACT OF THE THESIS

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In addition to the acting as pronominal argument DPs, reflexive pronouns seem to be able to be used as emphatic adjuncts, as in “Sayoko drove to LA herself.” Such cases of reflexive pronoun adjuncts are termed Emphatic Reflexives (ERs) and have been investigated by many in the course of generative linguistics (Moravcsik 1972, Edmondson and Plank 1978, Browning 1993, Eckardt 2001, Hole 2002, König and Gast 2002, Bergeton 2004, König and Siemund 2005, and Tavano 2006, to name a few). Despite a rather full literature, past analyses leave some questions inadequately or not at all answered.

I endeavor to explain as many of the phenomena as possible, focusing on three main points. First, there are exactly two readings of ERs – an agentive adverbial and an adnominal intensifier – each with its own felicity conditions, syntactic licensing and semantic properties. Second, ERs are indeed instances of reflexive pronouns that are subject to the Binding Conditions; and though some ERs may appear linearly disjoint from their associate DP, they are always (extremely locally) bound. Thirdly,

all ERs are obligatorily contrastively focused under both readings, and they exhibit prosodic properties related to this.

In making these arguments, I also find evidence for hypotheses that may have broader impact. For example, the data in this paper supports the theory that volitional Agents are licensed separately and above the licensing position of non-volitional Causers; and the MAE_ToBI model of English intonational structure needs modification.

SECTION 1

Introduction

Emphatic Reflexives may seem like an isolated phenomenon. However, as I aim to demonstrate, they are in fact a good example of interfacing between syntax, semantics and prosody. Apart from making clear the phenomena related to ERs, I find that certain ERs interact with verbal structure in such a way as to make predictions about stranding and the positions of traces, the site of verb phrase ellipsis, and the hierarchy of subject theta roles. Furthermore, I find (a) that ERs sometimes exemplify prosodic characteristics that are unpredicted by current models of intonation, as well as (b) that their phrasing may be related to parentheticals and their syntax/prosody.

This paper is divided into six sections. The first, the introduction, provides a bird's eye view of ERs, showing that they are not limited to English, that they have a certain prosody, and that ERs may encompass more than one meaning. In Section 2, by analyzing restrictions on ER usage, I show conclusively that there must be two lexically differentiated readings of ERs, and – despite what others may have claimed elsewhere – one is an agentive adverbial and the other is an adnominal intensifier. In Section 3, I review semantic proposals for both types of ERs in languages (such as German) whose ERs do not use reflexive pronouns, and then extend those analyses so that they can apply to languages (such as English) in which the ERs are represented by reflexive pronouns. Next, in Section 4, I tackle the as-yet under-researched

problem of syntactic positions for ERs, as well as their binding. I provide an analysis in which the binding is easily achieved due to the syntactic positions that make for very local relationships between ERs and their associate DPs. In Section 5, after the syntax and semantics are understood, I set out to experimentally measure the prosodic properties of ERs – especially those which are predicted to be necessary for felicity. Finally, in the Section 5, the conclusion section, I summarize the findings of this research and present areas which require further scrutiny.

1.1 The Emphatic Reflexive

To begin, I will introduce what is meant by the term *Emphatic Reflexive*.¹ Emphatic Reflexives (henceforth ERs) are, in languages like English, reflexive pronouns used in such a way as to appear to be modifiers. This is in opposition to the more canonical usage of reflexive pronouns as bound variable arguments in a clause. Examples of the two uses are given below in (1) & (2).

- (1) Clausal argument
John pinched **himself**.
- (2) Emphatic Reflexive
John pinched me **himself**.

In both examples, we have a clearly transitive predicate, *pinch*, which must have exactly one object. In (1), the requirement for an object is satisfied by the bound pronoun *himself*. On the other hand, the status of *himself* in (2) is initially unclear,

¹Emphatic Reflexives are called Intensifiers, Intensifying Reflexives or Intensive Pronouns by some. However, for the purposes of this investigation, these terms may be too broad (Intensifiers may include elements such as “even”) or too specific (Intensive Pronouns are often limited to a certain syntagmatic structure such as “I myself”).

as *me* is clearly the object. Given the facts that *himself* (i) lacks a clear thematic role in (2) and (ii) feels like a modifier as much as anything, ERs like it have been analyzed as adjuncts rather than arguments.

1.2 A Cross-linguistic Phenomenon

English is not alone in its usage of the same word/morpheme for a bound variable arguments of a predicate and for an adjunct modifier. In fact, approximately half of the world's languages do so. (König and Siemund 2005) Below is a small, yet typologically diverse, sample of languages, showing clausal argument usage given in (a) and the ER given in (b).²

(3) Mandarin Chinese

- a. *Lǎowáng bù xǐhuan zìjǐ*
 Laowang not like self
 'Laowang does not like himself'
- b. *nǐ wèishénme bù zìjǐ xǐ ne?*
 you why not self wash PRT
 'Why don't you do your washing yourself?'

(4) Arabic

- a. *baʕti nafs-i furθa li n-najaah*
 I.will.give self-1SG.GEN chance for 1PL-succeed
 'I will give myself a chance to succeed.'
- b. *al-mudīr-u nafs-u-hu sa-ya-staqbilu-nā*
 the-director-NOM self-NOM-3SG.GEN will-3SG.M-welcome-us
 'The director himself will welcome us.'

²These foreign language examples are based on data in Gast et al. (2007)

(5) Turkish

- a. *Paul ve Maria **kendi**-ler-i-ne hayran*
Paul and Mary self-3PL-GEN-DAT admire
'Paul and Mary admire themselves.'
- b. *müdür-ün **kendi**-si bizim-le konuşacak*
Director-GEN self-3SG.GEN us-with will.talk
'The director himself will talk to us.'

(6) Koyrabora Senni (Mali)

- a. *a mba šelay ŋga-**boŋ***
he was speak 3SG.M.GEN-head
'He was speaking to himself.'
- b. *ni no ma a tee nda-ni-**boŋ***
you FOC IMPF 3SG.OBJ do with-2SG.GEN-head
'You do it yourself.'

1.3 Distributional Data

Before we continue on into an analysis of ERs, it would be beneficial to review some of their distributional facts. It is important to note that these distributional data are *only distributional*. That is to say, the facts and distinctions provided below may be useful, but do not necessarily correlate to specific formal semantic or syntactic properties.

1.3.1 Sentential Position

ERs can be found in many positions in a sentence with the same interpretation. In (7), I demonstrate a subset of the possible positions in which an ER can appear.

(7) Sentential Position

- a. John himself was typing the paper last night.
- b. John was typing the paper himself last night.
- c. John was typing the paper last night himself.
- d. John was himself typing the paper last night.

I will call the ER in (7a) – in which the ER is adjacent to its antecedent – an **Adjacent Emphatic** (AE). Conversely, I will call the ER in (7b) – in which the ER is found immediately after the verb and its complement – a **Post-VP Emphatic** (PVE).³ As for (7c) and (7d), seem to be more marked ER usages whose string position may be the result of other syntactic mechanisms.⁴

1.3.2 Verb Type and Position Availability

PVEs seem to be sensitive to the syntax in a way that other ERs are not. Specifically, PVEs seem to be ungrammatical when following an argument promoting verb⁵, such as a passive, ergative⁶, or unaccusative. Below are some examples which demonstrate that PVEs following an argument promoting verb are ungrammatical.⁷

(8) Transitive

- a. ✓The doctor himself made the discovery.
- b. ✓The doctor made the discovery himself.

³This name should not be interpreted as a commitment to a syntactic story where the ER's position is necessarily related to the VP. It should only mean "to right of the verb's complement(s)."

⁴It seems clear to me that (7c) and (7d) are a little more stilted than others. However, instances similar to them are still well attested both in spoken discourse and in writing.

⁵The term "argument promoting verb" refers to a class of verbs in which what seems to be an underlying object is "promoted" to the subject position.

⁶This is a term used for unaccusative verbs that have a causative alternation, as in *The sun melted the ice* and *The ice melted*. (Keyser and Roeper 1984)

⁷These examples can be rescued from their apparent ungrammaticality under certain conditions, as we will see later in Section 5.2.3.

- (9) Underspecified for Object
 a. ✓She **herself** was drinking.
 b. ✓She was drinking **herself**.
- (10) Passive
 a. ✓The beef **itself** was burned.
 b. *The beef was burned **itself**.
- (11) Ergative
 a. ✓The radio **itself** broke.
 b. *The radio broke **itself**.
- (12) Unaccusative
 a. ✓John **himself** arrived.
 b. *John arrived **himself**.

1.3.3 Prosody

A handful of researchers have pointed out that ERs bear some kind of sentential-level stress/focus. Creswell (2002) gives the sentences in (13) as evidence of this requirement.

- (13) a. #By the way, **the pope himself** is invited for DINNER tonight, so you'd better wear a tie and maybe consider shaving for once.
 b. By the way, **the pope HIMSELF** is invited for dinner tonight, so you'd better wear a tie and maybe consider shaving for once.

This observation has been made more or less intuitively and without any hard evidence, while at the same time playing a non-trivial role in the theories of those who have mentioned it. (Creswell 2002, Eckardt 2001, Hole 2002) Though this claim has been made without scientific basis, it does seem to be true, intuitively. I will return to this and explore it fully later on.

1.3.4 Interpretations

The literature on ERs is inconsistent with regard to how many interpretations are available to ERs. Many (including Siemund 2000, Hole 2002, König and Siemund 2005, Gast 2006) have employed an additive/inclusive versus exclusive distinction, yielding a classification as below.

- (14) a. Additive/Inclusive:
Though Liz's boss can speak German fluently, Liz is able to speak little German, herself.
- b. Exclusive:
Despite her lack of German skills, Liz ran the business meeting herself, which is to say without her boss's help.

Others have further dissected what ERs can mean in context. For example, Eckardt (2001) reviews five possible interpretations, summarized below.

- (15) Archie ate a hoagie **himself**.
- a. In addition to his friends who ate hoagies, Archie ate one too. (*Additive*)
- b. Archie did it without anyone's help (*Assistive-Exclusive*)
- c. Archie didn't delegate it to someone else. (*Delegative-Exclusive*)
- d. It is only logical for one to eat a hoagie without help. (*Logically-Exclusive*)
- e. It wasn't Archie's father who ate a hoagie. (*Corrective-Exclusive*)

Though I do not deny the existence of these readings, the analysis pursued here will subdivide ERs types differently; and the precise interpretations described in (15) are yielded from those two with the help of context and world knowledge.⁸

⁸It has been argued that the additive versus exclusive distinction may arise from scope of the ER with respect to the event variable binder. (Gast 2006)

Such a theory would, in some places, make predictions that are different from those that are made by the theory put forth here. Take, for example, the idea of under what conditions the additive/inclusive reading is available. While Gast would predict this to be impossible with the ER below the event variable binder, the theory promoted here would not predict its relative

position to the event variable to be relevant.

While noting the need for further investigation as to the syntactic/semantic/pragmatic factors that yield the interpretations that exist in the data, I set these issues aside for future research and continue to present a novel analysis

SECTION 2

Two Readings

The different ways of subcategorizing ERs presented above — *exclusive* vs. *additive* as in (14), and the five-way distinction as in (15) — seem to ultimately fail, as the distinctions made do not seem to be reflected linguistically in a consistent fashion. Before I give evidence for this, I introduce the two readings that I will show to be crucially different.

2.1 What Are the Two Readings?

My data show that there are two fundamentally distinct readings. The first is an adnominal¹ one that seems to emphasize the identity of the associate DP, contrasting it with other entities. I term the ERs with this interpretation ^{dp}ERs. The second reading is an adverbial reading, which is closely related to the *assistive-exclusive* reading in (15). It means something along the lines of “the agent of this clause is really the agent.” I term the ERs with this interpretation ^{vp}ERs.

Other independent research also points to the ^{vp}ER’s reading as being necessarily distinct from all the others in (15). Many people have pointed this out; either by

¹The term adnominal suggests surface ‘adjacency’ between the ER and its associate DP, and, though this is sometimes true, all that is required is adjacency *at some derivational level*.

directly saying so, or indirectly by analyzing only the properties assistive-exclusive reading (Moravcsik 1972, Browning 1993, Eckardt 2001, Hole 2002, Bergeton 2004, Tavano 2006).

The two readings can be distinguished from one another with different paraphrases. ^{dp}ERs can be paraphrased, “X (not Y)”²; and ^{vp}ERs can loosely be paraphrased “without help.”

(16) Paraphrasing a ^{dp}ER
 John ^{dp}himself did it.
 ≈ **John** (not his mother) did it.

(17) Paraphrasing a ^{vp}ER
 John did it ^{vp}himself.
 ≈ John did it without any help.²

Though it may seem that ^{vp}ERs have a meaning similar to *by Nself*, the properties of *by Nself* are distinct from those of ^{vp}ERs (see Levin and Rappaport Hovav 1995). First of all, *by Nself* is ambiguous between “alone” and “without outside help.”

(18) a. John went to the movies by himself (≈alone).
 b. John made dinner by himself (≈without outside help)

Secondly the *by Nself* construction has a wider syntactic distribution than ERs.

(19) a. John is by himself (≈alone).
 b. *John is ^{vp}himself/^{dp}himself.

(20) a. The book fell down by itself (≈without outside help).
 b. *The book fell down ^{vp}itself (≈without outside help).

²This paraphrase turns out to be a little too restrictive, as there are certain contexts where it is possible that the agent did get help. However, for the large majority of cases, the strong implication of an ^{vp}ER is that the agent was the sole agent. This will be discussed in Section 3.1.1.

It seems that the *by Nself* in (20) means something like “there was no external causer.” This is crucially not the analysis of ^{vp}ERs I pursue, which instead deals with agentivity. That said, assessing the differences between ERs and *by Nself* is outside of the scope of this paper; it is only important that *by Nself* is not the same as an ER.

2.1.1 Evidence for Two Readings

First of all, there are minimally two ways to deny a sentence with an ER, each one corresponding to one of the two ERs.

- (21) a. Denying a ^{dp}ER
 A: John ^{dp}himself fixed the car.
 B: No, **John’s mother** did.
- b. Denying a ^{vp}ER
 A: John fixed the car ^{vp}himself.³
 B: No, John did it **with Mary**.

Furthermore, there is cross-linguistic evidence that these are the two crucial readings for ERs. If there were five distinct readings of ERs, we might expect some language to have five (or at least more than two) different words, each expressing a different ER; however, this is not the case. The table below, summarizing ER/reflexive patterns in 72 languages, comes from Gast and Siemund (2006) and has been adapted to use my ^{dp}ER/^{vp}ER terminology.

³This sentence is actually ambiguous between a ^{dp}ER or a ^{vp}ER usage; we will return to this later, but remember that the ^{vp}ER usage means something like “without any help.”

(22)	^{dp} ER	^{vp} ER	REFL	N in sample	Examples
	A	A	A	30	English, Mandarin
	A	A	B	25	German, Tzotzil
	A	B	B	10	Japanese, Tarascan
	A	B	C	4	Korean, Koyra Chiini
	A	B	A	3	Malagasy, Amharic

This table shows a few things. First, the connection between ERs and reflexive pronouns is strong – about 60% of the languages surveyed use a reflexive pronoun for at least one ER. Second, over 75% of the languages surveyed use the same word for both ERs. Third, of the languages where the ^{dp}ER form is distinct from the ^{vp}ER form, there was still a maximum of two forms.⁴ Most importantly, even if there are two forms for ERs, one is always a ^{dp}ER and the other is always a ^{vp}ER’s reading. This seems to prove that the two readings I define as ^{dp}ER and ^{vp}ER are the only two meanings for ERs that are stored separately in the lexicon.

A Japanese example of a ^{dp}ER having a form distinct from a ^{vp}ER is given below. Note that the case marking occurs outside of the [DP ^{dp}ER] constituent.

- (23) [*Robotto jishin*] -ga *jibun-de jibun-o tsukuri-naoshi-ta*.
 Robot ^{dp}ER NOM ^{vp}ER-INSTR REFL-ACC built-re-PAST
 ‘The robot itself rebuilt itself (by) itself.’

This seems to say something about the constituency of ^{dp}ERs and their antecedents; we will return to this later.

⁴Some languages have more than one word for a given reading depending on morphosyntactic feature(s). In Japanese and Chinese, ^{dp}ERs have forms that are distinguished only by an animacy feature: inanimates ‘*jitai*’, ‘*běnshēn*’ and animates ‘*jishin*’, ‘*ziji*’. However, these other words are more or less synonyms and are semantically no different, outside of the relevant feature(s). (Gast et al. 2007, Hole 2008)

2.2 Sortal Restrictions

The felicity of ERs is constrained in a number of ways, and these constraints will inform our theory on their formal semantics. Furthermore, the constraints only apply to either ^{dp}ER or ^{vp}ER, but not both – thereby providing further strong evidence that there are exactly two distinct kinds of ERs.⁵

2.2.1 Position of ERs

^{vp}ERs are greatly limited in their sentential position, in a way that ^{dp}ERs are not. ^{dp}ERs may appear adnominally to their associate DP (24a), after or between auxiliaries (24b-c), or after the clausal object(s) (24d). However, ^{vp}ERs may only appear after the clausal object(s) (the PVE position). In this way, the readings associated with ^{dp}ERs and ^{vp}ER are only available

Consider the following situation. Mary knows that Spike smokes a lot and that his mom barely smokes at all. Mary sees an empty pack of cigarettes. She's not sure who smoked the pack, but she knows it couldn't have been entirely his mom. Imagine Mary is the speaker in the sentences in (24).

- (24) *His mom couldn't have smoked the whole pack, but...*
- a. ✓Spike ^{dp}himself could have smoked the whole pack.
 - b. ✓Spike could ^{dp}himself have smoked the whole pack.
 - c. ✓Spike could have ^{dp}himself smoked the whole pack.
 - d. ✓Spike could have smoked the whole pack ^{dp}himself.

All of the sentences are compatible in this context. This suggests that the meaning

⁵These sortal restrictions are not limited to English – in fact some of the original intuitions come from languages like German, Danish, etc.

of “X (not Y)” that is associated with ^dP ERs is available for an ER in any position.

Now consider a different situation. Spike smokes a lot, and Mary knows it. Mary sees an empty pack of cigarettes and wonders how many people it took to finish it. She then remembers that Spike smokes a lot. Imagine Mary is the speaker in (25).

- (25) *Any boy would have needed help...*
- a. #No boy ^vP himself could have smoked the whole pack.
 - b. #No boy could ^vP himself have smoked the whole pack.
 - c. #No boy could have ^vP himself smoked the whole pack.
 - d. ✓No boy could have smoked the whole pack ^vP himself.

Only (25d) is a felicitous statement in this context. This implies that the meaning “without any help” that is associated with ^vP ERs is restricted to the PVE position.

Thus, if an ER is not in a PVE position, it is certainly a ^dP ER (24a-c). However, if an ER is in PVE position, it may either be ^dP ER (24d) or ^vP ER (25d). Thus, (24d) should mean something different from (25d); paraphrases are given in (26).

- (26)
- a. Spike could have smoked the whole pack ^dP himself.
≈ His dad could have, his mom could have, and **Spike** could have too.
 - b. Spike could have smoked the whole pack ^vP himself.
≈ Spike wouldn’t have needed anyone’s help – he could have on his own.

Similarly, “Spike could have smoked the whole pack himself” is deniable in two ways; first in a way corresponding to a ^dP ER’s reading (27a), and second in a way corresponding to a ^vP ER’s reading (27b).

- (27)
- a. **A:** Spike could have smoked the whole pack ^dP himself.
B: No, only **Spike’s mother or father** could have smoked the whole pack.
 - b. **A:** Spike could have smoked the whole pack ^vP himself.
B: No, Spike would have **needed help** to smoke the whole pack.

As we will see in Section 4, this constraint on the position of ^vPER will be borne out from its syntactic licensing being entirely distinct from that of ^dPERs.

2.2.2 Restrictions on DP Type for ^dPERs

2.2.2.1 Shared World Knowledge

As I mentioned above ^dPERs contrast the associate DP with other entities. In order to generate a possible contrast for an entity X, one must have some world-knowledge about X. For this reason, ^dPERs are only acceptable when there is enough information shared by interlocutors, and as such are generally infelicitous in “out-of-the-blue” contexts.

- (28) A: What did you do yesterday?
B: I (^{#d}myself) spoke with Bobby (^{#d}himself) about Star Wars (^{#d}itself).

Such usage of an ER is improved when there are easily generated contrastive alternatives to the ER’s associate DP.

- (29) A: What did you do yesterday?
B: I spoke with George Lucas ^dhimself about Star Wars.

Assuming that A knows who George Lucas is and that there are many other (more likely, and thus easily accessible) alternatives with whom one would speak about Star Wars, B’s usage of a ^dPER is both licit and appropriate.

A distinction of the type comparing (28) and (29) has long been recognized, and has been attributed to a restriction on surprisal by some (e.g. Edmondson and Plank 1978). However, Eckardt (2001) correctly points out that it is easy to find ^dPERs

when there is no surprise necessary, as in (30).

- (30) A: What happened at Paula's party?
B: Her brother sang a song, and Paula ^{dp}herself got a present.

Even if the party were for Paula's birthday and her receiving a present were expected, (30) is well-formed thanks to easily an accessible contrast in her brother. Bergeton (2004) explicitly defines a constraint that explains this data pattern – his Contrastiveness Condition, given in (31). The fact that 'surprise' facilitates interpretation for (29) is explicable in that it is easy to create a contrastive alternate to an entity when that entity is surprising; explicitly, in a surprising situation, the more expected entity/entities should be easily accessible as contrasts.

- (31) Contrastiveness Condition
A nominal expression DP [is only compatible with a ^{dp}ER] if it can be contrasted with other expressions in the context in which it is found.

To see this constraint's effects, compare (30), where there is a clear easily-accessible contrast, to (32), where that easily-accessible contrast is removed from the context.

- (32) A: What happened at Paula's party?
B: #Paula ^{dp}herself got a present.

Without the accessible contrast of her brother, which was available in (30), the response is not well-formed, no matter the sentential position of the ^{dp}ER.⁶ This should be taken as evidence that ^{dp}ERs pattern together with regard to Contrastiveness regardless of their sentential position. On the other hand, (33) requires no knowledge

⁶Only the ^{dp}ER interpretation would be available in this sentence, for reasons that will become clear in Section 2.2.3.

of possible contrasting alternates to Paula.

- (33) A: What happened at Paula's party?
B: Paula ate the entire cake ^{vp}herself.

Despite the restriction on ^{dp}ERs in contexts without good contrasting entities, there is no such restriction on ^{vp}ERs. Even Edmondson and Plank (1978), the strongest proponent of a 'surprise' restriction, do not impose this restriction on ^{vp}ERs. Moreover, no knowledge of the plausibility of Paula eating the entire cake is required either – Paula may eat entire cakes often or she may hardly eat cake; both situations are compatible with the usage of the ^{vp}ER.⁷ This demonstrates that ^{vp}ERs are not sensitive to context in the way that ^{dp}ERs are.

2.2.2.2 Referential Properties of the Associate DP

The second type of sortal restriction I discuss is also limited to ^{dp}ERs. A DP must be specific to be compatible with ^{dp}ER usage. The data below show cases of ^{dp}ERs failing to be felicitous.

- (34) ^{dp}ERs and Non-specific DPs
- a. #Which girl ^{dp}herself solved the problem?
 - b. #Someone ^{dp}themselves solved the problem.
 - c. #A boy ^{dp}himself solved the problem.
 - d. #No student ^{dp}themselves solved the problem.

To show that it is non-specificity that is the crucial feature, compare the non-specific DP data to the data below. We can see well-formed examples with a [+specific, +definite] DP (35a) and a [+specific, –definite] DP (35b). There is also a malformed

⁷To exemplify the scenario where she eats entire cakes often, consider the sentence “Paula ate the entire cake herself... again.”

example with a [-specific, +definite] DP given in (35c).⁸

(35) Specificity, not definiteness

- a. ✓ Noam ^{dp}himself solved the problem.
- b. ✓ All Cretans lie. A Cretan ^{dp}himself told me that. Edmondson&Plank (1978)
- c. # We wanted to go to the doctor⁹ ^{dp}himself, but we didn't know any.
Edmondson&Plank (1978)

Furthermore, ^{dp}ERs are not well-formed unless their associate DP is referential. Non-referential QPs are incompatible with ^{dp}ERs, unlike a referential QP, as in (37).

(36) ^{dp}ERs and non-referential QPs

- a. *Many boys ^{dp}themselves solved the problem.
- b. *Each boy ^{dp}himself solved the problem.
- c. *Three boys ^{dp}themselves solved the problem.
- d. *Few boys ^{dp}themselves solved the problem.

(37) ^{dp}ERs and quantified definite DPs

- a. ✓ These three boys ^{dp}themselves solved the problem.
- b. ✓ (There are few boys in the class and...) The few boys ^{dp}themselves solved the problem.

Given this, one might wonder if what matters is that the antecedents in (36) are [Quantifier NP] (without any determiner/demonstrative), and that those in (37) are [Determiner Quantifier NP] (including a determiner/demonstrative). This must not be the case as kind DPs – which can be expressed with an overt determiner or as a bare-plural – are compatible with ^{dp}ERs.

⁸There are many examples of indefinites being infelicitous with ^{dp}ERs, but these tend to be the result of our previous restriction – it is more difficult to generate a plausible contrast for an indefinite. Though not impossible, as (35b) demonstrates.

⁹Here 'the doctor' is not considered specific. Consider "I went to the doctor" – this sentence can be uttered even if there is no doctor in the common ground, unlike "The doctor arrived."

- (38) ^{dp}ERs and kind DPs
- a. ✓The dodo bird ^{dp}itself (and not its descendants) is extinct.
 - b. ✓Boys’ mothers are made of sugar and spice and everything nice; but boys ^{dp}themselves are made of snips and snails and puppy-dog tails.

These data about QPs and kinds are consistent with Siemund (2000)’s Unique Identifiability Condition, modified for our framework, presented below.

- (39) Unique Identifiability Condition
 A^{dp}ER’s associate DP “must denote a uniquely identifiable referent where referent can be understood in the broadest sense of of the word”

I take “uniquely identifiable” as excluding non-specific and non-referential DPs. Also, I believe that being a “referent” means that the DP must denote an individual, thereby ruling out the sentences in (36). The only modification necessary for this constraint is that, as we will see later, it must also apply to ^{dp}ERs that are not in adnominal positions.

Furthermore, this constraint does not make any reference to ^{vp}ERs. Thus we predict that, in a clause with a non-specific/non-referential subject, a PVE¹⁰ will be uninterpretable with a ^{dp}ER’s reading but possibly compatible with a ^{vp}ER interpretation, as we see in (40) and (41).

- (40) Some boys solved the problem themselves.
- a. #It wasn’t some girls who solved the problem, it was some boys. (^{dp}ER)
 - b. ✓Without help from the teacher, some boys solved the problem. (^{vp}ER)
- (41)
- a. Which boy solved the problem ^{vp}himself?
 - b. Someone solved the problem ^{vp}themselves/^{vp}himself.
 - c. {A/Each} boy solved the problem ^{vp}himself.
 - d. {Many/Some/Three/Few} boys solved the problem ^{vp}themselves.

¹⁰Post-VP ER; an ER appearing after clausal objects. See also Section 1.3.1 on page 4.

This should be taken as evidence that ^{dp}ER interpretations pattern together in terms of Unique Identifiability, no matter their sentential position.

2.2.3 Semantic Restrictions on Verb Type for ^{vp}ERs

As for ^{vp}ERs, they cannot be felicitously produced with certain classes of verbs. This data supports the theory that ^{vp}ERs semantically modify the predicate, rather than having an underlying direct semantic relationship with a DP. First, as evidence of this, stative verbs are incompatible with ^{vp}ERs.

- (42) This time, Grandpa heard it himself.
 a. ✓I heard it last time, and, this time, Grandpa heard it. (^{dp}ER)
 b. #This time, Grandpa heard it without his hearing aid's help. (^{vp}ER)

A ^{dp}ER interpretation is compatible with a stative verb (42a), whereas a ^{vp}ER interpretation as in (42b) is out.

2.2.3.1 Agentive Subject

Hole (2002) and Tavano (2006) have noticed this pattern, and have offered different solutions. Hole argues that ^{vp}ERs require a dynamic/agentive verb, while Tavano argues they require a durative verb. The relevant data is replicated below.

- (43) Hole's Agentivity Restriction
 a. ✓The people divide the country ^{vp}themselves. *Dynamic Verb*
 b. #The mountains divide the country ^{vp}themselves. *Stative Verb*
- (44) Tavano's Durative Restriction
 a. ✓John (always) buys cars ^{vp}himself. *Activity Verb*
 b. ✓John built the house ^{vp}himself. *Accomplishment Verb*
 c. #John lives ^{vp}himself. *Stative Verb*
 d. #John won the race ^{vp}himself. *Achievement Verb*

Though I do not believe Hole has captured the entire story, I favor his analysis. Hole argues that the felicity of an ^vPER is tied to the agent licenser (e.g. *Voice* in Kratzer (1996)'s terms), the presence of which should also change a stative verb (43b) into a dynamic one (43a).

A counterexample to Tavano's durative restriction can be found with any number of achievement verbs that license agentive subjects, exemplified below.

(45) ✓Phill broke the door ^vPhimself. *Achievement Verb*

Furthermore, verbs of a durative nature that are not agentive are not compatible with ^vPERs. The data below are in the present progressive to indicate their durative property.

(46) a. #Ronan is living the dream ^vPhimself. *Experiencer Subject*
 b. #Amalia is growing up ^vPherself. *Patient/Theme Subject*

The kind of data found in (45) and (46) support an analysis based on agentivity. Thus I propose the Agentivity Condition.¹¹

(47) Agentivity Condition
 The subject of a clause with a ^vPER must be an Agent.

2.2.3.2 Volitional Subject

As we will see explicitly in Section 3.1.2, Hole links ^vPER to the external argument licenser. While I do not dispute this outright, it fails to capture the distinction between verbs with non-volitional external arguments (causers) and verbs with voli-

¹¹I am unsure of whether 'John' is not an agent in (44d). That said, why exactly (44d) is bad may be unclear, but the fact that (45) is good seems to disprove Tavano's argument.

tional agentive subjects. In that vein, I argue that the verb in question must license not only an agentive subject but a volitional agentive subject.¹²

In fact, even a sentence like (45) can be put into a context in which ‘Phill’ is not volitional and the ^{vp}ER is marginalized at best, if not outright ungrammatical.

(48) # (After tripping and falling into the door,) Phill broke the door himself.

Furthermore, when it is pragmatically impossible for the subject to be volitional, the use of a ^{vp}ER is more clearly infelicitous.¹³

- (49) a. Non-volitional causative
 #Guess which medicine cured me ^{vp}itself.
 b. Volitional agent
 Guess which nurse cured me ^{vp}herself.

(50) Volitionality Condition
 The subject of a clause containing a ^{vp}ER must be volitional.

Even though ^{vp}ERs seem to be restricted to subjects with volitional agentive theta roles, we find no similar theta restrictions on ^{dp}ERs’ associate DPs – even in the complete absence of an agent.

- | | | | |
|------|----|--|----------------------|
| (51) | a. | Emeril ^{dp} himself roasted these peppers. | <i>Agent</i> |
| | b. | The grenade ^{dp} itself broke the window. | <i>Cause</i> |
| | c. | You can see your phone’s bill with the phone ^{dp} itself. | <i>Instrument</i> |
| | d. | Rachel flavored the pasta ^{dp} itself with salt. | <i>Patient/Theme</i> |
| | e. | I bought the director ^{dp} herself a beer. | <i>Benefactive</i> |
| | f. | Ronan ^{dp} himself is living the dream. | <i>Experiencer</i> |

¹²There seems to be independent evidence that volitional agents are only licensed by predicates whose verbal structure is inherently larger than that of a predicate with a non-volitional subject. (p.c. Hilda Koopman)

¹³Indefinite subjects are used to avoid the possibility of a ^{dp}ER’s reading.

From these data, we can conclude that ^{vp}ERs (unlike ^{dp}ERs) are restricted to clauses in which the verb licenses a volitional agent. Importantly, though the restrictions on verb type manifest in the thematic role of the subject, the restrictions themselves are actually on the verb.¹⁴ In this way ^{dp}ERs are restricted in properties of their associate DP, and ^{vp}ERs are restricted in the properties of their associate clause.

The table in (52) summarizes some of the findings of this section, showing clearly that an ER’s properties correlates directly to its meaning.

(52) **Properties of ^{dp}ERs and ^{vp}ERs**

	ER can go in many positions	ER means “ <u>X</u> (not Y)”	DP needs salient contrast(s)	DP must be specific	ER must follow the predicate	ER means “without help”	DP is agentive	DP is volitional
^{dp} ER	✓	✓	✓	✓				
^{vp} ER					✓	✓	✓	✓

¹⁴The technical implementation showing this will be given in Section 4.3.

SECTION 3

Semantic Identity of the ER

3.1 Analyses of Non-Reflexive Intensifiers

In the literature related to ERs, semantic analyses have largely been focused on constructions in German, as well as in languages such as Danish, Dutch, and Finnish. Unlike the data in Section 1.2, these languages do not use a reflexive element for the function of an ER.¹ Instead, they use a different functional element.² This non-reflexive emphatic has traditionally been called an intensifier; however, for consistency with the rest of this paper, I will call them non-reflexive ERs.³

¹See Gast and Siemund (2006) for a detailed pattern analysis of the languages' words for the ^{dp}ER, ^{vp}ER and reflexive pronoun. As we saw in Section 2.1.1, about 40% of the languages in their sample are like German and do not use a reflexive pronoun for either ER, and the class of languages that behaves this way are typologically very diverse.

²This functional element (e.g. *selv/zelf/itse/selbst*) can also act as a scalar focus particle for DPs (at least in these four languages) but exhibits vastly different properties from the ER usage – notably, the focus particle usage is left-adjoined to the DP (e.g. Dutch '*selv bilen*'), whereas the ER usage is right-adjoined (e.g. Dutch '*bilen selv*'). For a detailed discussion, see Bergeton (2004).

³I do so despite the contradiction in “non-reflexive emphatic reflexive.”

- | | |
|--|--|
| <p>(53) <u>Reflexive pronouns</u></p> <p>a. <u>Danish</u>
 <i>Max vasker sig(selv)</i>
 Max washes self</p> <p>b. <u>Dutch</u>
 <i>Max wast zich(zelf)</i>
 Max washes self</p> <p>c. <u>Finnish</u>
 <i>Max pesee itse-nsä</i>
 Max washes self-3SG.POSS</p> <p>d. <u>German</u>
 <i>Max wäscht sich</i>
 Max washes self</p> | <p>(54) <u>Non-reflexive ERs</u></p> <p>a. <u>Danish</u>
 <i>Max vasker bil-en selv</i>
 Max washes car-the itself/himself</p> <p>b. <u>Dutch</u>
 <i>Max wast de auto zelf</i>
 Max washes the car itself/himself</p> <p>c. <u>Finnish</u>
 <i>Max pesee auto itse</i>
 Max washes car itself/himself</p> <p>d. <u>German</u>
 <i>Max wäscht das Auto selbst</i>
 Max washes the car itself/himself</p> |
|--|--|

While the non-reflexive ERs in these languages exhibit many of the same properties as ERs of the English type, they will differ in certain respects.⁴ Notably, they are not bound pronouns marked for number or gender. Among other effects, this allows for ambiguities that are not always seen in English-type languages. That is, in (54), a non-reflexive ER can be interpreted as either a ^{dp}ER (*itself*) or a ^{vp}ER (*himself*). Moreover, it seems that the non-reflexive ER word's syntactic category differs from the reflexive ER word; non-reflexive ERs act more like degree or focus particles than they act like DPs that bear phi-features. These differences (especially the latter) will play a role in determining the logical form of ERs. Setting these differences aside for now, analyses for both non-reflexive ^{dp}ERs and non-reflexive ^{vp}ERs employ a one-place identity function, ID, whose output is identical to its input.

$$(55) \quad \text{ID}(x) = x$$

⁴Indeed, much of the research I have cited has been on non-reflexive intensifiers, and the findings of that research has been applicable to languages that use ERs and those that do not.

In this section I will demonstrate how this kinds of vacuous function yields the properties of non-reflexive ERs.

3.1.1 Non-reflexive ^{dp}ERs and the ID Function

In Eckardt (2001)’s analysis, the non-reflexive ^{dp}ER is the phonological form of ID that takes a DP argument of type $\langle \mathbf{e} \rangle$. Take, for example, the German phrase “*das Auto selbst*.” In it, *selbst* denotes ID, its argument is *das Auto*, and its output is *das Auto*. A positive result of this analysis is that the use of a ^{dp}ER does not impact the truth conditions of the sentence. However, if a non-reflexive ER is simply an identity function, it might seem difficult to explain why we find sortal restrictions like those in Section 2.2.2. Perhaps unexpectedly, this analysis explains just that.

Eckardt notes that *selbst* seems to necessarily receive sentence-level stress. She takes this stress to be indicative of contrastive focus marking, meaning a set of focus alternatives is evoked, as proposed in Rooth (1996). These focus alternatives to $ID(x)$ will, like $ID(x)$, be of the form $f(x)$ where f is a function.⁵ Going back to our example, *das Auto selbst*, we derive the meaning as follows.

- (56)
- a. $\llbracket \text{das Auto} \rrbracket = \mathbf{the\ car}$
 - b. $\llbracket \text{selbst} \rrbracket = \lambda x_e. ID(x)$
 - c. $\llbracket \text{selbst}_{focus} \rrbracket = \lambda x_e. ID(x)$, where focus alternatives to ID are functions (e.g. f)
 - d. $\llbracket \text{das Auto} \text{selbst} \rrbracket = ID(\llbracket \text{das Auto} \rrbracket) = ID(\mathbf{the\ car}) = \mathbf{the\ car}$
 - e. $\llbracket \text{das Auto} \text{selbst}_{focus} \rrbracket = \mathbf{the\ car}$, where focus alternatives to ID are functions of the form $f(\mathbf{the\ car})$

⁵There is no theoretical limit on what kind of function f can be, though it seems focus alternatives find a way of restricting themselves. Take for example, “The book is RED.” Any property should be a good focus alternative to *red*, but in reality, the number of optimal focus alternatives is quite limited – in this case, likely to colors.

That is to say, focus alternatives to ID(**the car**) may be WINDSHIELD-OF(**the car**) or ENGINE-OF(**the car**). This explains the fact that “I washed the car itself” may mean something like “I washed **the car**, not just its windshield.”

This predicts that ERs must always be marked with contrastive focus, otherwise no meaning will be contributed; this turns out to be true (at least for English), as I find in Section 5. Furthermore, the fact that ERs must be contrastively focused should derive the two constraints of Section 2.2.2, repeated below as (57) and (58).

(57) Contrastiveness Condition

A nominal expression DP [is only compatible with a ^{dp}ER] if it can be contrasted with other expressions in the context in which it is found.

(58) Unique Identifiability Condition

A ^{dp}ER’s associate DP “must denote a uniquely identifiable referent where referent can be understood in the broadest sense of of the word” (if it denotes an individual at all.⁶)

The Contrastiveness Condition can be reanalyzed as result of the need for a focus alternative set. If there is no (non-empty) focus alternative set, it would be meaningless to focus ID. Therefore, it must not be difficult to populate the focus alternative set; in other words, whatever restricts focus alternative sets in the first place (as mentioned in footnote 5) must not restrict the set to being empty.

The Unique Identifiability Condition can also be reanalyzed now. It is a direct result of ID’s type restrictions: the ^{dp}ER’s associate DP must denote an individual of type ⟨e⟩. By militating that arguments of ERs are of ⟨e⟩ restricts them to

⁶DPs that aren’t “uniquely identifiable” can be marked with contrastive focus, as in “*John likes SOMEone.*” However, in this case, the DP does not denote a specific individual and what is focused seems to be the (positive polarity of the) existence of an individual. This does not violate the Unique Identifiability Condition, since a non-individual-denoting DP is being contrastively focused the condition doesn’t apply at all.

being individual-denoting (and not set-referential) DPs/QPs, and to being specific individuals (and not nonspecific DPs). This grammaticality patterns of the table below.

(59) ^{dp}ERs are only compatible with DPs of type ⟨e⟩

✓ ^{dp} ER type ⟨e⟩	× ^{dp} ER not type ⟨e⟩
Specific Definites e.g. <i>John, The man</i>	Non-specific Definites e.g. <i>The doctor</i> as in (35c)
Specific Indefinites ⁷ e.g. <i>A certain boy</i>	Non-specific Indefinites e.g. <i>A teenager, Some adults</i>
Individual-denoting QPs e.g. <i>These three girls</i>	Set-referential QPs e.g. <i>3 kids, All women, Everyone</i>
Kinds e.g. <i>Dodo birds themselves</i>	Wh-phrases e.g. <i>Which person</i>

Below I formalize the reanalyses of our restrictions described in the above paragraphs.

(60) Contrastiveness Condition (Revised)

A DP is only compatible with a ^{dp}ER if its focus alternative set is non-empty.

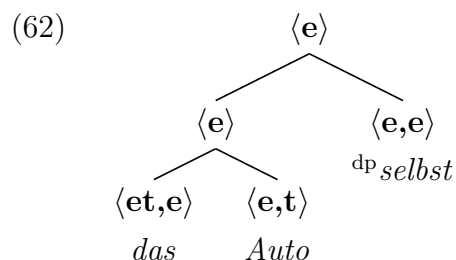
(61) Unique Identifiability Condition (Revised)

A DP must denote an individual of type ⟨e⟩ to be a valid argument of the identity function denoted by ^{dp}ER.

In terms of the compositional semantics of ID, Eckardt supposes that there are four logical forms, depending on sentential position. This seems a bit theoretically heavy, especially given the fact that ^{dp}ERs pattern together with regard to sortal restrictions, no matter where they appear sententially, as we saw in (32) and (40). Thus I argue, as Bergeton (2004) does, that ^{dp}ERs are base-generated adnominally,

⁷See Fodor and Sag (1982) for an argument that specific indefinites pattern semantically with names (which are of type ⟨e⟩).

forming a constituent with the associate DP. Other sentential positions are derived by a form of stranding in the sense of Sportiche (1988).⁸ In this way, *das Auto selbst* is generated as in (62).



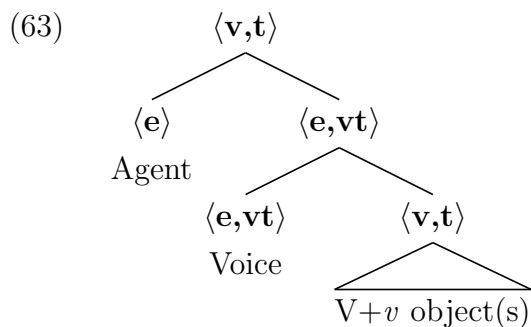
3.1.2 Non-reflexive ^{vp}ERs and the ID Function

Before we go into the analysis of ^{vp}ERs, we need some background information on Kratzer (1996)'s Voice function. This function is semantically independent of the verb and, among other things, provides an Agent for the event.⁹ The Voice head itself is of type $\langle e, vt \rangle$.¹⁰ It combines with the predicate (type $\langle v, t \rangle$) by Event Identification, and forms a constituent of type $\langle e, vt \rangle$, which then takes an individual as the argument of a theta role assigning function, Agent. The implementation of Voice is modeled below.

⁸More on this in Section 4.2.

⁹This Voice head has been claimed to license the thematic role of Agent, license accusative case and be the locus of morphology related to active/passive voice.

¹⁰Type $\langle v \rangle$ is used for situation variables.



As for Hole (2002)’s analysis of the non-reflexive ^vPER, he states that the ^vPER (like Eckardt’s ^{dp}ER) denotes an identity function. Unlike Eckardt’s ID for ^{dp}ERs, which takes a DP argument of type $\langle e \rangle$, his identity function takes Kratzer’s Voice head as its argument. It is for this reason that ^vPERs do not impose restrictions on the DP itself, but rather on its position in the argument structure.

As with the identity function for ^{dp}ERs, this identity function over Voice heads is necessarily focused and elicits focus alternatives.¹¹ Below, (64) gives an informal illustration of what is meant.

- (64) Max washes the car ^vphimself.
- a. Assertion: Max holds the Agent relation to the car-washing event.
 - b. Alternatives: Max holds a non-Agent relation to the car-washing event.

The vagueness of holding a relation with regard to a predicate is useful, as it allows for an alternative to (64) such as “Max gets his car washed at the garage,” wherein Max is some kind of Benefactive DP, and not an Agent. If we had a stricter definition of the alternatives such that Max had to be assisted (as proposed in Eckardt 2001), getting his car washed at the garage might not be possible focus alternative. A formal derivation for the use of a ^vPER is given in (65).¹²

¹¹Otherwise, no meaning would be contributed.

¹²Hole uses the variable r to range over Voice heads. This seems stipulative, and I revise the

- (65) a. $\llbracket \text{Voice} \rrbracket = \lambda x_e \lambda e_v. \text{Agent}(x)(e)$
 b. $\llbracket {}^{\text{vp}}\text{selbst} \rrbracket = \lambda r_{\langle e, vt \rangle}. \text{ID}(r)$
 c. $\llbracket {}^{\text{vp}}\text{selbst}_{\text{foc}} \rrbracket = \lambda r_{\langle e, vt \rangle}. \text{ID}(r)$, where focus alternatives are of the form $f(x)(e)$
 d. $\llbracket \text{Voice } {}^{\text{vp}}\text{selbst}_{\text{foc}} \rrbracket = [\text{ID}(\llbracket \text{Voice} \rrbracket)]_{\text{foc}} = [\text{ID}(\lambda x_e \lambda e_v. \text{Agent}(x)(e))]_{\text{foc}}$
 e. $[\text{ID}(\lambda x_e \lambda e_v. \text{Agent}(x)(e))]_{\text{foc}} = \lambda x_e \lambda e_v. \text{Agent}(x)(e)$, where focus alternatives are of the form $f(x)(e)$

Thus the focus alternatives elicited by a focused $\text{ID}(\text{AGENT}(x)(e))$ may include $\text{JOINED-AGENT}(x)(e)$ ¹³, $\text{BENEFACTIVE}(x)(e)$, etc. However, it is not evident how this formal definition of ^{vp}ERs yields the typical intuition that ^{vp}ERs mean “without help.” Hole states that this is a positive result as we can find examples like the following.

(66) Teddy built this house himself.

In (66), the ^{vp}ER still allows for other people to be involved in the house-building event – what is important is being said in (66) is that Teddy must have been an Agent in the event (though possibly not the sole Agent). This is exactly the kind of case that a theory like Hole’s can predict, and that theories which rely on a “without help” interpretation of ^{vp}ERs can’t.

Given the fact that ^{vp}ERs are inherently tied to a Agent-licensing Voice, we do not expect to find instances of ^{vp}ER with predicates that don’t involve Agents.¹⁴ This accurately predicts sentences like (46), repeated below as (67), to be bad.

(67) a. #Ronan is living the dream ^{vp}himself. *Experiencer Subject*

definition of ^{vp}ER without such a variable in Section 4.3.1.

¹³This means x is one of multiple Agents in e . See Tavano (2006).

¹⁴Non-agentive verbs arguably may still have a Voice head as part of their structure; it might just be one that doesn’t assign an Agent theta role.

b. #Amalia is growing up ^{VP}herself.

Patient/Theme Subject

This data was previously captured by the the sortal restriction we noted on agentivity that we posited in Section 2.2.3. However, now, we can rewrite the Agentivity Condition (68) in more formal terms, as (69), which are equivalent given our assumptions about Agents and Voice.

(68) Agentivity Condition

The subject of a clause with a ^{VP}ER must be an Agent.

(69) Agentivity Condition (Revised)

A predicate modified by an ^{VP}ER must include an Agent-assigning Voice head of type $\langle \mathbf{e}, \mathbf{vt} \rangle$.

Despite largely succeeding, Hole’s analysis has three major syntactic issues: it involves X' adjunction, it fails to capture facts with verb phrase ellipsis, and it cannot explain the Volitionality Condition. However, for the purposes of ^{VP}ER semantics, Hole’s analysis largely succeeds. We will return to remaining issues in Section 4.3.

3.2 Extending the Analyses to Reflexive ERs

The analyses presented by Eckardt and Hole seem to be rather cohesive. However, there are two problems with extending their analyses to encompass the cross-linguistic phenomena. First, in languages such as English, Japanese, Chinese, Arabic, and many others, ERs are represented by a reflexive pronoun. Reflecting on this fact, at least a naïve view would consider it strange for a (reflexive) pronoun to act as a non-argument adjunct – yet this is exactly what an analysis like those above would seem to argue for. They do so in spite of the fact that, in non-ER usages, these

elements act as arguments – not functions.

Second, in these languages, the reflexive pronoun in question is subject to Binding Conditions – again unlike a non-reflexive ER. It would seem reckless to argue that, in just the ER usage, Binding Conditions do not apply, given an example like (70) where Principal A seems responsible for the ungrammaticality.

(70) *Sharon_i did it yourself_j.

These two problems lead me to argue that there must be a separate analysis for languages of this type.¹⁵

As such, I argue for a new description of the internal structure of ERs.¹⁶ Specifically, I argue that reflexive ER languages use an ID function different from the one found in non-reflexive ER languages: one that is syntactically inherently reflexive and may be phonologically null.

First, just as we find variation across languages as to which syntactic heads are overtly expressed and which are not, I argue that in a language like English, the ID is silent. That is to say, I argue for the structure of “the car itself” to be of the following form, where “Ø” refers to the phonological silence of the ID head.

(71) [DP [DP the car] [ER [ID Ø] itself]]

Next, and more radically, as I argue that the reflexive pronouns are arguments

¹⁵Recall that languages which have at least one ER that uses the same morpheme(s) as the reflexive pronoun account for about 60% of the languages surveyed by Gast and Siemund (2006).

¹⁶Tavano (2006) has noted the problem of ERs being reflexive pronouns that are non-argument adjuncts, as well. However, her analysis seems to fail to capture the patterns of ER (in)felicity, and it relies on a Reinhart and Reuland (1996)-like focus logophor analysis of ERs, despite the lack of a possible pronominal alternate for the reflexive word (generally a hallmark of Reinhart and Reuland’s logophors). Thus I will not pursue an analysis like hers.

of the ID function in ER structures. Since (i) the reflexive pronouns depend on the presence of a ER, (ii) an ER contains an ID function, and (iii) the argument structure of this function has been more or less entirely stipulated, I modify the ID function to accommodate reflexive ERs by making it a two-place predicate in only a syntactic sense. One might wonder what it would mean to be a two-place predicate in the syntax and a one-place predicate in the semantics. There is a cross-linguistically well-attested class of verbs that fits just that description: inherent reflexives.

Inherent reflexive verbs are like those in (72) which necessarily take a reflexive argument and nothing else. Arguably, the reflexive argument contributes no reflexive meaning; in fact, Büring (2005) calls these ‘semantically intransitive.’

- (72) behave oneself; better oneself; busy oneself; collect oneself; compose oneself;
 conduct oneself; enjoy oneself; exert oneself; fancy oneself; perjure oneself;
 pride oneself; resign oneself; sun oneself Levin (1993)

In the same way, I argue that the ID function takes a reflexive argument that serves only as a Φ -feature holder (as with expletives).¹⁷ Thus ID’s two syntactic arguments are (i) a reflexive pronoun and (ii) a DP or Voice argument for ^{dp}ERs and ^{vp}ERs, respectively.¹⁸ However, the number and type of **semantic** arguments need not change from a non-reflexive ER language to a reflexive ER language.

Thus, the benefit of our “inherently reflexive ID” analysis is that it allows for the

¹⁷Another example of reflexives acting as a dummy argument can be found in unergative resultative “fake reflexive” constructions: “*John shouted himself hoarse*” (cf. unaccusative resultative constructions: “*The vase broke (#itself) into pieces*”). (Simpson 1983, Hoekstra 1988, Hovav and Levin 2001, *inter alia*)

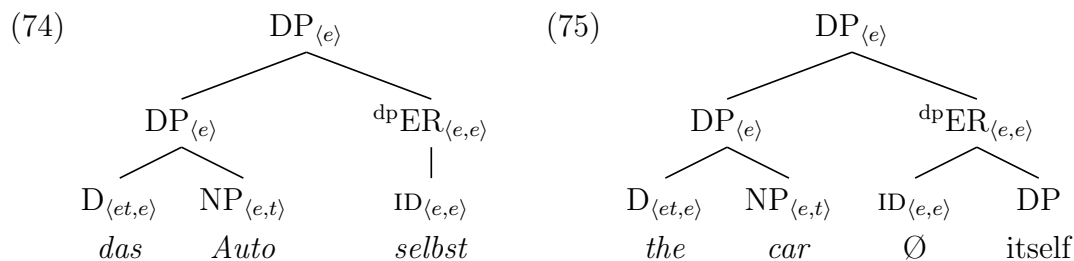
¹⁸I’m not opposed to a theory such as Browning (1993)’s, in which the ID is the *-self* of *himself* and the *him-* is its argument (and similarly for other reflexive ER languages). However, such an analysis seems to require a real semantic difference between the denotation of ID in reflexive ER languages and that of non-reflexive ER languages, and this might be more costly than beneficial.

same semantic denotation of ID in all languages, and posits that the variation is only in the number of syntactic arguments. Explicitly, in both reflexive ER languages and non-reflexive ER languages, the denotation of ID can remain constant, as follows.

- (73) a. $\llbracket^{\text{dp}}\text{ID}\rrbracket = \lambda x_e. \text{ID}(x)$
 b. $\llbracket^{\text{vp}}\text{ID}\rrbracket = \lambda r_{\langle e,vt \rangle}. \text{ID}(r)$

At the same time, the c-selectional properties of the ID functions will differ cross-linguistically: non-reflexive ER languages will have an ID that takes one syntactic argument, and reflexive languages will have an ID that takes two syntactic arguments (one reflexive and one other). By keeping the denotations of IDs constant cross-linguistically, the variation between non-reflexive ERs and reflexive ERs is restricted to the syntax. This makes a strong position that all of the sortal restrictions, which are semantic in nature, should remain constant across languages.¹⁹

With our new theory on ERs, I give a structure for the non-reflexive ^{dp}ER (74), using German, and a structure for the reflexive ^{dp}ER (75), using English.



In (75), I do not label the semantic type of the reflexive DP *itself*. What I mean by this is that this DP is not a semantic argument of the ID function, like an expletive

¹⁹Caution should be taken, however, in reviewing the properties of a given language’s ERs. For example, language X’s ^{vp}ER may be ambiguous between the way we define ^{vp}ERs (Agent-restricted) and a “by Nself” construction (which has no such Agentivity restriction, see Section 2.1).

is not a semantic argument of any predicate. In fact, inherently reflexive arguments clearly match two of the three diagnostics for expletives²⁰ put forth in Postal and Pullum (1988), replicated below.

(76) Diagnostics for Expletives

- (i) Morphologically identical to pro-forms,
- (ii) Non-referential, and
- (iii) Devoid of any but a vacuous semantic role

In this way, as I said, the denotations of ID functions in (74) and (75) are identical, and therefore the denotations of the ERs, reflexive argument or no, are identical.

Thus far, I have extended the semantic analysis of the ER and its ID functions, but I have not been entirely specific about the implementation of these new definitions with regard to the ^vP ER. Before attempting that, we must first understand the syntactic properties of ERs. Afterwards, I will return to the semantics of ^vP ERs in Section 4.3.1.

²⁰Whether or not condition (ii) is met is debatable, since anaphors are non-referring expressions (as they are bound), though they are referential in the sense that they have a referential value.

SECTION 4

Syntactic Licensing

4.1 Two Mechanisms

Given the wealth of data supporting the fact that each ER is given a distinct reading and has its own lexical entry, it should not be surprising that each has its own syntactic mechanisms of being licensed. On the other hand, it seems that, for any given linguistic object, only one ER can be licensed to modify that object. This is like (some) other adjuncts, as demonstrated in (77) and (78).

- (77) a. I did it quickly (*quickly).
b. I did it ^{vp}myself (*^{vp}myself)

- (78) a. The pregnant (*pregnant) woman did it.
b. The woman ^{dp}herself (*^{dp}herself) did it.

However, we should expect that a single clause can contain two ERs if each ER modifies a different object. This turns out to be the case, as below.¹

- (79) *Ray's brother has cleaned the apartment himself twice, Ray's roommate has cleaned the apartment himself once, and...*
a. Ray ^{dp}himself has cleaned the apartment ^{vp}himself.

¹(79c) is slightly degraded for some speakers, perhaps because of the repetition of the same word twice in a row.

- b. Ray has ^{dp}himself cleaned the apartment ^{vp}himself.
- c. ?✓Ray has cleaned the apartment ^{vp}himself, ^{dp}himself.

However, certain ways of using multiple ERs in a clause are disallowed. Namely, multiple ERs cannot modify the same object, even if the two ERs are in different syntactic positions.

- (80)
- a. *Ray ^{dp}himself has ^{dp}himself cleaned the apartment.
 - b. *Ray ^{dp}himself has ^{dp}himself cleaned the apartment ^{vp}himself.
 - c. *Ray ^{dp}himself has cleaned the apartment ^{vp}himself, ^{dp}himself.

This would be unexpected if there were more than one way to license an ER for any single object. That is to say, if “Ray” could license a ^{dp}ER adjacently and a ^{dp}ER at a distance separately, we might expect (80a) to be grammatical. Instead, this is ungrammatical, suggesting that “Ray” can be modified by only one ^{dp}ER.

Thus it seems that in the sentence “Ray has cleaned the apartment”, there are three ER possible licensers: (i) DP “Ray”, (ii) DP “the apartment”, and (iii) VoiceP “cleaned the apartment.” Therefore the maximum number of ERs in a clause is limited only by the number of possible syntactic licensers. In this way, there is no reason for there to be a numerical limit ruling out examples with three ERs, as (80b-c) might suggest;² in fact, data such as (81) deny this outright.

- (81) Ray ^{dp}himself has cleaned the apartment ^{dp}itself ^{vp}himself.

²Baker (1995) argues that it is impossible to have two ^{dp}ERs in a clause, providing (i) as evidence. However, I dispute this with data like (ii). The crucial difference is the amount of context provided.

- (i) ??Fred ^{dp}himself is not usually as alert as Karen ^{dp}herself. (Baker 1995:(46))
- (ii) (*No one in John’s family likes the hamburger meat - not John’s mother, not his brother, not his cousin. However, everyone does like the bun and fixings. John feels differently.*)
 ✓John ^{dp}himself likes the meat ^{dp}itself just fine.

Examples with more ERs may be grammatically possible, but difficult to create because of the increasing amount of necessary context.

4.2 ^{dp}ER Stranding

The data in (80) suggest that ^{dp}ERs in different locations are in complementary distribution with one another. That is, a certain syntactic element (^{dp}ER) may appear in multiple positions, but not in more than one of those positions at a time. The most reasonable way to explain this is a movement analysis, and cannot be straightforwardly explained by an analysis in which ^{dp}ERs may be base-generated in “adverbial” positions (as in Eckardt 2001). The case of ERs is a little more complex than simple movement, as the ER forms a constituent with its associate DP. In this way, ERs share much in common with Quantifier Float, as exemplified in (82)/(83).

- (82) a. [You both] will [~~you both~~] have [~~you both~~] done it.
 b. [You] will [~~you both~~] have [~~you both~~] done it.
 c. [You] will [~~you~~] have [~~you both~~] done it.
- (83) a. [You ^{dp}yourselfes] will [~~you ^{dp}yourselfes~~] have [~~you ^{dp}yourselfes~~] done it.
 b. [You] will [~~you ^{dp}yourselfes~~] have [~~you ^{dp}yourselfes~~] done it.
 c. [You] will [~~you~~] have [~~you ^{dp}yourselfes~~] done it.

Specifically, I assume this derivational link between different positions can be explained with a Sportiche (1988) style of Quantifier Float. In such a theory, a DP can strand a portion of itself in an A-trace position because of the DP’s constituent structure. That is to say, the fact that there is a DP within a DP which share the same formal properties with each other allows either the larger or smaller DP can be a target for movement, as demonstrated in (84). When the smaller DP is moved, the

larger DP shell with the quantifier are stranded behind. The structure argued for by Sportiche is strikingly similar to the structure argued for for ERs in this paper. This parallelism has also been noticed by Bergeton (2004), citing data like (80a) as motivation.

- (84) a. $[_{DP} [_{DP} \text{you}] [_{QP} \text{both}]]$
 b. $[_{DP} [_{DP} \text{you}] [_{ER} \text{yourselves}]]$

Though dp ERs can be stranded, it is clear that vp ERs are not an instance of such stranding. If this were the case, there would be no reason to expect the contrast between (85a) and (b).

- (85) a. Ray dp himself has cleaned the apartment vp himself.
 b. *Ray dp himself has dp himself cleaned the apartment.

Lending further support to a stranding analysis is that the sortal restrictions of section 2.2.2 apply to all positions of dp ER. It is thus the case that all dp ERs, no matter their surface position, act as though they are the same kind of element.

- (86) a. Jenna (dp herself) might (dp herself) go crazy (dp herself).
 b. Which girl ($\#^{dp}$ herself) might ($\#^{dp}$ herself) go crazy ($\#^{dp}$ herself)?

For these reasons, a stranding analysis is the most straightforward in terms of being able to capture the fact that the same element (that is, the ER sub-portion of the DP) may appear in multiple positions.

Other data pointing towards a stranding analysis is that dp ERs are sensitive to the kind of movement its associate DP undergoes. Below are several data points showing that A' movement seems to not allow for ER-stranding – even when the

relevant trace is in an A position.³

(87) Subject Contrastive Topic

- a. The boys all/^{dp}themselves like beans.
- b. ?The boys_i, *t_i* all/^{dp}themselves like beans.⁴

(88) Object Contrastive Topic

- a. Courtney likes {all the boys/the boys ^{dp}themselves}.
- b. *The boys_i, Courtney likes *t_i* all/^{dp}themselves.

(89) Subject Relative

- a. I think the boys all/^{dp}themselves cooked the beans.
- b. *It was the boys_i that I think *t_i* all/^{dp}themselves cooked the beans.

(90) Object Relative

- a. I think that Courtney ate {all the beans/the beans ^{dp}themselves}.
- b. *It was the beans_i that I think Courtney ate *t_i* all/^{dp}themselves.

It seems to me that an A' trace is simply incompatible with a quantifier or ^{dp}ER. Whatever way one derives this,⁵ ^{vp}ERs are completely licit in situations where the subject has A'-moved, again suggesting that an ^{vp}ER's position is derived without movement, unlike ^{dp}ERs.

- (91) a. The boys_i, *t_i* cooked the beans ^{vp}themselves.
b. It was the boys_i that I think *t_i* cooked the beans ^{vp}themselves.

³I do not include examples of wh-movement, as ^{dp}ERs are incompatible with non-specific DPs.

⁴The hallmarks of contrastive topics in English are: a high pitch on topic's stress, a rising L-H% pitch contour, and a strong prosodic break. I represent these prosodic cues with a comma.

⁵The data involving stranding in an object position might be ruled out apart from A' movement, as the object position has long been recognized as incompatible with FQs. (Bošković 2004)

4.2.1 The Relationship Between Q-Float and ERs

It is not my assertion that Sportiche (1988) is correct for the distribution of floated quantifiers, but rather that the mechanism used in Sportiche (1988) to explain the distribution of FQs applies to ^{dp}ERs. In fact, many have pointed out, the FQ analysis in Sportiche (1988) makes predictions that are not borne out. Namely, it would incorrectly predict (92) to be good.

- (92) a. *The students had arrived [~~all the students~~].
b. *Les étudiants sont arrivés [~~tous les étudiants~~].

More recent FQ analyses use this kind of data to argue for a new derivation of FQs. For example, Fitzpatrick (2006) argues that the distributional facts for Q-float are derived by adverbial adjunction with a silent null pronoun, *pro*, as below.

- (93) [_{DP} The students]₁ will have [_{VP} [all *pro=them*] [_{VP} t₁ had lunch]]

Though, under this analysis Q-float is not an instance of stranding⁶, his analysis is not (easily) extendable to other adnominal elements outside of quantifiers. Importantly, his data seems to rely on possible semantic differentiation between Q-float positions and adnominal positions. In fact, his analysis allows for multiple instances of quantifiers, as in (94a). If ER-float were similarly analyzed, one would expect (94b) to be licit, though we have previously in (80) seen this not to be the case.

- (94) a. ✓All the students have all arrived. (Fitzpatrick 2006:46)
b. *#The students ^{dp}themselves have ^{dp}themselves arrived.

⁶At least in the case of A-movement. See Fitzpatrick (2006) for a discussion of Q-float as an instance of stranding in the case of A'-movement.

Moreover, Fitzpatrick intentionally blocks Q-float at the right edge of the sentence (for verbs of all types), as in (95a). If we adopted an adverbial analysis for ER-float, we would be unable to explain the difference between (95a) and (95b).⁷

- (95) a. *The finalists have danced all. (Fitzpatrick 2006:39)
b. ✓The finalists have danced ^{dp}themselves.

As we can see, more modern theories on Q-float diverge from the stranding analysis of Sportiche (1988). However, we have also seen that ERs and FQs differ in exactly the ways that have motivated modern research away from a stranding approach. For this reason, utilizing a stranding approach to explain the distribution of ^{dp}ERs is still appropriate.⁸

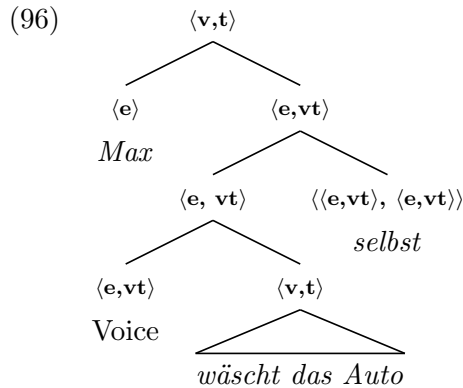
4.3 Adverbial Attachment of ^{vp}ERs

^{vp}ER are adjuncts that are crucially linked to certain verbal properties – namely the ability to introduce a volitional agent. Hole’s analysis, reiterated in (97), offers an argument structure that more or less corresponds to the syntactic tree in (96).⁹

⁷Though Sportiche (1988) doesn’t explicitly support the grammaticality of (95b), the analysis allows for it to be grammatical (assuming the DP moves through a right-adjoined position at some point in the derivation). I do not have a clear idea as to why ^{dp}ERs appear at the right edge, but this is even true in languages other languages which do not allow for Q-float to the right edge, like English does not. See Section 6.2.3 for an open-ended discussion.

⁸Though Sportiche himself has abandoned his stranding analysis of FQs, he would not claim such an operation is ruled out by the syntax; rather, it simply fails to capture all the FQ data. (p.c., Sportiche)

⁹Hole never gives an explicit syntactic analysis, but I have induced the structure in (96) as being the structure necessary to be compatible with his assertions.



- (97)
- a. $[[\text{Voice}]] = \lambda x_e \lambda e_v. \text{Agent}(x)(e)$
 - b. $[[^{\text{VP}} \text{selbst}]] = \lambda r_{\langle e, vt \rangle}. \text{ID}(r)$
 - c. $[[^{\text{VP}} \text{selbst}_{\text{foc}}]] = \lambda r_{\langle e, vt \rangle}. \text{ID}(r)$, where focus alternatives are of the form $f(x)(e)$
 - d. $[[\text{Voice}^{\text{VP}} \text{selbst}_{\text{foc}}]] = [\text{ID}([[\text{Voice}]])]_{\text{foc}}$
 $= [\text{ID}(\lambda x_e \lambda e_v. \text{Agent}(x)(e))]_{\text{foc}}$
 $= \lambda x_e \lambda e_v. \text{Agent}(x)(e)$, where focus alternatives are of the form $f(x)(e)$

However, as mentioned in Section 3.1.2, there are three problems with this analysis. First, the adjunction site of the non-reflexive ER to an X' level is non-standard at best. Since Barriers (1986a), Chomsky has argued that bar-levels are not levels of structure that can be referenced by the syntax – the only “real” syntactic units are minimal (X^0) and maximal projections (XP). Furthermore, in an approach following Kayne (1994) or Cinque (1999), the relationship between a head and its argument is extremely local, and attacking this locality by suspending argument-satisfaction of a head is all but explicitly ruled out.

Second, the disappearance of ERs in instances of VP Ellipsis also presents an issue for the analysis in (96). By using examples of ellipsis with voice-mismatch, Merchant (2007:15) argues that VP Ellipsis is ellipsis of the Voice⁰'s sister.

- (98) This problem was to have been looked into *Voice_{passive}* [~~look into this problem~~], but obviously nobody did *Voice_{active}* [~~look into this problem~~].

The Voice head must be outside the ellipsis in order for the elided material to be syntactically identical in (98). Moreover, ellipsis of the TP (sluicing) is incompatible with voice-mismatch because there could be no syntactic identity between TPs with

different voices.

- (99) *This problem was looked into *Voice_{passive}* [~~look into this problem~~], but we don't know who [~~looked *Voice_{active}* into this problem~~].

Returning to the ^vPER data, it is clear that, as Moravcsik (1972) and Edmondson and Plank (1978) have noted, the ^vPER must appear within the domain of VP Ellipsis. The implication for (100a) is that Pete designs them, but he gets help.

- (100) a. Jack designs them ^vPERhimself, but Pete doesn't [~~design them ^vPERhimself~~].
b. ?*Jack designs them, but Pete doesn't [~~design them~~] ^vPERhimself.¹⁰

Since it seems infelicitous to have the ^vPER as pronounced with VPE (100a), and since VPE seems to yield the interpretation where the ^vPER is in the elided verb phrase (100b), it seems that ^vPERs must also be contained in the sister of Voice.

Third and finally, there is nothing in Hole's analysis per se which restricts ^vPERs to verbs with **volitional** agentive subjects. As mentioned in Section 2.2.3, volitional agents are licensed by a portion of the verbal morphology that is higher than the non-volitional agent licenser. The data provided in Koopman (2008)'s analysis of Samoan ergatives reveals that volitional agents co-occur with extra verbal morphology ('*faʔa*') in a way that non-volitional causers never do.

- (101) a. *na faʔa-mama: e Ioane le ʔieʔafu*
PAST CAUSATIVE-clean ERG John the sheet_{abs}
'John cleaned the sheet.'

¹⁰This is as (un)acceptable as cases that appear to be pseudogapping a manner adjunct, as below in (i). Though it may be somewhat acceptable, the badness must be explained somehow.

(i) ??Mary didn't run, but Lily did (run) quickly.

- b. *na (*faʔa-)mama: le ʔieʔafu i le timu*
 PAST (CAUSATIVE-)clean the sheet_{abs} OBL the rain
 ‘The rain cleaned the sheet.’

Thus, I argue that the Voice head licenses volitional agents like the one in (101a) whereas another, lower head, Cause, licenses a non-volitional causer as in (101b). With this and the VPE data in mind, I argue that CauseP, sister of the Voice head, is the ellipsis site which contains the ^vP_{ER}. Furthermore, as adjuncts cannot attach at the X' level, ^vP_{ER} is adjoined to the maximal projection of Cause. In an analysis such as this one that I propose, it simply becomes mechanical to capture the volitional/non-volitional distinction of the sentences in (102a) and (b).¹¹

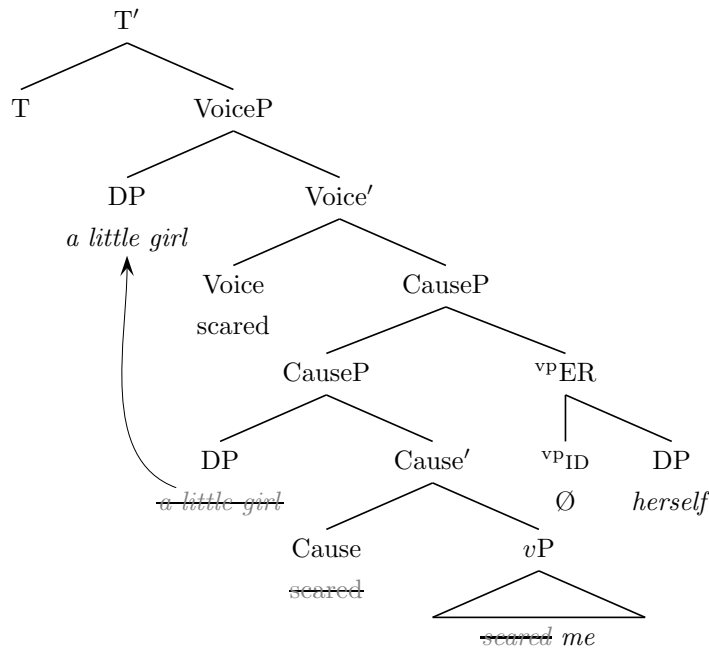
- (102) a. A little girl scared me ^vP_{herself}.
 b. ?*A small noise scared me ^vP_{itself}.

¹¹ Assume the list of verbal shells have the following hierarchy *VoiceP* > *CauseP* > ... > *vP* > *VP*. In my analysis, if *VoiceP* is in the derivation then every shell from *VP* to *VoiceP* must be in the derivation. Conversely, if *vP* is in the derivation, it does not necessarily follow that *CauseP* or *VoiceP* must be as well. In this way, predicates with volitional agents have exactly one more verbal shell than those with only causers.

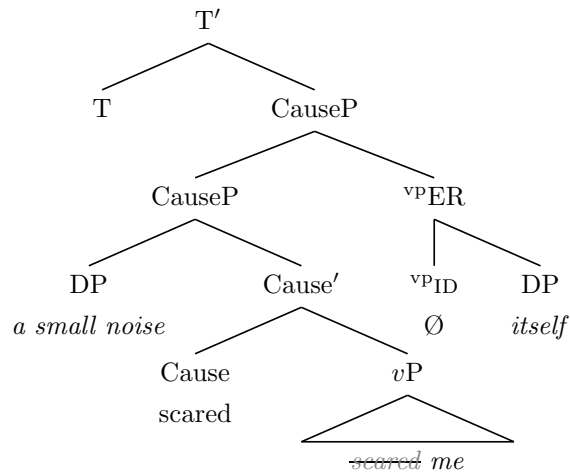
It is worth questioning what a CauseP shell does if it does not introduce a DP causer. In my analysis, I would actually argue that CauseP, when present, always introduces a causer. This is to allow for a compositional analysis of subject theta roles such that agents are in fact causers that are volitional as well (or, to extend the analysis, agents are initiators that are causers that are volitional, if an InitP is proposed). This is not far-fetched considering the fact that volitional agents are a notional subset of causers (which are a subset of initiators).

Also relevant to the data at hand, in an analysis like this one, the label of the VPE site depends on the number of shells in the verbal structure. I argue that the ellipsis site must be the sister of the highest verbal projection's head. Thus, in a structure in which CauseP is the highest verbal shell, the target of VPE is sister of Cause; and as predicted by Merchant (2007), when it is VoiceP, the target of ellipsis is the sister of Voice.

(103) a. A little girl scared me ^{VP}herself.



b. ?*A small noise scared me ^{VP}itself.



In these derivations, the non-volitional causer (*a small noise*) in (103b) is licensed by Cause and the volitional agent (*the barking dog*) in (103) is licensed by Voice. The sentence represented by (103b) is ungrammatical with the ^{VP}ER, for two potential reasons. First, there may be an issue with binding. But second and more importantly,

there is no Voice head to be the argument of the ^vPER, as is extensively motivated in Hole (2002). Thus, the difference in grammaticality between a volitional structure like (102a) and a plain causative structure like (102b) is captured under this theory.¹²

Moreover, ^vPERs are much further degraded when there isn't even enough structure to adjoin in the first place. Take, for example, a predicate that has a Cause but no Volitional Agent; using a ^vPER is out, as (104a) – like (103b) – shows. However, if we remove the CauseP completely (where the ^vPER attaches), the use of an ^vPER is utterly terrible, as (104b) shows.

- (104) a. ?*The wind froze Lake Haruna ^vPERitself.
 b. **Lake Haruna froze ^vPERitself.

This is analogous to being unable to attach any other adverb when there is not enough structure. Take for example the adverb *definitely* (which should attach in the tense/modal region) and a small clause structure.

- (105) a. ✓I consider Tina to definitely be a comedic genius.
 b. *I consider Tina definitely a comedic genius.
 c. *I consider definitely Tina a comedic genius.

The ungrammaticality of (104b) and (105b-c) share the same cause – the lack of a proper attachment site for the adjunct in question.

¹²If the implementation of verbal projections/compositionality of theta roles seems unnecessary, the same work can be done in a more minimalist framework (see Appendix B), assuming a story for where VPE occurs in verbal projections of different sizes, and, more importantly, a mechanism to distinguish volitional agents from causers.

4.3.1 Revisiting the Semantics

After reviewing the motivations for our new syntactic analysis, we must update our semantic theory, notably with regard to the argument structure and the type denoted by the ID function. Before we do that, let us review Hole’s analysis. His used a definition of ${}^{\text{vp}}\text{ER}$ as given below, but this definition forced the ${}^{\text{vp}}\text{ER}$ to adjoin in a place that (a) was not a good syntactic site of adjunction, (b) did not predict VPE data, and (c) did not prediction the Volitionality Condition. This definition is repeated below.

$$(106) \quad \llbracket {}^{\text{vp}}\text{selbst} \rrbracket = \lambda r_{\langle e,vt \rangle}. \text{ID}(r)^{13}$$

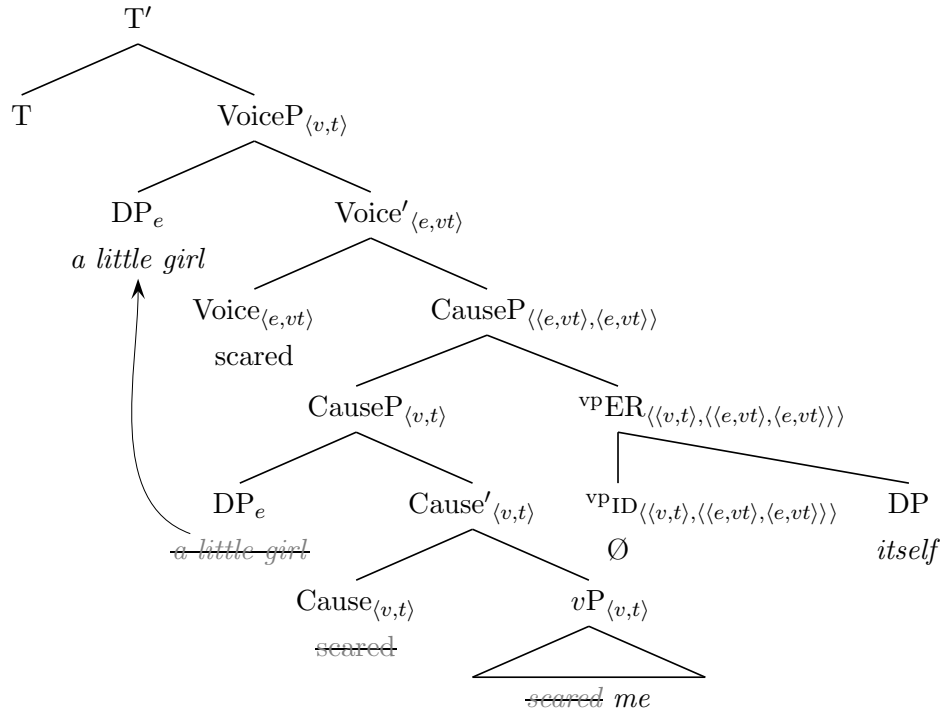
Thus, to integrate the semantics with the syntactic theory just presented, I have type-lifted the ID. This new type-lifted ${}^{\text{vp}}\text{ER}$ is defined below.

$$(107) \quad \llbracket {}^{\text{vp}}\text{ER} \rrbracket = \lambda E_{\langle v,t \rangle} \lambda \Psi_{\langle e,vt \rangle} \lambda x_e \lambda e_v. \text{ID}(\Psi(x,e)) \ \& \ E(e)$$

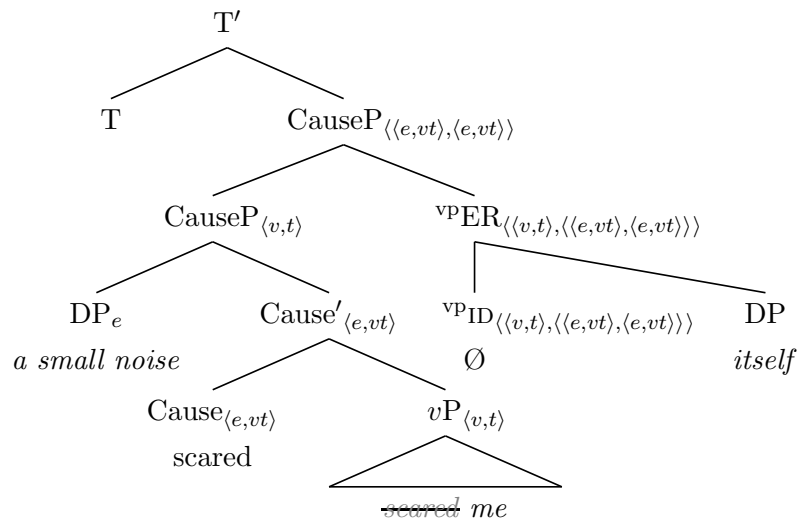
Importantly, this will still require the verbal structure to have the volitional agent licensing Voice head. In my definition, the variable Ψ ranges over theta-role assigners like Voice. Since ${}^{\text{vp}}\text{ER}$ adjoins to CauseP, and since there is no theta role assigner above CauseP besides Voice, if there is no VoiceP present in the structure, the ${}^{\text{vp}}\text{ER}$ will fail to have its Ψ argument filled, crashing the interpretation. To make clear this analysis, I have added semantic types to the trees presented in (103).

¹³Recall that r is a variable ranging over Voice heads, specified by Hole.

(108) a. A little girl scared me ^{vp}herself.



b. ?*A small noise scared me ^{vp}itself.



Furthermore, now we have the tools to revise the Volitionality Condition in formal terms. Rather, what I do is merge the Agentivity and Volitionality Conditions (both

repeated below), since I argue that Voice is the licenser of volitional agents.

- (109) Agentivity Condition (Revised)
A predicate modified by an ^{vp}ER must include an Agent-assigning Voice head of type $\langle \mathbf{e}, \mathbf{vt} \rangle$.
- (110) Volitionality Condition
The subject of a clause with a ^{vp}ER must be volitional.
- (111) Volitional Agentivity Condition
A predicate modified by an ^{vp}ER must include a Voice head of type $\langle \mathbf{e}, \mathbf{vt} \rangle$.¹⁴

Thus I have recaptured the last of the sortal restrictions with a definition referring to the formal properties of ERs.

4.4 Binding

Assuming that ERs involve a bound reflexive pronoun, it must be the case that binding principles apply. If this is the case, we may expect that there are locality constraints on the positions in which ERs can occur, as we see with ‘normal’ reflexives. Examples of constraints on DPs intervening between an anaphor and its antecedent are given below.¹⁵

- (112) Eric_i showed Denkins_j himself_{j/*i}.
- a. *Eric said, “Denkins, look at me.”
- b. ✓Eric said, “Denkins, look at yourself.”

¹⁴This presupposes a theory of volitional agent licensing like the one I use. However, it is easily modified for a different theory of agent licensers by changing “a Voice head” to “a volitional agent licensing head.”

¹⁵It should be mentioned that judgments on examples like (112-113) may be subject to dialectal differences; furthermore, if at all acceptable, they may be sensitive to linguistic factors such as *de se* versus *de re*. (Ahn, Orfitelli, and Sportiche, *in preparation*)

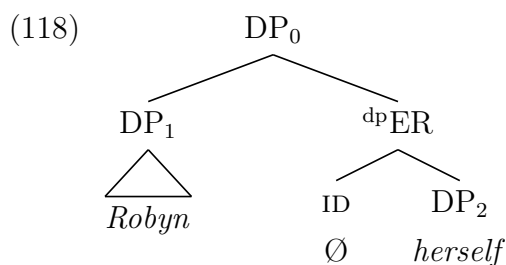
- (113) Eric_i made Denkins_j watch himself_{j/*i}.
 a. *Eric said, “Denkins, watch me.”
 b. ✓Eric said, “Denkins, watch yourself.”

However, such constraints are not found with ERs.

- (114) A: Did Eric_i and his_i wife make Denkins_j watch for trespassers together?
 B: No, Eric_i made Denkins_j watch ^{vp}himself_j.
 ≈ Without his wife’s help, Eric said, “Denkins, watch for trespassers!”
- (115) A: Did Eric_i make Denkins_j and his_j sister watch for trespassers together?
 B: No, Eric_i made Denkins_j watch ^{vp}himself_j.
 ≈ Eric said, “Denkins, watch for trespassers without your sister’s help!”
- (116) A: Did Eric_i’s wife make Denkins_j watch for trespassers?
 B: No, Eric_i made Denkins_j watch ^{dp}himself_j.
 ≈ Eric (not his wife) said, “Denkins, watch for trespassers!”
- (117) A: Did Eric_i make Denkins_j’s sister watch for trespassers?
 B: No, Eric_i made Denkins_j watch ^{dp}himself_j.
 ≈ Eric said, “Denkins, you (not your sister) watch for trespassers!”

To deal with this data, we can pose two hypotheses. First, ERs don’t follow binding conditions, unlike all other reflexives. Second, ERs are bound locally according to binding conditions but the structure is such that there is no real intervening DP in cases like (114–117). Thanks to the syntactic structures we have developed here, Hypothesis Two will be assumed.

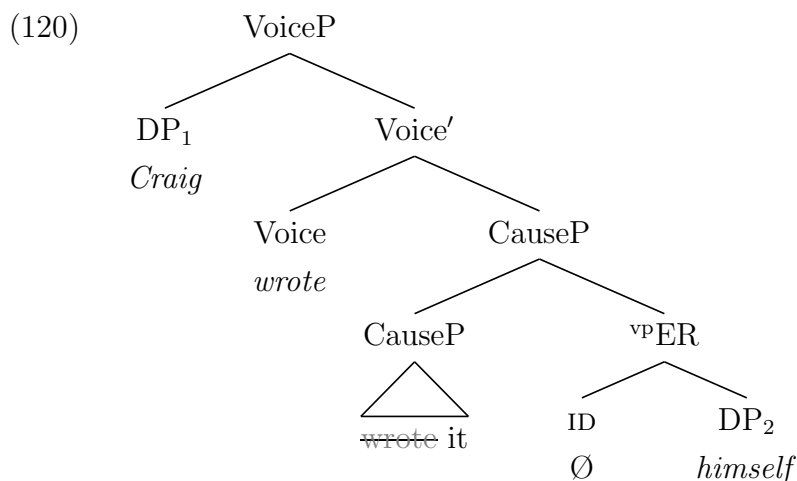
As we saw in Section 4.2, ^{dp}ERs form a very small syntactic constituent with their associate DP. Furthermore, the logical form also suggests that the reflexive and the associate DP are co-arguments of the ID function. The syntactic tree for a ^{dp}ER from (75) is repeated below with DP indices.



This being the case, binding is trivial under a Chomsky (1981, 1986b) syntactic locality plus c-command approach to Binding – DP₁ immediately c-commands DP₂.¹⁶ Of course, this very local binding relationship is also in place even when stranding has taken place, as in (119).

(119) Robyn_i must t_i have [t_i herself] been falling down laughing.

Furthermore, ^vP ERs too are always trivially bindable, as in the next example.



The DP₁ Specifier of VoiceP c-commands the reflexive DP₂ within the same binding

¹⁶In Reinhart and Reuland (1993)'s semantic co-argument analysis, ID is a (inherently) reflexive marked predicate and DP₁ and DP₂ are co-arguments of the ID predicate. I believe a Pollard and Sag (1992)'s lexical structure approach would deal with this well, but I'm not sure as the obliqueness ordering of ID's arguments is not clear.

domain, and the two share a closer relationship than the agent DP would have with any object DP, preventing any kinds of object interveners.¹⁷

ER binding, therefore, could never had interveners blocking binding as the syntactic relationship between ER and associate DP is too local to allow room for any interveners.

4.5 Summary

^{dp}ERs and ^{vp}ERs are independently licensed from one another, even allowing a ^{dp}ER and a ^{vp}ER in the same clause with the same referential indexes. However, a given DP can only license one ^{dp}ER and a given VoiceP can only license one ^{vp}ER, constraining how many ERs can appear in the same sentence.

^{dp}ERs are licensed by – and adjoin to – DPs in an extremely local relationship. ^{dp}ERs can appear in multiple sentential positions at the surface due to a Sportiche (1988) style stranding operation. ^{vp}ERs are licensed by VoiceP and adjoin to CauseP (just below VoiceP). The well-formedness of ^{vp}ERs relies on an Agent being licensed in VoiceP.

Finally, we saw that the binding of ERs is achieved very locally due to the independently-motivated syntactic configurations in which ERs are licensed.

¹⁷It is not clear to me how easily Reinhart and Reuland could explain this binding as it does not seem that the reflexive is not straightforwardly a co-argument with its antecedent. Pollard and Sag might also have problems since there do not seem to be any DP co-arguments that could o-command the reflexive.

SECTION 5

Prosodic Properties

As we saw in (1) and (2), ERs in English are segmentally and (apparently) morphologically identical to clausal reflexive arguments. However, given the intuitions of Eckardt (2001) and Hole (2002) and the focus-related requirements of our semantic theory, I set out to test if and how they differ prosodically.¹ Specifically, I expect (a) that ERs must always be prominent, and (b) that there will be iP breaks surrounding the ER (sometimes optionally).

Furthermore, given the contrastive focusing nature of the ER as we discussed in Section 3 and a framework on intonation-meaning mapping such as Pierrehumbert and Hirschberg (1990), I expect and find ERs to consistently be associated with a L+H* accent. I also find that, though there are several ways to divide up ERs (syntagmatically and semantically), ERs act as a homogeneous class with respect to prosody. This is taken as evidence in favor of our analysis, whereby ^dpERs and ^vpERs both share the property of needing to elicit focus alternatives.

In pursuing the prosodic qualities of ERs, I assume the framework of MAE_ToBI (as most recently formalized in (Beckman et al. 2006)), though exact conventions may not be followed if it seems appropriate. For example, I use the mismatch label

¹Recall that without contrastive focus on an ER, we predict that the ER would contribute no meaning due to the more-or-less vacuous meaning of the ID function denoted by ERs. See (56), (65), and their neighboring paragraphs in Section 3.1 for in-depth discussion.

‘1m’ label to mean ‘word-level break, with a intermediate phrase (iP) tone’, as has been discussed in a recent ToBI workshop.²

5.1 Methods

5.1.1 Recording

To test the hypothesis on the pitch accent of the English ER, I have run a production experiment. There were three participants – BW, CC and KV. They are all female native speakers of English. BW and CC are from the Los Angeles area, and KV is originally from Dallas, Texas.

Each recording session was conducted in the UCLA Phonetics Lab sound booth. Data was recorded digitally through head-mounted microphones to a computer and saved in WAV format. In each session, the participant read lines that were part of 48 short scripts that were approximately three or four lines a piece. Participants were asked to read the entire script first, as to fully understand the context, and then read the script twice, as naturally as possible. Participants were offered a short break halfway through the experiment, which lasted about forty-five minutes.

The 48 scripts were composed of 24 fillers and 24 test conditions. The test conditions are summarized in Table 5.1. This set of conditions will force subjects to produce sentences which are predicted to be ungrammatical – namely the PVEs with an object promoting verb, as in (10–12) of Section 1.3.2, repeated below as (121–123).

²I interpret the ‘1m’ to mean that an iP level break is not fully realized when it is otherwise expected to be.

- (121) *The radio broke itself.
 (122) *The beef was burned itself.
 (123) *John arrived himself.

That participants are asked to produced ungrammatical sentences should not be a problem – in fact, what participants did in these cases turns out to be informative.

	Adjacent (AE)	Post-VP (PVE)	Sentence Final
Transitive	x4	x4	x4
Object Promoting	x4	x4	x4

Table 5.1: Test Conditions

That said, I will focus primarily on data regarding AEs and PVEs, as they are the most natural.

The fillers and the test sentences were pseudo-randomized such that the first and last two scripts were fillers. A sample script is given below in (124). For a complete list of scripts, please see the Appendix. Since each script required two speakers, I filled the role of the second speaker.

- (124) A: Did you hear about Perry?
 B: Yeah – about his bike, right?
 A: Well not only did his bike get hit by a car last week...
 B: Oh no, what happened now?
 A: He himself was hit just last night.
 B: Is he okay?
 A: Yeah, the car wasn't going very fast.

5.1.2 ToBI Transcription

The sentences containing the ER in each of the scripts were segmented and labelled in Praat. Labeling was done independently by two labelers who are native speakers of English, and who are familiar with MAE-ToBI.

5.1.3 Excluded Data

Fifteen cases (or about 11%) of the 137 recorded test sentences were discarded, where it was determined by both labelers that the produced sentence was ungrammatical with an ER interpretation. These errors occurred when the speaker either (a) seemed to interpret the verb as a transitive taking the reflexive word as an argument, or (b) made performance errors such as misreading the script in such a way as to affect the status of the ER. An example of each of these kinds of mistakes are given below.

- (125) a. Then he collapsed himself.
b. Then he collapsed on himself.

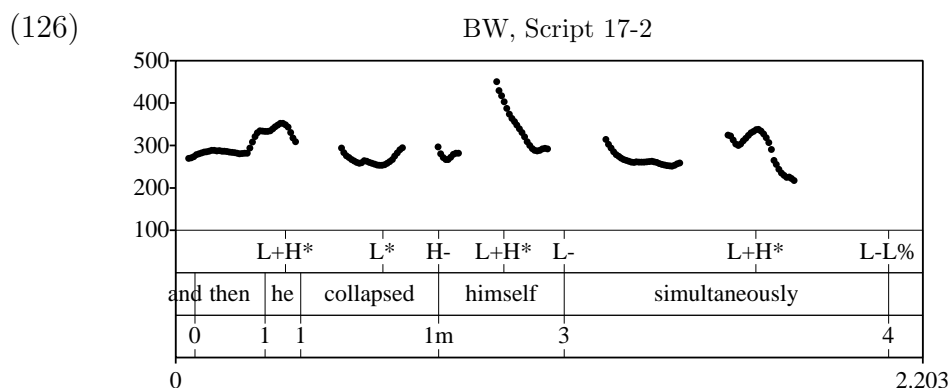
The type of error in (125a) is due to the fact that “collapse” is ambiguous between causative and unaccusative, and “himself” is ambiguous between an ER and an argument. The type of error in (125b) allows for a grammatical (albeit different) interpretation.

5.2 Results

5.2.1 Generalizations

Most instances of ERs (103/122, or 84.4%) surfaced with a L+H* pitch accent.³ The remaining 15.6% of ERs, which were not marked with L+H*, will be discussed later on.

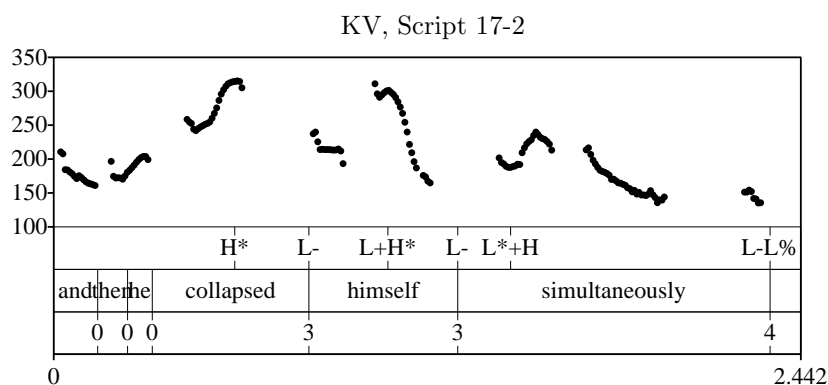
The accent on the associate DP varied much more – the most common being H* (37.7%), no pitch accent (25.4%), and L+H* (18.0%). This suggests that there is no pitch accent requirement regarding the associate DP, and having one is more or less optional. Our semantic analyses of ERs whereby only the identity functions, not their arguments, are focused predict this lack of a consistent pattern.⁴ Examples of this optionality are given below.



³When I refer to ERs having a L+H* pitch accent, I mean to say L+H* as well as L+¹H*. I assume that, underlyingly, the two are the same pitch accent.

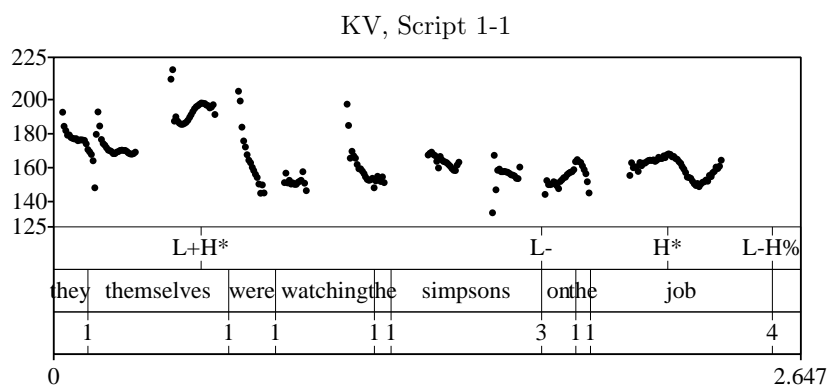
⁴Recall that the reflexive word in English does not represent the ID function, but is rather a syntactic argument. That said, as the ID function is silent, the reflexive word is somehow made to bear the focus intonation – perhaps similar to syntactic elements in T bearing the focus of silent positive polarity operators.

(127)



All of the L+H* marked ERs were also nuclear pitch accents (NPA) – the most prominent pitch accent in its intermediate phrase (which, in English, is always the right-most accent in its iP). As a result, post-ER material in the same iP was deaccented, as we can see in (128).⁵

(128)

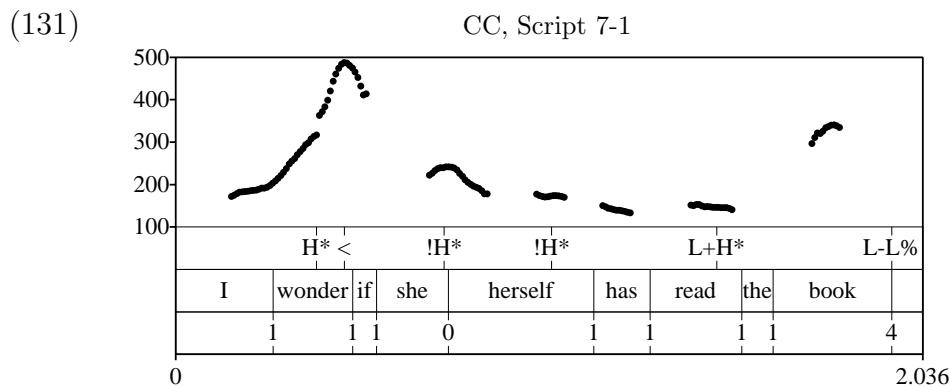
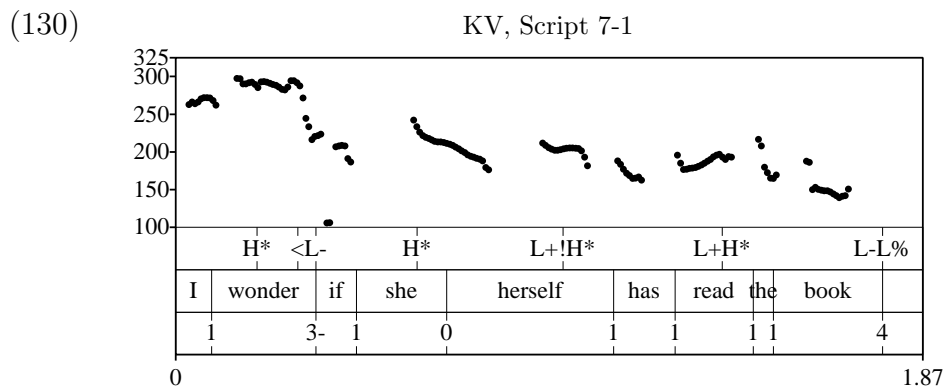
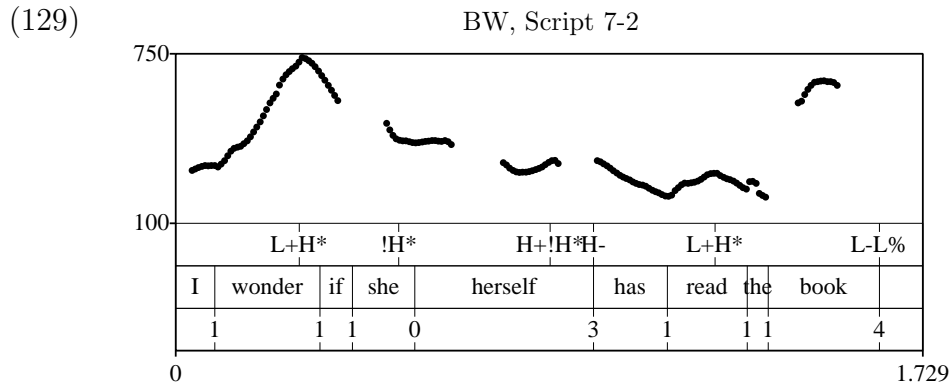


5.2.2 AEs

ERs in the AE position can be marked L+H*, just as the rest of the ERs; but unlike other ERs, there were also cases of AEs being marked with ¹H* or H+¹H*. Data of

⁵It might be that this is not deaccenting, but some other kind of pitch range reduction, as it seems there may be certain cases of very weakly realized accent in the post-ER domain.

each of type can be seen in (129–131), which are all from the same script.⁶

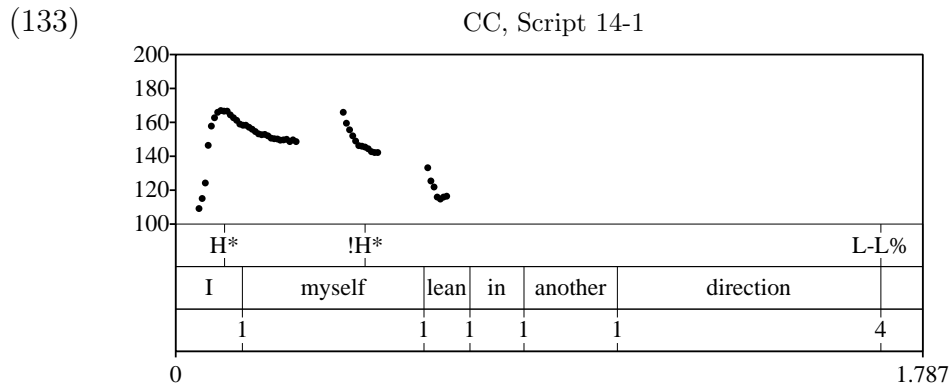
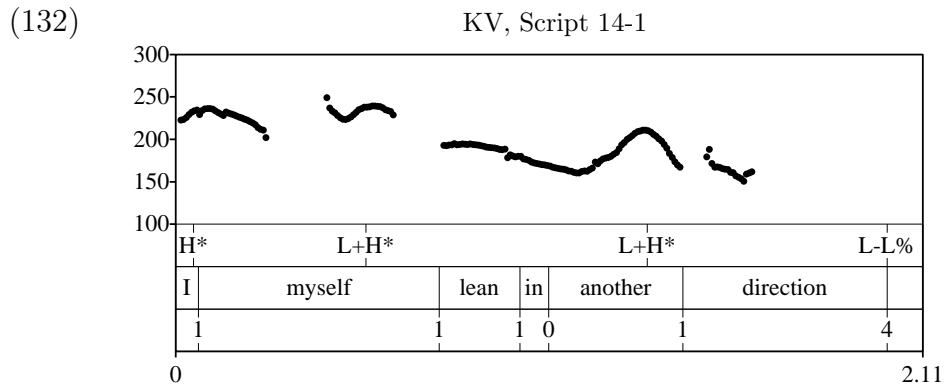


In fact, every ER that was not marked L+H* was an AE that was marked (H+)!H*.

⁶In (129) and (131), there is pitch-doubling on “book” – the actual pitch is much lower than the computer-generated pitch tracks represent.

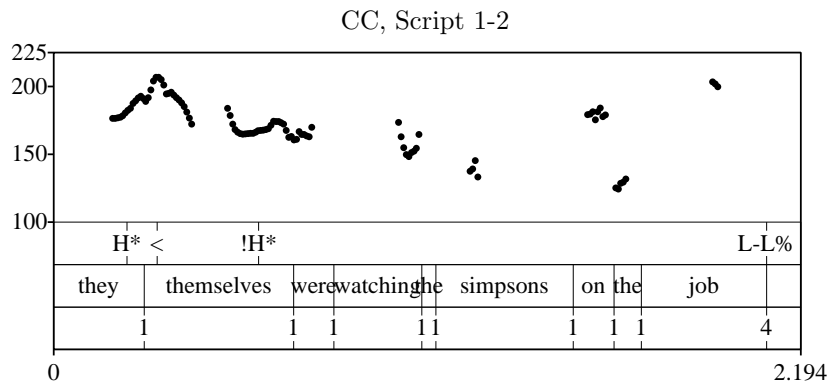
The fact that the examples in (129–131) are all from the same script – while also varying with regard to $L+H^*$ or $(H+)'H^*$ – suggests that AEs are not inherently different from other ERs, but exhibit multiple surface variants for a common underlying form.

Moreover, there does not seem to be any requirement that AEs be the NPA (unlike the $L+H^*$ ERs). This becomes clear when comparing (132) and (133).

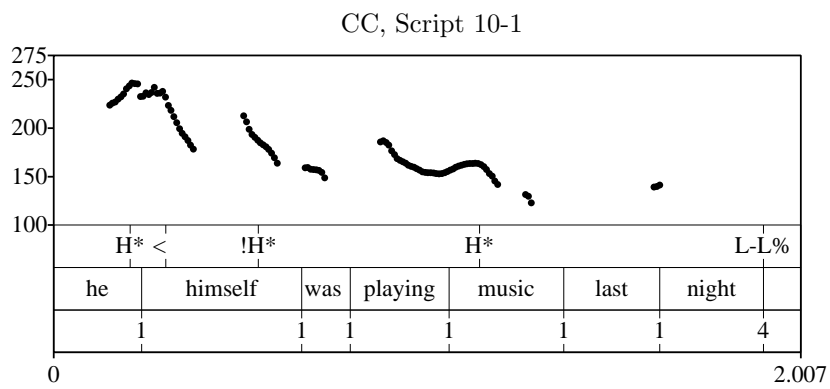


As for the AE's associate DP, the tone (if there is one) is sometimes delayed into the ER, as in (134) and (135). This pattern seems to show up most often when the associate is a shorter word such as a pronoun or one-syllable name.

(134)

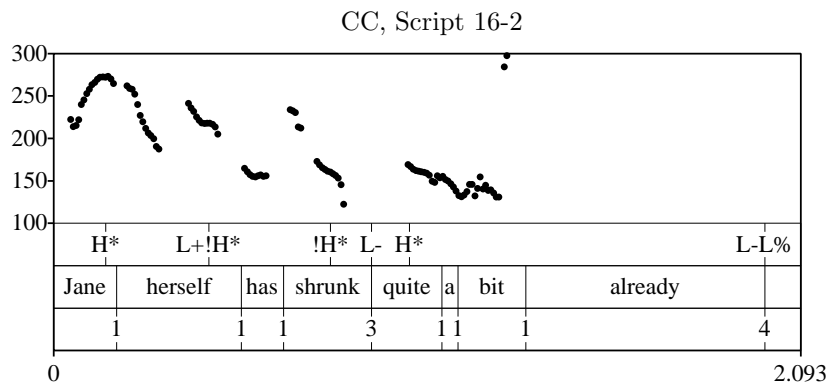


(135)



Finally, as in (130), (132) and (136), the L dip on the ER can be often rather shallow (if not nonexistent).

(136)

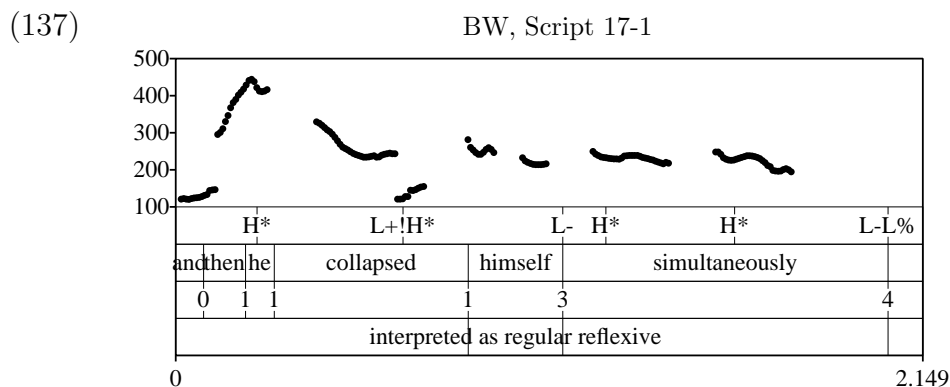


5.2.3 Necessary iP Breaks

Thus far, nothing has been said about prosodic requirement on the kind of prosodic breaks that surround the ER. As mentioned earlier in Section 5.1.1, subjects were asked to produce what were expected to be ungrammatical sentences in some of the scripts; namely those where there is a PVE with an object promoting verb. Often times, when given one of these sentences, the participant had difficulty pronouncing the sentence fluently, reading the script as it was written or interpreting the sentence correctly.⁷ Take, for example, the relevant section of script 17, below.

- A: Well, I pushed over my voodoo doll of John...
 B: Uh huh...
 A: And then he collapsed himself simultaneously.

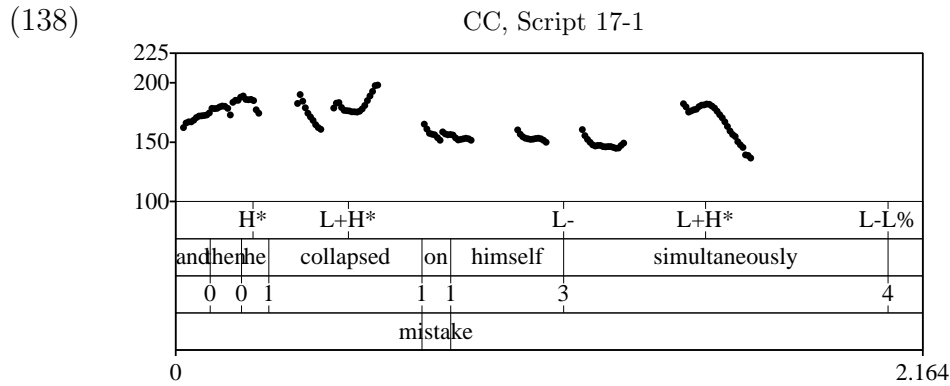
When it comes to reading the test sentence, “And then he collapsed himself simultaneously”, BW seemed to interpret the verb as a causative, as in “He collapsed the folding chairs.”



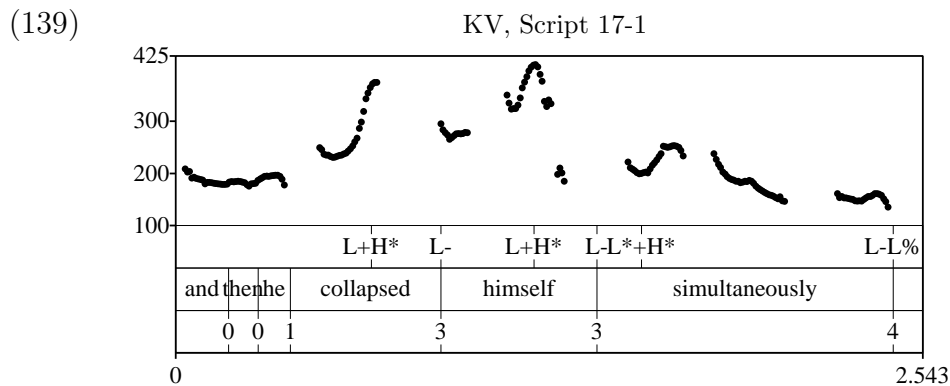
In this way, BW used “himself” non-emphatically, which is why there is no pitch

⁷This is despite the fact that the participants had already read the passage to themselves and read the passage out loud twice.

accent on it. CC, on the other hand, inserted a preposition to make the sentence more straightforwardly grammatical.

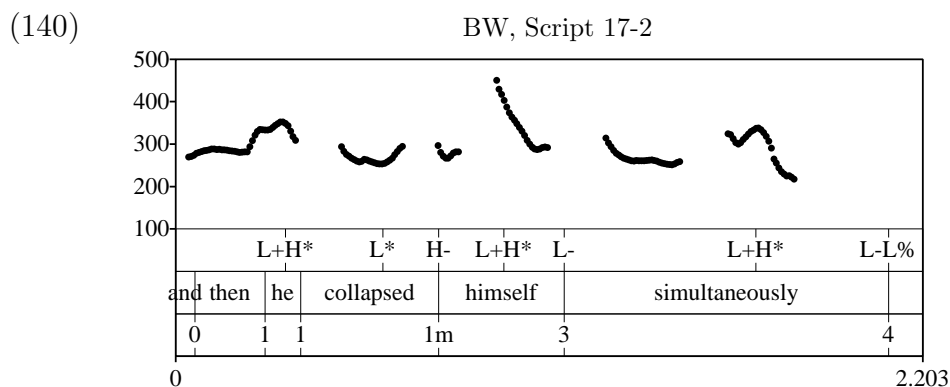


In both examples above, the speaker is trying to interpret “himself” non-emphatically, and therefore there is no accent on it.⁸ However, some productions of this same sentence were made in such a way that it sounded grammatical.⁹



⁸It may seem circular, but the reason that these are interpreted as non-emphatic is that they have no accent; and they have no accent, because they are non-emphatic uses of the reflexive that are not focused in any way. Though there is no escaping this circularity, I feel strongly that the intuitions are correct.

⁹(139) sounds somewhat more natural than (140). Perhaps this is because the iP break target before the ER in (140) is not fully realized, which degrades the naturalness.



By inserting intermediate phrase breaks, the sentence sounds grammatical, and the ER is easily interpretable as emphatic.

5.3 Discussion

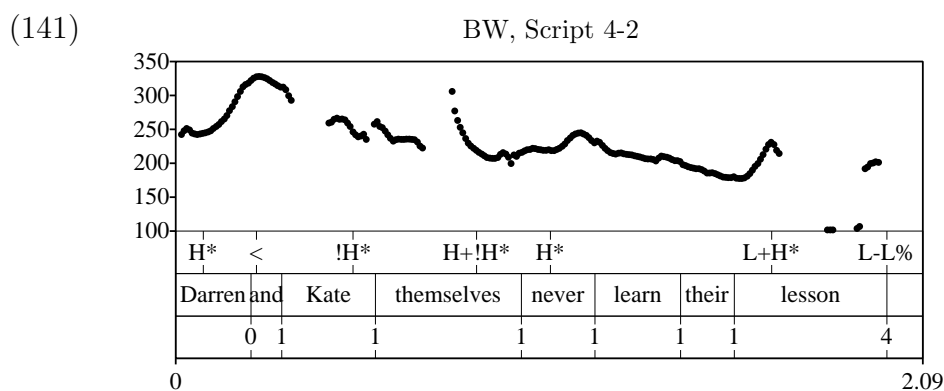
5.3.1 Pitch Accent

When it comes to the variations on the ER's accent – namely in the AEs, where we find a surprising amount of variation (see section 5.2.2) – perhaps we can say this is because an AE cannot be interpreted any other way (e.g. not as a plain reflexive).

More strongly, I believe there is a phonological story behind these variations. AEs are used with monosyllabic words, such as pronouns, very often. We could imagine that if the monosyllabic word were marked with some kind of high tone – antecedents in this study were found to be so ~60% of the time – and the ER is L+H* marked, there may not be enough time to fully realize both of these targets. Since the L of the L+H* is not attached to a stressed syllable, it seems that this might be the first to be weakened – as we saw in the undershot Ls of (130) and (132).

From this weakened L, it is not hard to imagine that instead of being realized on

its own, the L down-steps the following H* – as is common in African tone languages for non-fully-realized Ls adjacent to Hs. This now yields a [H 'H*] sequence, with the H on the pronoun, as in (131) and (133). Since pronouns are often prosodically weak words, it might make sense that instead of a tone target on the pronoun, this sequence became one tone marking the ER, H+[!]H*. I believe that this process has since become grammaticized such that you find H+[!]H* with a prosodically stronger antecedent – for example (141).



Under this analysis, all of the tone targets we found on ERs were L+H* or a surface variant. Furthermore, this explains why AEs act as a natural class to the exclusion of other ^{dp}ERs for prosody when they do not in the syntax or semantics. Importantly, this variation in pitch accent does not exist in all ^{dp}ERs or any ^{vp}ERs, which should further indicate this property is more or less a surface accident than representative of the underlying form.

Overall, the results confirm the hypothesis that ERs should always be accompanied by a L+H* pitch accent. Functionally, this distinguishes ERs from ‘normal’ reflexive pronouns. Furthermore, it seems that the underlying pitch accent is entirely consistent as L+H*, across semantic and syntactic classifications. This consistency

is due to the ER's requirement of eliciting focus alternatives, as discussed in Section 3.

5.3.2 Phrasing

Besides the results we have found with regard to pitch accent, there have also been some positive results on the ER and phrasing. First, non-AE ERs must be the nuclear pitch accent of the phrase.¹⁰ Second, and more interestingly, if the ER is in a non-grammatically licensed location in the sentence,¹¹ such as the PVE position with an object promoting verb, one must insert iP boundaries on either side of the the ER in order to rescue the grammaticality.¹²

- (142) a. *He collapsed himSELF/himself simultaneously.
b. He collapsed – himSELF/*himself – simultaneously.

How exactly this repairs the ungrammaticality is unclear to me, though I suspect these re-grammatical ERs are “misplaced” units that syntactically interact differently with the surrounding structure¹³ – especially considering the way in which ERs are licensed and bound. Such a theory whereby structures appear out of place but still in the syntactic derivation is argued for for parentheticals, which are exemplified below in (143). (McCawley 1982, Potts 2002, and others)

¹⁰Why are AEs exempt from this generalization? Is it perhaps again due to their unambiguous status as ERs?

¹¹This phrasing is purposefully vague – what is a grammatically licensed location? I expect that only positions which the associate DP has A-moved through will qualify. (Though the sentence's right edge seems to be available to ^{dp}ERs associated with subjects.) That is to say, non-grammatically licensed locations include PVEs after an object-promoting verb, and other more “freely” placed ERs.

¹²I am using the dash to orthographically represent an iP break.

¹³Or with elided material, as the case may be.

- (143) a. Frank has – I think – already received his money.
b. Sally – according to Alex – is a little eccentric.
c. Terry is – as the jury found – guilty.
d. Martha has – of course – let us down.

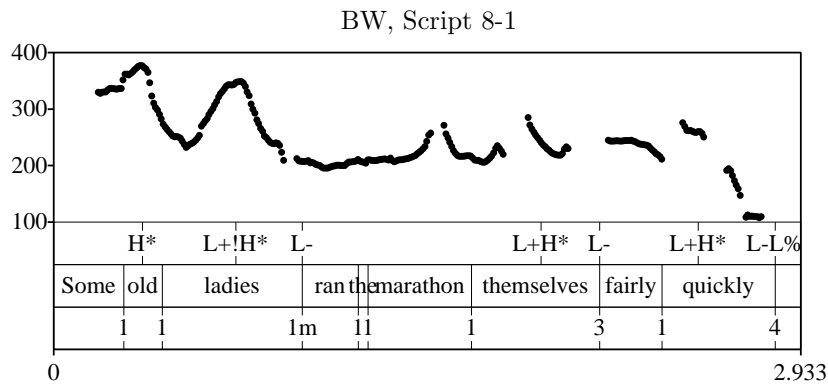
At its weakest, this re-grammaticalization data makes a prediction – wherever you use an iP boundary in producing an ER, that ER has a different status in the syntactic derivation than an ER without iP boundaries on either side. If this were not the case, PVEs after an object-promoting verb would *always* be ungrammatical, counter to fact. Furthermore, logically, you should be able to insert an ER with iP boundaries in any location.¹⁴

5.3.3 Correlate - QUID

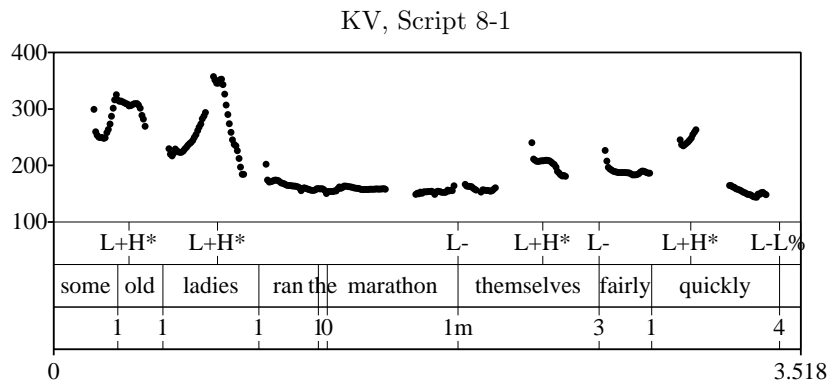
Occasionally in the data, there are examples of unexpected low targets surfacing right after a L+H*, as in (144)-(148). This drop in pitch cannot be predicted in MAE_ToBI without the use of a boundary tone; however, there was no obviously perceptible phrase break. For that reason, I use a 1m boundary. I refer to this phenomenon as a QUID (Quick Unexpected Intonational Drop).

¹⁴Perhaps as long as a phonological break is licit at that location in the first place. This should be tested and compared to other things that look like they have been inserted (e.g., “I think” and “you know”).

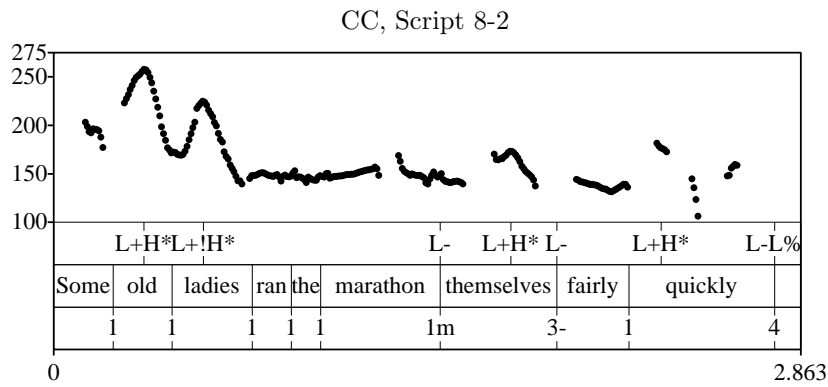
(144)



(145)

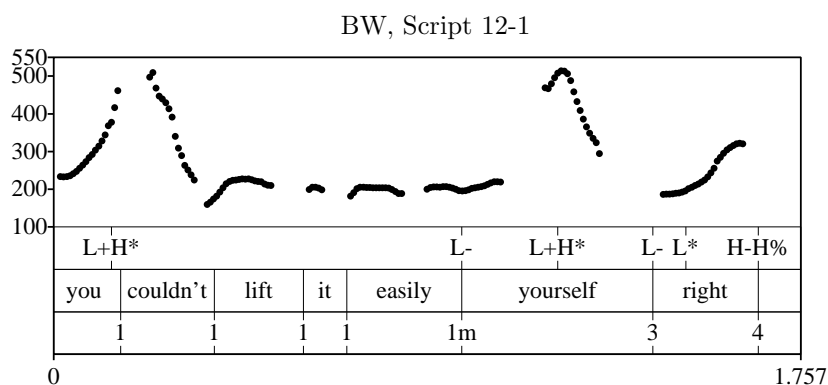


(146)

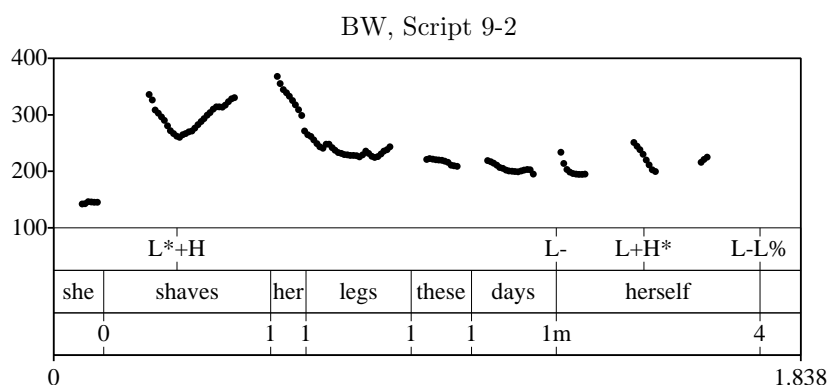


However, it is not just that script 8 leads to a QUID. For example, (147) and (148) are also good exemplars of QUIDs following a L+H* target.

(147)



(148)



I have brute-forced these QUID examples into my ToBI transcription by way of using a mismatch boundary (1m) bearing a L- tone. However, I don't necessarily believe there was ever any iP break intended, given consistency across speakers within a script, as in (144)-(146).¹⁵ In fact, for all recordings of "Some old ladies ran the marathon themselves fairly quickly", every single speaker places a QUID on/after "ladies" – do we really want to say that everyone is just making mistakes? Thus, I propose a new notation: superscript L on the tone that falls immediately after its realization, as in L+H^{*L}.¹⁶ The distribution of QUIDs is not limited to ERs, which seems to indicate that they are part of a wider set of phenomena and require

¹⁵I mean this 1m to not be an underlying iP break, as opposed to (140).

¹⁶I do not propose adding X*+L, as we find QUIDs after L+H*, meaning we would have to posit L+H*+L – a tritone, which does not seem to have any cross-linguistic support. (Jun, P.C.)

explanation in the intonational theory.

SECTION 6

Conclusion

6.1 Summary of the Findings

In investigating ERs, we have found that there are exactly two readings of ERs – the ^{dp}ER’s reading (“X, not Y”) and the ^{vp}ER’s reading (“without any help”). Each one obeys its own felicity conditions, like the Unique Identifiability Condition and the Contrastiveness Condition for ^{dp}ERs and the Volitional Agent Condition for ^{vp}ERs. Each one has a different semantic denotation, (basically) varying in the semantic type of the argument for the ID function. And, each one has its own syntactic licensing mechanism – stranding for ^{dp}ERs and fixed adverbial attachment for ^{vp}ERs.

Moreover, we found that some languages use real reflexive pronouns in ER constructions, and these reflexive pronouns (at least in English) follow the Binding Conditions. Binding Condition A is always met locally, since the configurations for ERs are always rather small, even if the ERs appear to be very distant in the linearized string.

Finally we found that ERs are necessarily marked with contrastive focus intonation, supporting our semantic theory that ERs must always be in focus. Even though we did find some cases (only about 15%) where the pitch accent on the ER was not L+H*, we concluded that the different cases were surface variants of L+H*.

6.2 Further Research

The semantic form and pragmatic constraints of ERs have long been studied, though their exact prosodic and syntactic nature have not fully been studied – least of all cross-linguistically. As such, there is much research yet to be done in these areas.

Furthermore, there were some specific phenomena/problems that I encountered in this paper that beg for more research. I have given some of these and pose the related questions that need answering in the sections below.

6.2.1 QUID

Further investigation of the Quick Unexpected Intonational Drops (QUIDs) such as those found in the course of this study may reveal more about the semantics/prosody interface. As mentioned in Section 5.3.3, the distribution of QUIDs is broader than just the examples in this paper. For more examples, let us briefly look at aspects of Jun 2001, (Ladd 1996:96) and Shilman 2006. Jun’s work explores examples similar to (149).

- (149) a. *John didn't hit Mary because she was yelling.*
 $L+H^{*L}$ $L+H^*$ $L-H^{\circ}$
 \Rightarrow ‘John hit Mary, but not because she was yelling.’
- b. *John didn't hit Mary because she was yelling.*
 H^* $!H^*$ $!H^*$ $(L-)$ H^* $!H^*$ $L-L^{\circ}$
 \Rightarrow ‘John didn’t hit Mary and that is because she was yelling.’

She shows that if there is a QUID on/after “John” and there is no iP boundary, the natural interpretation is that of (149a). However, without a QUID and with an iP boundary, the interpretation is that of (149b). Note that the readings are necessarily

tied to their respective prosodies.

Ladd briefly discusses the problem with “1m”, and cites the following example.

(150) *Edinburgh is the capitol of Scotland.*
 $H^{*L} \qquad (L+)H^* \quad L-L\%$

In (150), it is clear that there are no iP boundaries anywhere, yet the early drop is very natural (if not compulsory).

Finally, Shilman’s work shows that, in Motherese, there is often a quick drop, faster than there should be with interpolation. An example of this is given below.

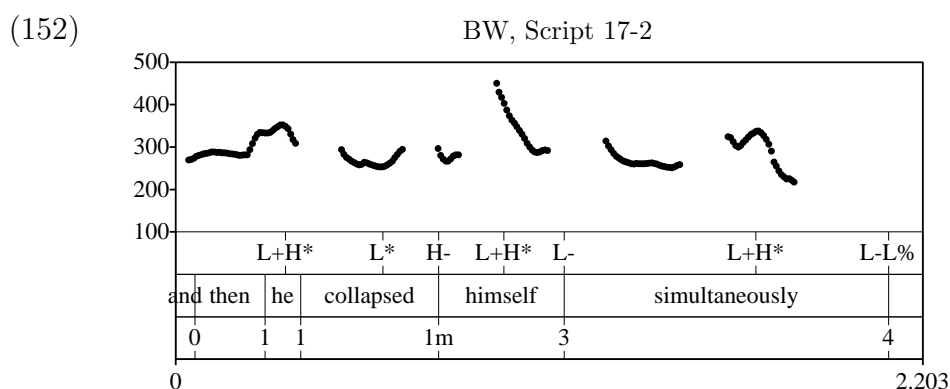
(151) *If you become a tree, said the bunny...*
 $L+H^{*L} \qquad L+H^* (L-) \qquad ?^* \qquad L-$

It seems to me that the unification between all of these is a pitch accent later on in the same iP, when there “shouldn’t be one.” By that I mean, in the region where there should be deaccenting due to presence of focus, there is something else that should be prominent. That said, it is not clear exactly what the licensing conditions for a QUID are.¹ In examples where the drop seems compulsory – for examples, certain ERs, (149) and (150) – it seems clear that there is a structural relationship involved. Further research into their shared syntactic or semantic properties is required. Moreover, the MAE_ToBI framework may need updating to be able to be able to model the melody type found in QUIDs.

¹Perhaps this might be a phonological effect on phonetic realization of the sort proposed in Ahn 2008, whereby syllables adjacent to the focus-tone bearing syllable (which would normally not carry **any** tone target) bear a tone target distinct from the focus-tone bearing syllable.

6.2.2 Parenthetical Prosody

Also in pursuing the prosodic nature of ERs, I found that certain ERs which I predicted to be ungrammatical were “re-grammaticalized” when surrounded by intonation-Phrase breaks. Not only were they surrounded by iP breaks, the pitch range during the production of the ERs was expanded or contracted, and then returned to normal when resuming the main sentence.



This yields a few questions. First, my intuition is that these feel like parentheticals, as I mention in Section 5.2.1. Before pursuing a syntactic/semantic analysis of ERs as being occasionally parenthetical, it would be fitting to first ascertain what the prosodic nature of parentheticals is. Furthermore, if a parenthetical does indeed employ a different pitch range inside its iP breaks, where does the pitch range “return” to? Specifically, does it maintain a maximum pitch ceiling in down-stepped high-tone contexts? Finally, if ERs are indeed sometimes acting as parentheticals do prosodically, what can we infer about the structure of ERs? In investigating these questions, the syntax-semantics-prosody interface will become better understood.

6.2.3 The Right Edge availability

It seems that the right edge of a sentence/clause is available to ^{dp}ERs, even though it's not entirely clear that the associate DP ever passed through a right-adjoined position.² If it is true that ERs are stranded in the sense of Sportiche (1988), then these ERs seem to tell us something about the internal structure of these clauses.

- (153) Sous-chefs always cook squid, but tonight the chef (^{dp}himself) cooked some (^{dp}himself).
- (154) Everyone else drove to school, but she (^{dp}herself) walked to school (^{dp}herself).
- (155) The designer likes the one on the right, but Sue-Ellen (^{dp}herself) likes the one on the left (^{dp}herself).
- (156) They ridiculed others for not living in the reality, but they (^{dp}themselves) were dreaming (^{dp}themselves).
- (157) While Kuri's dog was given meat, she (^{dp}herself) ate tofu (^{dp}herself).
- (158) Jack made Liz's mentor quit and then made Liz (^{dp}herself) quit (^{dp}herself).

Since it seems that the right-edge position is available in small clauses (158), the derivations for these data should not rely on structure beyond the predicate.

It has been suggested that the VP-internal subject position is actually right adjoining (Kitagawa 1986), deriving the right-edge position as (159). It has also been suggested that the lowest VP-internal subject position is above the highest object position (Hallman 2004), deriving the right-edge position as (160).

- (159) They [_{VP} did it [~~they~~ ^{dp}themselves]].

²or position linearized to be at the right edge.

(160) They did it [[they^{dp} themselves] did it].

Both of these analyses would be able to easily predict the availability of the right-edge position. However, the right edge isn't always available. In fact, it seems consistently unavailable for clauses in which the subject is not an external argument, as in the passive/middle/unaccusative examples in (161) and the *preoccupare* class examples in (162).

- (161) a. The beef dumplings were burned, but the beef (^{dp}itself) was perfectly cooked (*?^{dp}itself).
 b. The filling was still raw, but the pastry (^{dp}itself) cooked fine (*?^{dp}itself).
 c. Matt's friend stayed, but Matt (^{dp}himself) disappeared (*?^{dp}himself).
- (162) a. Jacob's twin seems OK, but Jacob (^{dp}himself) worries us (*?^{dp}himself).
 b. The keyboard is fine, but the computer (^{dp}itself) bothers me (*?^{dp}itself).
 c. Thinking about guns doesn't scare Teddy, but guns (^{dp}themselves) scare him (*?^{dp}themselves).

Additionally, this data seems to tell us that the right-edge position is only available to DPs that are external arguments, which should help us to understand their derivation.

6.2.4 Case and Stranding

It seems that there may be some correlation between phrasal/high case marking and inability to strand ^{dp}ERs. Japanese and Korean data support this idea.

- (163) Japanese: ✓FNQ, *ER-float/stranding
- a. *(futa-ri) dojjibooru ga (futa-ri) seito o (futa-ri) kizutsuke-ta*
 (2-CL) dodgeball NOM (2-CL) student ACC (2-CL) hurt-past
 the dodgeball hurt 2 students

- b. (**jishin*) *dojjibooru ga kouchou (jishin) o (*jishin) kizutsuke-ta*
 (^{dp}ER) dodgeball NOM principal (^{dp}ER) ACC (^{dp}ER) hurt-past
 the dodgeball hurt the principal himself.

(164) Korean: Restricted FNQ, *ER-float/stranding

- a. (**du-bun*) *pigu ka hagseng (du-bun) eul (du-bun) ttaelyeo-ss-da*
 (two-CL) student nom book (two-CL) acc (two-CL) hit-past-DECL
 ‘The student bought 2 books’
- b. (**casin*) *pigu ka gyojang (casin) eul ttaelyeo-ss-da*
 (^{dp}ER) dodgeball nom principal (^{dp}ER) acc hit-past-DECL
 ‘The dodgeball hit the principal’

This may be explained by saying phrasal case marking freezes a DP and disallows stranding.

Further research regarding how specific case-assigning mechanisms block or allow ER-stranding may elucidate micro-syntactic differences between case systems.

6.2.5 Passives

It seems to be the case that the passive and the ^{vp}ER are in complementary distribution.

(165) The dish was cooked by the Julia Child herself.

- a. ⇒ Her sous-chef didn’t cook the dish, ***Julia Child*** did it.
 b. ⇏ Julia Child did it without help.

(166) *The cake was baked herself by Julia Child.

Notably, if the Passive is derived in the way of Collins (2005), the behavior is unpredicted since the Voice head is still present and licensing an agent, thus satisfying the requirements of a ^{vp}ER. That is, unless the ungrammaticality isn’t coming from such a crash, but some other conflict.

Maybe the issue with passives is with the by-phrase (pronounced or not). Maybe there is competition between ^{VP}ERs and by-phrases for the same syntactic position.³ In fact, both ^{VP}ERs and by-phrases are about external arguments, and by-phrases – just like “by Nself” – can be related to either an agent or a causer.

It seems the ‘competition for the same spot’ theory hits a wall in Finnish, because there are no by-phrases in the language, but the ^{VP}ERs (which still occur in the PVE position (167a)) are not possible in passives (167c).⁴

- (167) a. *Joku jo-i shamppanja-n (ihan) itse*
 Someone drink-3PL champagne-ACC (DEG) self
 ‘Someone drank the champagne (all by) themselves.’
- b. *Shamppanja juo-tiin*
 Champagne drink-PASSIVE.PAST
 ‘The champagne was drunk all by themselves.’ / ‘Someone drank the champagne.’
- c. ??*Shamppanja juo-tiin ihan itse*
 Champagne drink-PASSIVE.PAST DEGREE self
 ‘The champagne was drunk all by themselves.’ / ‘Someone drank the champagne all by themselves.’

If it is not about structural overlap between ^{VP}ERs and the by-phrase, perhaps the issue is binding from passive subjects being marginalized.

- (168) a. ?✓A bonus was given by John to himself.
 b. *?A bonus was given to himself by John.

If the reflexive pronoun is not bind-able in (168a), it might explain why the ^{VP}ER interpretation is unavailable in (165). And if the reflexive pronoun is not bind-able

³Or maybe there is even just unacceptable overlap in the by-phrase and ^{VP}ER structures.

⁴The word *ihan* is a degree modifier and means something like ‘entirely’ or ‘quite.’ When used with *itse*, it forces the ^{VP}ER interpretation.

in (168b), it seems to follow that (166) would also force a Condition A violation.

The passive seems to share a relationship with ^{vp}ERs (notably with regard to the distribution of by-phrases and by-^{vp}ERs). Perhaps the two phenomena can work to help solve one another's problems.

Appendix A

Syntactic Derivations

The formalisms presented in this paper are not a technical exercise in bearing out facts in a single syntactic framework. Rather, the general theory should be extendable to other generative syntactic frameworks. I demonstrate this with derivations in three different frameworks; the differences between each are quite minimal.¹

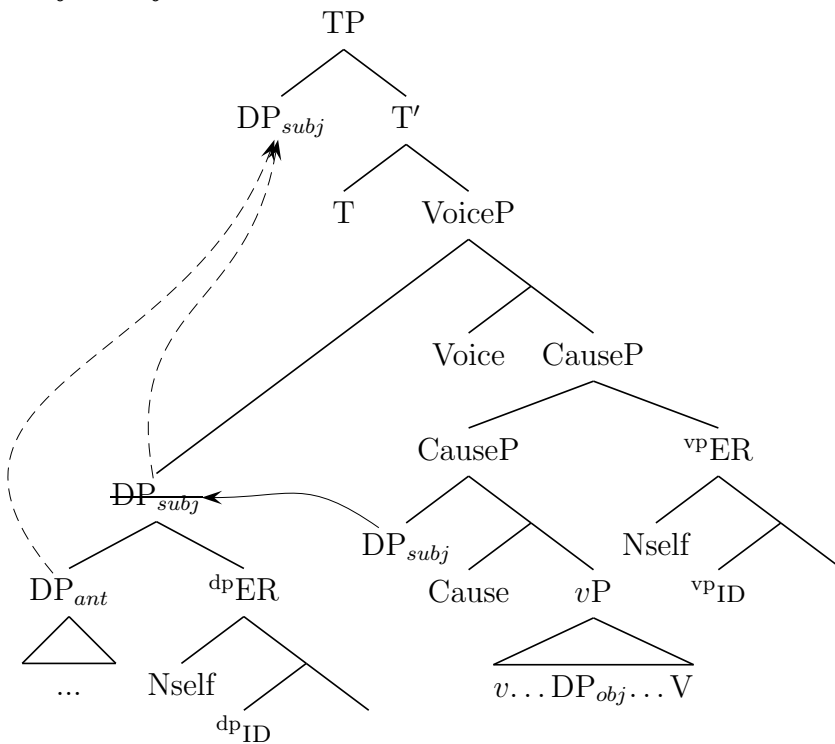
In all of these derivations, what remains constant is what is important for the syntactic theory of ERs. First and foremost, ERs are phrasal projections that contain an ID function and a semantically null reflexive pronoun. Second, ^{dp}ERs form a DP constituent with their associate DP which can be split up by A-movement of the smaller DP. And third, ^{vP}ERs are base-generated in a position such that they can take the Voice head as an argument and such that they are within the VPE site. These facts taken together with the denotation of ERs yield all the properties seen in this paper.

¹In all three tree, dotted lines indicate the possibility of stranding a ^{dp}ER lower down.

My Analysis

My analysis is rather thoroughly explained and motivated in Section 4. Recall that this analysis might have more to say about the gradient judgments of (a) ✓ *I froze the lake* ^{vp}*myself*, (b) ?* *The wind froze the lake* ^{vp}*itself*, and (c) ** *The lake froze* ^{vp}*itself*.

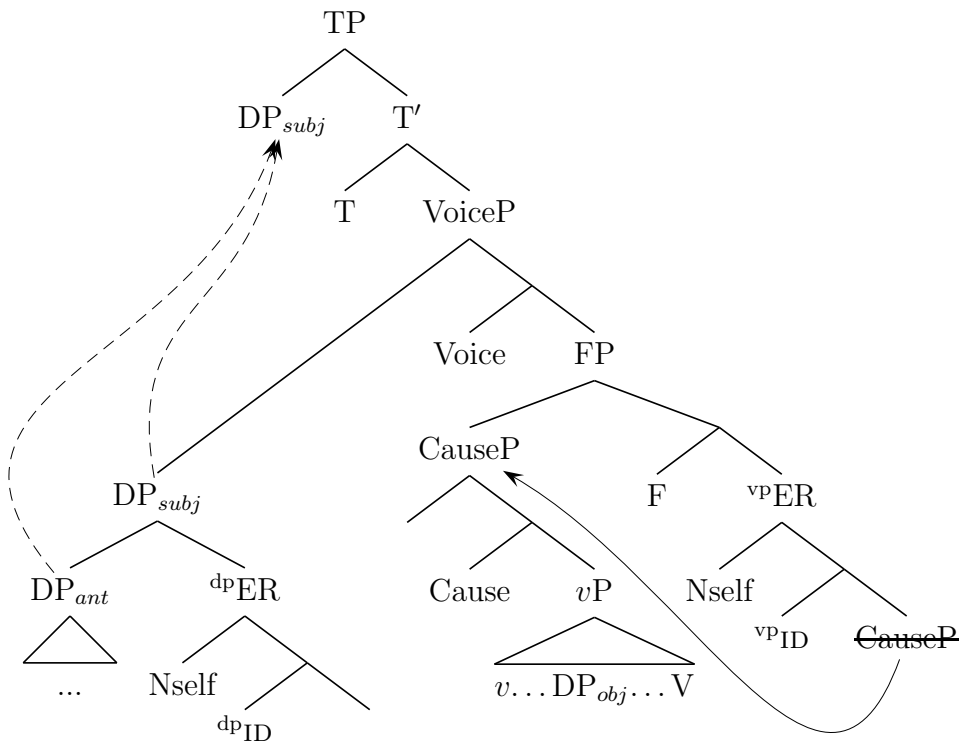
(1) My analysis



Antisymmetric Analysis

In the Antisymmetric analysis below, I argue that there must be some FP such that (a) the ^vP_{ER} can be on the spine between CauseP and VoiceP (for semantic reasons and to match the VPE data), and (b) the CauseP has a place to “roll-up” to, yielding correct word order with regard to the ^vP_{ER} being post-verbal. Perhaps this FP is the instrumental case marking element, as ^vP_{ER} often appear in instrumental case (e.g., Japanese, Arabic, etc)

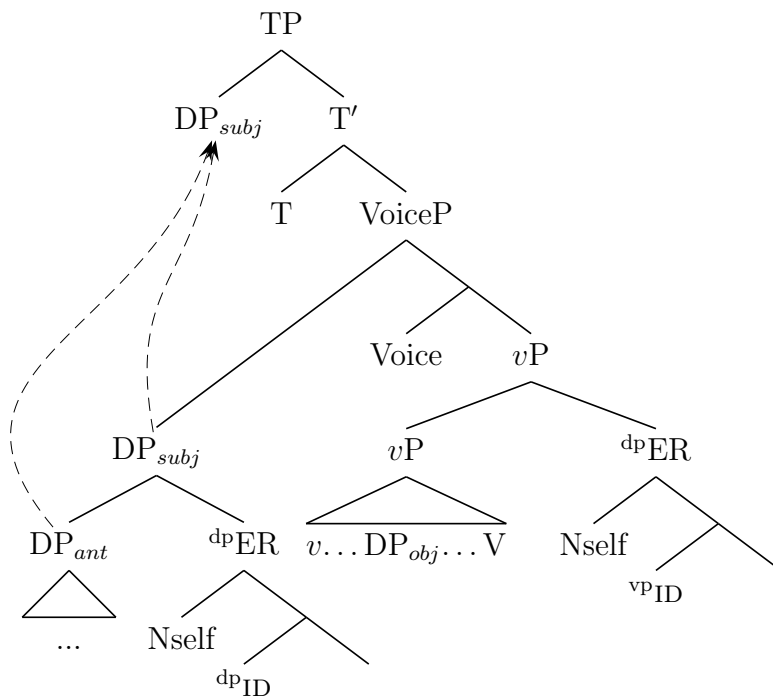
(2) Standard Antisymmetric analysis



Minimalist Analysis

In the Minimalist analysis, I have removed reference to any more than three VP shells. Three VP shells is actually sufficient, provided that the following two assumptions are met. First, there are different kinds of Voice which license different kinds of external arguments (Causer/Agent). Pylkkänen (2002) argues for just this. Secondly, there are always three verbal shells as to guarantee sister of Voice being the target of VPE. Merchant (2007) seems to assume verbal structure like this). However, one potential problem for an analysis like this one is that the semantics of ^vP_{ER}'s ID must be sensitive to the type of Voice head present in the derivation. How to implement this in the semantics is not entirely clear to me.

(3) Standard Minimalist analysis



Appendix B

Test Condition Scripts

- (1) A: I like watching the Simpsons.
B: Me too. I think it's a funny show.
A: But the babysitters don't like it.
B: Yeah, I know. They told the kids not to watch it.
→ A: Yeah, but guess what. They themselves were watching the Simpsons on the job.
B: Really?
A: Yeah, they shouldn't do that...
- (2) B: Guess who I saw today?
A: Who?
B: Ryan.
A: Oh yeah? Oh, you know how he runs an anti-steroid coalition?
B: Right.
A: Guess what I just heard.
B: What?
→ A: Ryan has used in the past himself.
B: But that just means he's matured and realized his mistakes.
A: That's probably true, I guess I didn't think of it like that.
- (3) B: What are you reading?
A: An article about racism in California today.
B: Yeah? What about racism?
A: "Who thinks Californians are racist?"
B: What did they find out?
→ A: Californians think so themselves apparently.
B: That's really surprising.
A: I thought so too.

- (4) A: Doesn't everyone think that you learn best from your mistakes?
 B: Probably. Why do you ask?
 → A: Well, Darren and Kate themselves never learn their lesson, even though they always try to tell their kids that.
 B: I think it's easy to say you need to learn from your mistakes...
 A: ...but it's not easy to do it, huh.
 B: Exactly.
- (5) A: I have the schedule of birthdays for our club.
 B: What's on it, besides just dates?
 A: It has who is baking for each event.
 B: All of us aren't taking turns, are we?
 → A: Yes we are. You will bake one yourself for Amy's birthday.
 B: Really? Even I'm baking? But I can't bake very well.
 A: I know, but no one else can do it that week...
- (6) B: I don't really like our teachers this year.
 A: Oh, you know how they always criticize people who drink?
 B: Mhm.
 A: Well guess what I saw them doing last night.
 B: What?
 → A: They were drinking at a bar themselves.
 B: What hypocrits.
 A: I know.
- (7) A: That celebrity I don't like wrote a book.
 B: Is it selling well?
 A: I dunno. I doubt she even read it.
 B: What do you mean?
 → A: I wonder if she herself has read the book, despite supposedly having written it.
 B: Oh, like she had a ghostwriter.
 A: Uh huh...
- (8) B: I can't imagine running a marathon.
 A: What do you mean? Anyone can run a marathon.
 B: I don't know about that...
 → A: Some old ladies ran the marathon themselves fairly quickly. I read it in the paper.
 B: Wow. So even they could do it, huh.
 A: Yeah. So you could too, I would think.
 B: I guess so.

- (9) B: Do all women shave their own legs?
A: No, some go to salons to get them done.
B: Does your wife go to a salon for it?
→ A: She shaves her legs these days herself. She won't go to a salon for it any more.
B: Do you know if it's hard to do?
A: No, but you do have to be careful not to cut yourself.
- (10) A: So have you met my upstairs neighbor?
B: No, I don't think I've met him – but I have heard him.
A: Oh right, isn't he so noisy?
B: Definitely.
A: Well, I woke up at 2 AM thinking he was playing a CD loudly, as usual...
B: Right...
→ A: But it turns out that he himself was playing music last night.
B: At 2 AM?
A: Yes!
B: Well, I hope he was good.
A: Not really...
- (11) B: I'd really like it if my mom would do my laundry still.
A: Well, now you're living on your own, and we're adults now.
B: I know.
→ A: You have to do that yourself after you leave home. You can't rely on others for these kinds of things any more.
B: But I'm so lazy.
A: I know, I'm so lazy too.
- (12) A: Sometimes I think of conundrums that have no answer.
B: Oh yeah? Like what?
A: Like... if you were all powerful, you would be able to create a stone so heavy that no one can lift it right?
B: I guess so.
→ A: But then you could make stone so heavy that you couldn't lift it easily yourself. Right?
B: You're weird.
A: Yeah, that's true.

- (13) A: Ugh, I hate radios.
B: What happened?
A: Well you know how the antenna has been on the fritz?
B: Uh huh...
→ A: Well, the radio broke itself last night, and I don't know what to do now.
B: Are you going to buy a new one?
A: I guess I have to...
- (14) A: I hear that Europeans, in general, don't trust their governments very much.
B: Well, they've had lots of deceitful governments in their past.
→ A: Right, but, as an American, I myself lean in another direction.
B: In what way?
A: I think that, for the most part, governments exist to help their citizens.
B: Well, you don't want to be too naive.
- (15) A: Did you hear that it was 20 degrees last night?
B: That's really cold for L.A.
A: I know.
B: Did the citrus fruit all freeze like it did last year?
→ A: The citrus trees froze last night themselves - it wasn't just the fruit.
B: Does that mean they'll have to plant whole new trees?
A: I'm not sure, but I'd think so.
B: That's awful.
- (16) A: Have you seen Jane in the past few years?
B: No, why?
A: Well, you know how her mother didn't lose much height in her old age?
B: Mhm.
→ A: Jane herself has shrunk quite a bit already.
B: How much shorter has she gotten?
A: A few inches so far.

- (17) A: Did you know I do voodoo?
B: Really? Does it actually work?
A: Yeah, it worked just last night.
B: What happened?
A: Well, I pushed over my voodoo doll of John...
B: Uh huh...
→ A: And then he collapsed himself simultaneously.
B: Really?
A: Yeah, you can ask John.
- (18) A: I feel like I'm losing everything.
B: Literally?
A: Yeah, so, first I lost my bike lock yesterday.
B: Right, I remember.
→ A: Now, the lock's keys have disappeared completely themselves.
B: I bet they're both in the same place.
A: If only I knew where that place was.
- (19) B: The chancellor never comes to these kinds of events.
A: Right, he usually just sends someone from his office.
B: That's lame.
→ A: Oh, but I heard he was seen at the last one himself.
B: I wonder why he went to that one.
A: Ya, I don't know. Maybe someone special was there.
B: Maybe.
- (20) B: I hear that our senator's advisors are upset with what he's doing.
A: What's going on now?
B: I dunno, I only read that in a headline; but he should listen to his advisors, right?
→ A: Well the senator himself was elected to the senate; his advisors weren't.
B: But it seems silly to have advisors if you don't listen to them.
A: I think everyone needs to think for themselves sometimes.
- (21) B: Are you part of the game of Assassins?
A: Yeah, I've gotten 5 people so far.
B: Has anyone shot anyone from John's team yet?
→ A: Uh-huh, in fact, John was shot himself recently.
B: Oh, too bad for him.
A: Well, that's how the game goes.

- (22) B: Did you hear about the scandal at the business school?
A: Yeah, the president was embezzling.
B: Isn't that pathetic?
→ A: Mhm. If you are fined for unethical behavior yourself, I wonder if you can teach ethics.
B: You'd have to if it's your job.
A: Yeah, I guess so.
- (23) A: Did you hear about Perry?
B: Yeah – about his bike, right?
A: Well not only did his bike get hit by a car last week...
B: Oh no, what happened now?
→ A: He himself was hit just last night.
B: Is he okay?
A: Yeah, the car wasn't going very fast.
- (24) A: I feel really bad for Tracy.
B: Why, what happened?
A: You know how her publisher was sued last week?
B: Uh-huh...
→ A: Well, she is being sued herself now.
B: Wow, what for?
A: I'm not sure, something about copyright infringement.

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