

A prosodic theory of possible ellipsis remnants

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Abstract We formulate a new generalization of the distribution of ellipsis remnants. Ellipsis cannot strand functional material to the exclusion of a potential prosodic host (*the Stranding Generalization*). Explaining the Stranding Generalization requires a theory of ellipsis in which the prosodic needs of ellipsis remnants can be taken into account. Drawing on Match Theory (Selkirk 2009; 2011), we develop an account which locates the computation of ellipsis in the syntax-prosody mapping. Specifically, ellipsis results from an optional reranking of a constraint (DESTRESS-GIVEN), which forces reduction of semantically recoverable material, over Match constraints governing the realization of syntactic elements in prosodic structure. The Stranding Generalization is shown to follow from independently motivated prosodic well-formedness constraints, which in the relevant cases cannot be reconciled with the ranking responsible for ellipsis. The broader implications of our analysis, if successful, is that it motivates a view of ellipsis whereby any constraints on ellipsis beyond semantic recoverability are the result of competition between candidates for the possible phonological output of the syntactic input.

Keywords: Syntax; Prosody; Ellipsis; Stranding Generalization; Match theory

1 Introduction

In PF-deletion theories, ellipsis is commonly taken to involve non-pronunciation of a constituent which is ‘given,’ i.e. made salient in the discourse. For example, sluicing (1a) is commonly taken to involve deletion of the complement of interrogative C (Lasnik 1999; Merchant 2001; Landau 2020), while VP ellipsis (1b) is commonly taken to be deletion of the complement of T (Merchant 2001; Aelbrecht 2010).

- (1) a. Lakshmi met someone, but I don’t know who ~~Lakshmi met~~.
b. Hari has been to Nepal, and Lakshmi has ~~been to Nepal~~ too.

In LF-copying theories, by contrast, the ellipsis site contains a null anaphor (Fiengo & May 1994; Chung, Ladusaw & McCloskey 1995; Fortin 2007). In the place of the silent pieces of structure in (1) are null pronouns, which are anaphoric to an expression in the discourse.

- (2) a. [Lakshmi met someone]_{*i*}, but I don’t know who *pro*_{*i*}.
b. Hari has [been to Nepal]_{*i*}, and Lakshmi has *pro*_{*i*} too.

In neither kind of theory is material in the ellipsis site expected to be active in the prosodic component. In LF-copying theories, this is simply because the ellipsis site is a silent pronoun. In PF-copying theories, deletion of constituents marked for ellipsis

takes place before the prosodic computation, if—as is commonly assumed—Vocabulary Insertion takes place prior to prosodification (Embick & Noyer 2001). However, it is in principle possible for material in the ellipsis to interact with the prosodic component, given different architectural assumptions. In this connection, we will argue for the following generalization, which directly implicates prosody in the computation of ellipsis:

(3) **The Stranding Generalization:**

Ellipsis cannot strand functional material to the exclusion of a potential prosodic host.

This condition makes crucial reference to prosodic representations. If the Stranding Generalization holds, it motivates an architecture for ellipsis in which the prosodic status of ellipsis remnants can be taken into account. We propose therefore to implement ‘PF-deletion’ directly in the syntax-prosody mapping (Bennett, Elfner & McCloskey 2019). Specifically, we propose that ellipsis involves a systematic violation of Match constraints (Selkirk 2009; 2011), which govern the mapping from syntactic to prosodic constituents. This arises from an optional reranking of a constraint—DESTRESS-GIVEN (Kratzer & Selkirk 2020)—which governs the reduction of given material. This is a direct implementation of the idea that ellipsis involves “radical deaccenting” of given material (Tancredi 1992).

This analysis has several broader consequences. We show that functional items behave, in important respects, as though their hosts are present, though eventually deleted. This constitutes strong evidence for fully articulated syntactic structure inside the ellipsis site. Our analysis also shows that in the right prosodic environments, given material can survive ellipsis, and provides a way to account for the tendency of focused material to resist deletion in a way that does not require movement out of the ellipsis site. Taken together, we believe this supports a theory of ellipsis in which the syntax-prosody mapping, not movement, is responsible for the distribution of ellipsis remnants (Bennett, Elfner & McCloskey 2019; Griffiths 2019).

In section 2, we will exemplify the Stranding Generalization; explain why it is a puzzle for many theories of ellipsis; and show that it cannot be explained by the Contrast Generalization, a putative condition requiring that ellipsis remnants contain contrastive focus. In section 3, we will argue for a theory that locates ellipsis at the syntax-prosody interface, and show that it derives the Stranding Generalization. In section 4, we explore some consequences of this theory, and conclude in section 5.

2 The Stranding Generalization

Pronouns, like most functional items, do not usually map to full prosodic words by themselves (Selkirk 1996; 2011; Truckenbrodt 1999; Elfner 2012). They commonly appear in ‘weak’ form, diagnosed in English by their lack of stress and corresponding vowel reduction, as in for example *seen-[əm]* (‘seen them’).¹ Itô & Mester (2009) argue that weak pronouns map to bare syllables, and phonologically cliticize² to adjacent prosodic words. Object pronouns cliticize to their left, for example to the verb in (4a). What we observe in the gapping construction in (4b) is that verb deletion cannot ‘strand’ the pronoun without its potential host. Here and below adverbials like *on Tuesday* are used to ensure the underlying presence of the verb in the second conjunct.

¹ Depending on the pronoun and the speaker, there may also be consonant deletion, as in this example.

² See section 3.2 for the details of phonological cliticization, which is not to be confused with syntactic cliticization.

- (4) a. I called Sheryl on Monday, and called her on Tuesday too.
 b. *I called Sheryl on Monday, and called her on Tuesday too.

Contrastively focused pronouns behave differently. When pronouns are contrastively focused, they do not cliticize, since they must themselves bear stress. This means that object pronouns can only appear in gapping constructions when contrastively focused.

- (5) I called $SHERYL_i$ on Monday, and HER_j/HIM_k on Tuesday.

Note that ‘it’, which for most speakers of English cannot bear stress (Cardinaletti & Starke (1999)), is therefore not able to be stranded in this environment:

- (6) I sold the CAR_i on Monday, and * IT_j on Tuesday.

Verb-particle constructions behave in the same way. When the verb and particle are adjacent, verb deletion cannot strand the particle.³

- (7) a. *Turn off the computer, and ~~turn~~ off the lights.
 b. Turn OFF the computer, and ON the lights.⁴

Outside of gapping, the Stranding Generalization holds in NP ellipsis. Possessor pronouns cliticize to the right, as most easily demonstrated by vowel reduction in non-rhotic Englishes (thus $[hə]$ book = ‘her book’). The Stranding Generalization then leads us to expect that NP ellipsis cannot strand an unstressed possessor pronoun. This is correct:

- (8) a. I played Nina Simone_i’s album in the car. Mei played her_i album at home.
 b. I played Nina Simone_i’s album in the car. *Mei played her(s)_i album at home.

Again, contrastive focus on the pronoun allows it to survive ellipsis (9a). But if other lexical material (such as an adjective) provides a host, a pronoun can appear even in the absence of contrastive focus (9b).

- (9) a. I played Nina Simone_i’s album in the car, and $HERS_j$ album at home.
 b. I played Nina Simone_i’s first album in the car, and her_i second album at home.

‘Portmanteau’ function complexes—like *usedta*, *wanna*, and *shoulda*—also conform to the Stranding Generalization. Itô & Mester (2009) argue—from the distribution of *r*-insertion—that they cliticize rightward, as feet. The Stranding Generalization predicts that they cannot be stranded by ellipsis of their host verb.

- (10) a. I wanna leave. Do you *wanna/want to leave?
 b. I shoulda left, and you *shoulda/should have left too.⁵

³ Here we don’t have evidence from vowel reduction that the particle has cliticized to the verb. Harley (2007), however, offers intriguing evidence in favor of a close prosodic relationship. She notes that particles are impossible with verbs—mostly Latinate in origin—with a weak-strong stress pattern, hence the contrast between *write up* and **compose up*. But eliminating the weak syllable allows a particle to appear (**confess up*/*’fess up*).

⁴ There is a preference for the object-particle order in these cases, but all speakers we consulted reported a clear contrast between (7a) and (7b).

⁵ Roger Schwarzschild (p.c) reports that *shoulda/usedta* can for him be stranded by ellipsis, though not **wanna*. One possible explanation is that *shoulda/usedta* in these cases are not portmanteau words, but contain very

2.1 Why is this a puzzle?

Although the Stranding Generalization seems at first glance unsurprising, it constitutes a genuine puzzle for many theories of ellipsis. The generalization seems to be that non-contrastive functional items require a prosodic host. But in other contexts, they are perfectly able to appear without such a host. Consider object pronouns again. The pronoun in (11a) has a verb to its left, and therefore cliticizes.⁶ But the pronouns in (11b–11c) have no material to their left. When the syntax delivers a structure with no possible prosodic host, an unreduced stress-bearing form is used. (11d–11e) shows the same pattern with possessor pronouns: when there is nothing to its right, the possessor pronoun appears in unreduced (in this case suppletive) form.

- (11) a. I remember-im leaving very vividly.
 b. Q: Do you think Malcolm will leave?
 A: Him/*-im leaving would surprise me.
 c. Him/*-im leaving, I remember very vividly.
 d. This is [hə] book (= her book).
 e. This book is hers.

So non-contrastive functional items have two possible realizations: a weak/reduced form when there is an available host; and a strong/unreduced form when there is no available host. The puzzle of the Stranding Generalization, then, is that the strong/unreduced form cannot be used, even when ellipsis has deprived functional material of a potential host.

This is a problem for LF-copying theories of ellipsis. According to these theories, ellipsis involves insertion of a null pronoun, which retrieves its meaning anaphorically from the discourse. Consider (8b), repeated here as (12). According to LF-copying theories, the ellipsis site consists of a null pronoun, anaphorically related to the noun in the antecedent. Since there is no appropriate prosodic host for the pronoun, the prediction is that the unreduced form is used.

- (12) I played Nina Simone_i's [album]_j in the car. *Mei played her(s)_i *pro*_j at home.

The same problem arises, though, for any PF-copying theory in which ellipsis precedes prosody. According to PF-copying theories, ellipsis sites contain syntactic structure, including potential prosodic hosts for functional material. But ellipsis is commonly assumed, though often implicitly, to take place before the prosodic computation takes place. If this is the case, then the input to the prosodic component will not contain the potential prosodic host in cases like (13). The prediction again is that the unreduced form will be used.

- (13) I played Nina Simone_i's album in the car. *Mei played her(s)_i album at home.

reduced auxiliaries *-a* ('have') and *-ta* ('to'). *Wanna* might then be unstranded because it is unambiguously a portmanteau word, perhaps because reduction of *to* cannot delete the consonant.

⁶ Here and below, we'll use notations like *-im* as a mnemonic for phonological cliticization. This is not intended as an accurate phonetic representation, since some speakers display vowel reduction without consonant deletion.

Thus, under many current theories, ellipsis is expected to derive a structure in which any potential prosodic host of functional material is missing, whether through deletion/non-pronunciation or insertion of a null element. Functional items, in other contexts, have an unreduced form that is used when there is no appropriate host to cliticize to. These theories therefore fail to predict the Stranding Generalization: an unreduced form should be an option, in the absence of material to cliticize to.

2.2 The Contrast Generalization

We have seen that one way for a functional item to avoid the Stranding Generalization is to be contrastively focused. It is therefore tempting to attribute the effects of the Stranding Generalization to a generalization like that in (14):

- (14) **Contrast Generalization** (to be rejected): Remnants of gapping must contain a contrastively focused element.

By ‘remnant’ we mean any constituent in the second conjunct which is not elided. A number of linguists have argued that gapping remnants must contrast with parallel antecedents (Kuno (1976); Féry & Hartmann (2005); Gengel (2007); Winkler (2011), among others). It might then be that the pronoun cannot appear in (15a) because it doesn’t satisfy the Contrast Generalization. This would be supported by the impossibility of a non-contrastive lexical noun phrase appearing in the same position (15b). The effects of the Stranding Generalization would then be attributed not to the prosodic needs of function words, but an independent requirement on their information structure. In this section we argue that this move will not work.⁷

- (15) a. *I called Sheryl on Monday, and ~~called~~ her on Tuesday too.
 b. %I called Sheryl on Monday, and ~~called~~ Sheryl on Tuesday too.⁸

Firstly, as indicated by the diacritic, not all speakers find a non-contrastive lexical noun phrase unacceptable out of the blue in (15b). More importantly, speakers uniformly accept it in contexts like the following:

- (16) a. Q: Who did you call this week, and when?
 A: I called Sheryl on Monday, and ~~called~~ Sheryl on Tuesday too.
 b. Last week, I called Li on Monday, and Jian on Tuesday. This week, I called Sheryl on Monday, and ~~called~~ Sheryl on Tuesday too.

We are not sure what it is about these contexts that makes these sentences acceptable. But in these contexts, constituents that do not contain a contrast—*Sheryl* in (16a–16b)—can appear as gapping remnants. This suggests that the speakers who accepted (15b) out of the blue were more easily able to accommodate the right context for given material to be repeated.

Crucially, although non-contrastive lexical noun phrases can appear in this position, pronouns cannot (17). This shows that *Sheryl* is not focused in (16a–16b). If this were

⁷ In what follows, the discussion will be focused on gapping constructions. We show in section 3.6 that other ellipsis types that have been argued to obey the Contrast Generalization, like pseudogapping and fragment answers, are subject to the same kinds of counterexamples.

⁸ We will assume in what follows that gapping involves low coordination at the vP level (Johnson 2017; Toosarvandani 2013). Any constituent that appears in the second conjunct is a remnant of gapping.

the case, we would expect a pronoun to be able to appear, since focused pronouns can be stranded by ellipsis. Thus, (16) and (17) show that a pronoun cannot be stranded by ellipsis of the verb, even in a context where a given noun phrase can appear. This shows that the Stranding Generalization does not fall out of the Contrast Generalization: pronouns are, in some sense, special.

- (17) a. Q: Who did you call this week, and when?
 A: I called Tim on Monday, and ~~called~~ Tim/*him⁹ on Tuesday too.
- b. Last week, I called Li on Monday, and ~~called~~ Jian on Tuesday. This week, I called Tim on Monday, and ~~called~~ Tim/*him on Tuesday too.¹⁰

The way the Stranding Generalization is formulated predicts that when pronouns do have an appropriate host, they can appear as gapping remnants, even when non-contrastive. This is correct: when a preposition is available for the pronoun to cliticize to, it can appear as a gapping remnant (18a–18b). Note the minimal pair of (18a) and (18c): although the pronouns in each are equally non-contrastive, the pronoun in the double object construction violates the Stranding Generalization, while the pronoun in the *to*-dative construction does not.

- (18) a. I sent a cake to Jian_i on Monday, and sent some wine to-im_i on Tuesday.
 b. I got a book from Jian_i on Monday, and got a letter from-im_i on Tuesday.
 c. *I sent Jian_i a cake on Monday, and sent him_i some wine on Tuesday.

The unacceptability of (18c) is not the result of a condition that requires the left edge specifically to bear a contrast. Non-contrastive material can appear at the left edge, so long as it does not violate the Stranding Generalization (19).

- (19) Q: Who did you sit behind this week?
 A: I sat behind Babar_i on Monday, and sat behind-im_i on Tuesday too.

The depictive in (20a) and the adverb in (20b) are further examples of non-contrastive remnants. They do not violate the Stranding Generalization because, like *Sheryl* above, they do not require a prosodic host.

- (20) a. The chef served the meat raw on Monday, and ~~served~~ the fish raw on Tuesday.
 b. She ran to the park quickly on Monday, and ~~ran~~ to the lake quickly on Tuesday.

One potential response is to suggest that the above non-contrastive remnants are actually part of a larger constituent that contains contrastive focus. For example, it might be argued that in (20a), the object and depictive form a constituent, [*the fish raw*]. Because this constituent contains the contrastively focused object *the fish*, the Contrast Generalization is satisfied. But even if such a constituent structure could be motivated in all the above examples, it could not explain the Stranding Generalization. If the Contrast Generalization could be satisfied by these constituents, then putting the contrast in the other element in this constituent should allow a pronoun to survive ellipsis. This is not the case: in (21a), contrasting the depictive does not allow an object pronoun to appear. The same logic carries over to the ditransitive example in (21b).

⁹ Here and below, marking a pronoun as unacceptable means either in weak or strong form.

¹⁰ Thanks to Roger Schwarzschild (p.c) for suggesting these very minimal pairs.

- (21) a. *The chef served the meat RAW on Monday, and it COOKED on Tuesday.
 b. *I sent Jian to MAŠA on Monday, and him to MEI on Tuesday.

We conclude that the Contrast Generalization does not hold. Although clearly some kind of contrast is required in gapping constructions, not every remnant needs to contain a contrast. Crucially, in environments where non-contrastive material is able to appear, function words like pronouns cannot. A function word can only appear as a gapping remnant when provided with an appropriate host: that is, when the Stranding Generalization is not violated.

In section 3 we will provide a theory of ellipsis that explains the Stranding Generalization, in conjunction with independently motivated prosodic constraints. First we will show that the patterns we have just described pose a significant problem for *Move and Delete* theories of ellipsis.

2.3 *Move and Delete theories*

Many current theories analyze ellipsis as involving deletion of a syntactic constituent at PF. The ability of constituents to survive ellipsis is then tied to prior movement out of the deleted constituent. In many cases, this requires so-called ‘exceptional’ movements, which do not occur in corresponding non-elided utterances. For example, gapping is commonly analyzed as involving something like vP ellipsis, after movement of remnants from the ellipsis site (22a). The movements in (22a) are not possible in non-elliptical utterances (22b).

- (22) a. I sent a cake to Jian on Monday, and [some wine_F]_j [to Mona]_k [sent $t_j t_k$] on Tuesday.
 b. *I sent a cake to Jian on Monday, and some wine to Mona gave on Tuesday.

Such theories almost always assume that it is focus that drives these movements (Jayaseelan 1990; Gengel 2007; Toosarvandani 2013). This is motivated by the Contrast Generalization (section 2.2), in gapping and other related ellipsis constructions, such as pseudo-gapping and fragment answers. This in turn has been argued to explain the exceptional nature of these movements. Boone (2014) and Weir (2015), for example, argue that they are ‘last-resort’ movements, made possible only to ensure that contrastively focused constituents do not remain in the ellipsis site.

However, we have seen that the Contrast Generalization does not hold. This is a significant problem for *Move and Delete* theories. For example, we saw that given constituents can, in some circumstances, be remnants of gapping constructions. *Move and Delete* theories therefore have to allow optional movement of given constituents like *to-im* in (23a). This means that movement out of ellipsis sites is not a last-resort phenomenon, nullifying the arguments of Boone (2014) and Weir (2015). It also makes it extremely difficult to account for the Stranding Generalization. It is not clear why optional movement would be allowed for *to-im* in (23a), and *Jian* in (23b), but not the pronoun in (23c). The relevant differences between them are prosodic, not syntactic.

- (23) a. I sent a cake to Jian on Monday, and [some wine_F]_j [to-im]_k [sent $t_j t_k$] on Tuesday.

- b. I sent Jian a cake on Monday, and [Jian]_k [some wine_F]_j [sent ~~t_j~~ ~~t_k~~] on Tuesday.¹¹
- c. *I sent a cake to Jian on Monday, and [him]_k [some wine_F]_j [sent ~~t_j~~ ~~t_k~~] on Tuesday.

The same difficulty extends to other varieties of ellipsis. For example, it has been argued that pseudogapping and fragment answers also involve last-resort movement of focused phrases out of an ellipsis site. It is possible to construct counterexamples to the Contrast Generalization in pseudogapping (24a) and fragment answers (24b).

- (24) a. Mary spent more time with John last week than Bill did with him all year.
- b. Q: What did you watch on Monday?
A: Fleabag.
Q: What did you watch on Tuesday?
A: Fleabag again.

Mirroring the gapping pattern precisely, a given pronoun cannot appear where a given lexical noun phrase can, unless the verb is also present. (25) is therefore another instance of the Stranding Generalization.

- (25) Q: What did you watch on Monday?
A: Fleabag.
Q: And what did you watch on Tuesday?
A: *It again.
A': I watched it again.

It is not clear how a Move and Delete theory could explain this phenomenon.¹² What is needed is a theory in which the prosodic status of remnants can be taken into account in the computation of ellipsis. In the next section, we develop such a theory. Although our discussion revolves around gapping, we believe that our account extends straightforwardly to pseudogapping and fragment answers.

3 The proposal

We have argued that ellipsis is subject to the Stranding Generalization, which prevents functional material from appearing without a prosodic host. That this generalization does not reduce to a contrast requirement is shown by contexts in which non-contrastive lexical material can appear, but non-contrastive functional material cannot. Furthermore, when non-contrastive functional material is provided an appropriate prosodic host—for example a preposition—it is able to serve as a gapping remnant. In this section we outline a new theory of the computation of ellipsis to explain this phenomenon.

One desideratum for this theory will be explaining the Stranding Generalization. Another desideratum, however, is to preserve the explanatory virtues of earlier theories, in particular those that explain the link between ellipsis and *givenness*. We will therefore

¹¹ As in the cases in section 2.2, this requires a particular context, e.g. a question like “Who did you send what on which day?”

¹² See also Ott & Struckmeier (2018), who argue against Move and Delete theories based on the behavior of German modal particles, which are unable to move but can nevertheless serve as remnants of clausal ellipsis.

pursue the idea that ellipsis is a form of ‘radical deaccenting’ of given material (Tancredi 1992), where by ‘given’ we mean semantically recoverable from the discourse. The deaccenting of given material takes place in the syntax-prosody mapping. This is also a component in which notions such as ‘prosodic host’ can be defined, which is necessary for an explanation of the Stranding Generalization. The syntax-prosody mapping, then, is a natural place for the computation of ellipsis, and we will pursue this possibility in what follows.

The account will be couched within Match Theory (Selkirk 2009; 2011), which provides a set of violable constraints governing the mapping from syntactic constituents to prosodic constituents. We will argue that ellipsis involves the systematic violation of Match constraints, as a way to satisfy the independent pressure to reduce given material. This will arise from an optional reranking between a Match constraint and a constraint governing givenness deaccenting. In this computation, given functional material will have to satisfy independent prosodic constraints. If it is able to satisfy them, it will be able to survive ellipsis. If not, it will have to delete.¹³

3.1 Match Theory

We begin by briefly introducing Match Theory (Selkirk 2009; 2011), which is an ‘indirect reference’ theory. Indirect reference theories posit that the syntax-prosody mapping is governed by two competing forces: the pressure for the prosody to transparently reflect syntactic structure; and independent prosodic well-formedness constraints.

The pressure to reflect syntactic structure stems from Match Constraints, which force syntactic elements to map to categories in the prosodic hierarchy in (26).

(26) Prosodic Hierarchy

ι	Intonational phrase
ϕ	Phonological phrase
ω	Phonological word
F	Foot
σ	Syllable

These Match Constraints are informally as follows:

- (27) a. MATCH CLAUSE: CPs/clauses correspond to ι (intonational phrases).
 b. MATCH PHRASE: XPs corresponds to ϕ (phonological phrases).
 c. MATCH WORD: X^0 s correspond to ω (phonological words).

However, these constraints can be outranked by prosodic well-formedness constraints. For example, there have been argued to be constraints forcing ϕ s to be both minimally

¹³ As above, the discussion will be centered around gapping constructions, but we believe that the analysis can be carried over to other ellipsis varieties like pseudogapping and fragment answers (we provide relevant data about these constructions in section 2.3).

binary (BINMIN) and maximally binary (BINMAX). If such constraints outrank MATCH PHRASE, the output will not transparently match the syntactic structure. For example, in (28), the need to satisfy BINMIN prevents the DP *dogs* from mapping to ϕ . According to Match Theory, syntax-prosody mismatches arise out of interactions like these between Match constraints and prosodic well-formedness constraints. In the next sections, we will briefly introduce relevant constraints governing the prosodic behavior of function words, given material, and focused material.

(28)

	[_{DP} dogs]	BINMIN	MATCHPH
a.	(ϕ (ω dogs))	*!	
b.	(ω dogs)		*

3.2 Function words

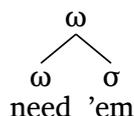
Function words generally fail to map to ω . As a result, it is common to assume that MATCH WORD only applies to lexical words (Selkirk 2011). However, we will follow Tyler (2019), who argues that failure of function words to map to ω is instead a syntax-prosody mismatch of the sort just outlined. Specifically, he argues that many function words have violable prosodic subcategorization frames (Zec 2005; Bennett, Harizanov & Henderson 2018). For instance, he argues that object pronouns have the subcategorization (henceforth SUBCAT) frame in (29).

(29) *Left-cliticizing SUBCAT frame:*

$$(\omega [\dots] (\sigma D^0))$$

This SUBCAT frame requires that the pronoun have as its mother a node of category ω , and material within ω to its left. This requirement is satisfied by the structure in (30).

(30)



A SUBCAT constraint will assign a violation mark to every pronoun that fails to map to the structure in (30).¹⁴ If this constraint outranks MATCH WORD¹⁵ and MATCH PHRASE, the pronoun will always cliticize when possible (31).¹⁶ Candidates (a–c) are ruled out by

¹⁴ There may be differences among speakers and registers in the degree of reduction weak pronouns undergo. For example, consonant deletion in *him* is less likely in careful speech. This is consistent with the structure in (30) so long as the pronoun doesn't receive lexical stress.

¹⁵ Sometimes constraints like MATCH WORD are separated into a MAX-like constraint—which punish candidates in which syntactic elements don't have a correspondent in the prosody—and a DEP-like constraint, which punishes candidates in which prosodic elements have no corresponding element in the syntax. Note that if we did this for MATCH WORD, the structure in (30) would violate both syntax-prosody ('MAX') and prosody-syntax ('DEP') mapping constraints. The maximal ω node does not correspond to any syntactic X^0 , while the pronoun/ D^0 does not have a corresponding ω in the prosody. Because this holds for every instance of cliticization, we will use MATCH WORD as a cover constraint.

¹⁶ Typographic note: any material not enclosed in (ω) maps to something below ω ; in all the following cases this is to a syllable. Thus candidate (31e) represents the structure for a weak/reduced structure given in (30).

SUBCAT: in (a) and (c), the pronoun has not cliticized at all; in (b) it has cliticized, but to ϕ instead of ω . Among the candidates that satisfy SUBCAT, the more Match-compliant candidate (e) wins, because candidate (d) unnecessarily fails to map the verb to ω . The result, therefore, is cliticization of the pronoun, as in (30).

(31)

	[_{VP} need them]	SUBCAT	MATCHW	MATCHPH
a.	(ϕ (ω need) (ω them))	*!		
b.	(ϕ (ω need) them)	*!	*	
c.	(ω (ω need) (ω them))	*!	*	*
d.	(ω need them)		***!	*
e.	\Rightarrow (ω (ω need) them)		**	*

As noted in section 2, the syntax will sometimes deliver a structure in which there is no appropriate host for a functional item. This receives a simple explanation in Tyler's system: since there is no candidate in which SUBCAT is not violated, the most Match-compliant candidate wins (32). The pronoun will map to ω , and as a result it will be stressed. Thus, the use of the unreduced non-contrastive pronoun is an 'emergence of the unmarked' effect.

(32)

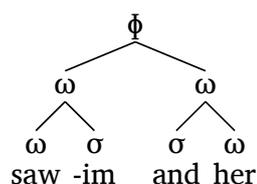
	[_{DP} him leaving...]	SUBCAT	MATCHW
a.	(ω him (ω leaving))	*	*!
b.	\Rightarrow (ϕ (ω him) (ω leaving))	*	

A further fact about the prosodic behavior of object pronouns is that they cannot cliticize when embedded inside a conjunction, even when there is a linearly adjacent host.

- (33) a. *Mary and-im left (cf. Mary and him left).
 b. *for[-im and Mary] (cf. for [him and Mary])
 c. *saw[-im and Mary] (cf. saw [him and Mary])

We therefore need a way to rule out a parse like (34).

(34)



This shows that Tyler's (2019) SUBCAT constrain for object pronouns is not quite sufficient. Note that what seems to be relevant here is the presence or absence of a syntactic relationship between V/P and the pronoun. Verbs and prepositions select and assign case

to their complement pronouns; there is no such relationship between either V/P and a pronoun conjunct, or between *and* and a pronoun. We will simply build this into the SUBCAT constraint: (35) now says that when a verb or preposition assigns case to a pronoun, the pronoun must be dominated by the ω node of the verb/preposition.

- (35) *Object pronoun SUBCAT frame*, revised:
 $[\omega [V_{\text{case}}/P_{\text{case}}] D_{\text{case}}^0]$

This revised SUBCAT has the effect of preserving a syntactic relationship in the prosodic structure. Interestingly, all of the SUBCAT constraints that Tyler (2019) posits potentially have this flavor. For example, determiners and possessors cliticize to the right, within the noun phrase, while object pronouns cliticize leftward to their case-assigning verbs/prepositions. Seen from this angle, they bear a strong resemblance to other constraints that have been argued to preserve syntactic relationships in the prosodic structure. For example, Richards (2016) proposes a family of Contiguity constraints, which force the prosody to reflect syntactic relations such as selectional and Probe/Goal relations. Similarly, Clemens (2014) argues for an ARGUMENT- ϕ constraint, which forces verbs and their arguments to phrase together.

The behavior of reflexives is illustrative: we might expect the accusative pronominal component of a (3rd person) reflexive¹⁷ to behave like other accusative pronouns, and cliticize to the left. However, they cliticize rightward onto *self/selves*, as diagnosed by vowel reduction; this is shown by the exempt anaphor in (36). This suggests that lexical items like *them* do not have SUBCAT constraints, but rather are subject to a more general desire to preserve syntactic relations in the word-level prosody. We will, however, continue to use SUBCAT constraints, and leave the possibility of deriving them from more general principles to future work.

- (36) [Thəm]selves aside, Peter and Scott don't tolerate hypocrites.

3.3 Focus

When a functional item is contrastively focused, there is no cliticization onto adjacent elements. This can be explained by a constraint like STRESS-FOCUS, adapted from Truckenbrodt (2006).

- (37) STRESS-FOCUS: A contrastively focused element must contain phrasal stress.¹⁸

This constraint will require pronouns to map to ϕ in order to bear a pitch accent.¹⁹ (38a) thus establishes the ranking STRESS-FOCUS \gg SUBCAT (38b).

¹⁷ Ahn & Kalin (2018) show that the pronoun is separable from the rest of the reflexive, e.g. *his own damn self*, with loss of accusative case. This means anaphors cannot be analyzed as single lexical items.

¹⁸ Alternatively, STRESS-FOCUS could simply specify that foci map to ϕ , as suggested to us by Roger Schwarzschild (p.c). Note that in either case, another constraint will also be required to ensure that the last focused element bears nuclear stress.

¹⁹ An exception to this is second-occurrence focus, where pronouns only map to ω . Cliticization is still impossible in second-occurrence focus, as first noted for English by San Tunstall and reported in von Stechow (1994).

- (38) a. She praised (HIM)_ϕ, not (HER)_ϕ.
b.

	[_{VP} praised [_{HIM}] _F]	STRESS _F	SUBCAT
a.	(_ω praised) (_ϕ him)		*
b.	(_ω praised) him))	*!	

3.4 Givenness

We call an element ‘given’ if it denotes an individual, a property, a relation or a proposition that has been made salient in the preceding discourse.²⁰ Elements that are given have a strong tendency to avoid prosodic prominence. There are a number of theories that aim to explain this behavior. We will utilize an adjusted version of Kratzer and Selkirk’s (2020) implementation. They propose DEPHRASE-GIVEN, which prevents Given elements from mapping to ϕ .

- (39) DEPHRASE-GIVEN: A G-marked constituent corresponds to a prosodic constituent which is not a ϕ and contains no ϕ . (Kratzer & Selkirk (2020))

With the ranking DEPHRASE-GIVEN \gg MATCH PHRASE, Given constituents will be forced to map to ω (or lower), and therefore be unable to bear pitch accent.²¹ This explains their lack of prosodic prominence.

- (40) a. When did John’s mother praise him? She praised John on Monday.
b.

	[_{VP} praised _G [_{DP} John] _G]	DEPHRASE _G	MATCHPH
a.	(_ω praised) (_ϕ John)	*!	
b.	(_ω praised) (_ω John)		*

In a system with both DEPHRASE-GIVEN and STRESS-FOCUS, examples like (41a) establish the ranking STRESS-FOCUS \gg DEPHRASE-GIVEN.²²

- (41) a. Q: Who did John_i’s mother praise?
A: She praised [_{HIM}_i]_F
b.

	[_{VP} praised _G [_{DP} him _G] _F]	STRESS _F	DEPHRASE _G	MATCHPH
a.	(_ω praised) (_ϕ him)		*	
b.	(_ω praised) (_ω him)	*!		*

²⁰ This is an informal characterization. For more precision, see Schwarzschild (1999); Buring (2016); Wagner (2012), among others.

²¹ Though given subjects may receive a pitch accent. Kratzer & Selkirk (2020) analyze pitch accents in such cases as marking the boundary of ι .

²² Roger Schwarzschild (p.c) points out, however, that this gives the wrong prediction for second-occurrence focus, in which foci within a given constituent do not receive a pitch accent.

Note that DEPHRASE-GIVEN as formulated by Kratzer and Selkirk applies only to given phrases. It is silent on the status of given words. Sub-phrasal elements, however, can be Given too. We therefore propose to generalize DEPHRASE-GIVEN as in (42), so that given elements avoid any kind of stress. Just as given constituents avoid phrasal stress, given words avoid lexical stress.

- (42) DESTRESS-GIVEN (replaces DEPHRASE-GIVEN in (39)):
 A G-marked XP corresponds to a prosodic constituent which is not a ϕ and contains no ϕ .
 A G-marked X^0 corresponds to a prosodic constituent which is not a ω , and contains no ω .

3.5 Ellipsis

If this form of DESTRESS-GIVEN is dominated by MATCH WORD, there will be no ellipsis (43b). Candidates (c–e), with given elements deleted entirely, are ruled out by MATCH WORD, since the verb and/or object do not have a corresponding ω . The result therefore is deaccenting as usual.

- (43) a. John's mother praised him on Monday, and **praised him** on Tuesday too.
 b.

	[_{VP} praised _G [_{DP} him _G] _G]	MATCHW	DESTRESSG	MATCHPH
a.	(ω praised) (ϕ him)		***!	
b.	(ω praised) (ω him)		**	*
c.	(ω praised)	*!	*	*
d.	(ω him)	*!	*	*
e.	\emptyset	***!		*

However, if the ranking is instead DESTRESS-GIVEN \gg MATCH WORD, G-marked words will be barred from mapping to ω . Our central proposal is that ellipsis arises from an optional reranking, in which DESTRESS-GIVEN dominates MATCH WORD.²³ Because all of the material in the input to (44b) is given, pronouncing any of it will violate DESTRESS-GIVEN. Deleting the given material, though it violates Match constraints, is thereby forced by the ranking DESTRESS-GIVEN \gg MATCH WORD. This is therefore a direct implementation of Tancredi's 1992 proposal that ellipsis is the "radical deaccenting" of given material.

²³ For optional reranking of constraints see Orgun (1996); Anttila (2002); Inkelas & Zoll (2007; 2009).

- (44) a. John’s mother praised him on Monday, and ~~praised him~~ on Tuesday too.
b.

	[_{VP} praised _G [_{DP} him _G] _G]	DESTRESSG	MATCHW	MATCHPH
a.	(_ω praised) (_φ him)	***!		
b.	(_ω praised) (_ω him)	**!		*
c.	(_ω praised)	*!	*	*
d.	(_ω him)	*!	*	*
e.	☞ ∅		**	*

The effect of this ranking depends on the realization possibilities of each lexical item. Crucially, many G-marked function words will not have to delete in order to satisfy DESTRESS-GIVEN. That is because they will be able to satisfy DESTRESS-GIVEN by cliticizing onto adjacent material, if available. Cliticized elements typically map to σ , thereby lacking stress and satisfying DESTRESS-GIVEN. Lexical words, however, systematically lack the option of cliticizing to adjacent material.²⁴ If DESTRESS-GIVEN dominates MATCH WORD, then, G-marked lexical words will have to delete.

3.6 Back to the Stranding Generalization

The Stranding Generalization says that functional items cannot be stranded by ellipsis without their (potential) prosodic host. This means that an accusative pronoun cannot be stranded by deletion of the verb, but can appear if supported by e.g. a preposition. We can now see how this theory of ellipsis explains the Stranding Generalization. Crucially, when ellipsis is evaluated at the syntax-prosody interface, there will be candidates in which potential prosodic hosts like verbs are present. As a result, SUBCAT constraints will play an active role.²⁵

Consider the ungrammatical example in (45a). In (45b) we have the ranking DESTRESS-GIVEN \gg MATCH WORD, which is responsible for ellipsis. In the absence of ellipsis, we would expect candidate (e), since it satisfies SUBCAT. But here pronunciation of the verb is ruled out by DESTRESS-GIVEN. Any structure without the verb, however, will violate SUBCAT (candidates b–d). That candidate (d) is a violation of SubCat, recall, was motivated by the data in 33). The only way, then, to satisfy both DESTRESS-GIVEN and SUBCAT, is to delete both the verb and the pronoun.²⁶

- (45) a. *I saw John_i on Monday, and saw him_i on Wednesday.
b.

²⁴ This is true for English, and is also potentially a universal. Tyler (2019: p. 26) notes a few possible counterexamples, such as prosodically weak/proclitic verbs in Chamorro (Chung 2003), and speculates as to why this possibility is rare or unattested.

²⁵ This is unlike cases in which the syntax simply does not provide a potential host, such as “Him leaving, I remembered.” We saw in (32) that in such cases, SUBCAT is irrelevant, because there are no candidates in which it can be satisfied.

²⁶ We assume that deletion of both elements vacuously satisfies SUBCAT.

[_{VP} saw _G [_{DP} him] _G]	SUBCAT	DESTRESSG	MATCHW
a. \varnothing			**
b. (him)	*!		**
c. (_{ω} him)	*!	*!	*
d. (_{ω} and him)	*!		*
e. (_{ω} (_{ω} saw) him)		*!	*

Thus, the impossibility of stranding the pronoun falls out from an irreconcilable conflict between satisfying DESTRESS-GIVEN and satisfying SUBCAT. This explains why G-marked lexical noun phrases can survive deletion of the verb: they do not have SUBCAT requirements. DESTRESS-GIVEN will force a G-marked phrase to map to ω , instead of ϕ . But since there is no conflict with SUBCAT, they are eligible gapping remnants.²⁷

- (46) a. I saw John on Monday, Mary on Tuesday, and **saw John** on Wednesday.
b.

[_{VP} saw _G [_{DP} John] _G]	SUBCAT	DESTRESSG	MATCHW	MATCHPH
a. \varnothing (_{ω} John)			*	**
b. (_{ϕ} John)		*!	*	*
c. (_{ϕ} (_{ω} saw) (_{ω} John))		*!		*

This also explains why given pronouns can serve as gapping remnants when they cliticize to a preposition. The preposition allows the pronoun to satisfy DESTRESS-GIVEN and SUBCAT simultaneously.

- (47) a. I sent a cake to Jian on Monday, and ~~sent some wine to~~ **him** on Tuesday.
b.

[_{PP} to him _G]	SUBCAT	DESTRESSG	MATCHW
a. \varnothing (_{ω} (_{ω} to) him)			*
b. (_{ω} (_{ω} to) (_{ω} him))	*!	*!	

And finally, the ranking STRESS-FOCUS \gg SUBCAT guarantees that contrastively focused pronouns—and contrastively focused material in general—will be realized.²⁸ STRESS-FOCUS rules out the SUBCAT-compliant candidate in (d), as well as the Match-compliant candidate in (e). DESTRESS-GIVEN will ensure that the verb is elided, ruling out (c), which would win with the alternative ranking MATCH WORD \gg DESTRESS-GIVEN. Satisfying DESTRESS-GIVEN and SUBCAT by deleting both the verb and pronoun is ruled out by STRESS-FOCUS. Thus, the verb will delete and the pronoun will map to ϕ (candidate a); satisfying STRESS-FOCUS will necessarily lead to a violation of SUBCAT.

²⁷ Roger Schwarzschild (p.c) points out that (46b) predicts that deletion of *John* is impossible, since it will incur an extra violation of MATCH WORD. We assume that the input can always contain a pronoun, *him*, instead of a second instance of *John*; this makes ellipsis possible.

²⁸ The account therefore predicts the kind of data that motivated the Contrast Condition.

- (48) a. I saw HER on Monday, and **saw HIM** on Tuesday.
 b.

[_{VP} saw _G [_{DP} HIM] _F]	SF	SubC	DG	MW	MP
a. $\text{E} \text{ } (\phi \text{ him})$		*		*	*
b. \emptyset	*!			**	**
c. $(\phi \text{ } (\omega \text{ saw}) (\phi \text{ him}))$		*	*!		
d. $(\phi \text{ } (\omega \text{ saw}) \text{ him}))$	*!		*	*	*
e. $(\phi \text{ } (\omega \text{ saw}) (\omega \text{ him}))$	*!	*	*		

We thus have the following constraint ranking for ellipsis:

- (49) STRESS-FOCUS \gg SUBCAT, DESTRESS-GIVEN \gg MATCH WORD, MATCH PHRASE

The only novel ranking is DESTRESS-GIVEN \gg MATCH WORD, which is the current proposal for the computation of ellipsis. The effects of the Stranding Generalization then fall out from the effects of STRESS-FOCUS and SUBCAT, which are motivated independently of ellipsis.

3.7 Constituency conditions

As Johnson (2017) notes, gapping cannot just elide any string. For example, he cites the following, from Hankamer (1979):

- (50) a. Charley writes with a pencil and John writes with a pen.
 b. *Charley writes with a pencil and John ~~writes with~~ a pen.
 c. *Charley writes with a pencil and John ~~writes with a~~ pen.

These and other similar cases led him to formulate the following condition on gapping remnants:

- (51) Constituency Condition on Remnants

Let P(x) be a parse for a string x. If A is a string of words in a coordinate, from which the substring B has Gapped leaving the string C, then there must be away of factoring C into a series of maximal projections found in P(A).

Something like (51) would follow from a theory in which remnants have moved out of the ellipsis site. Since the present theory does not rely on movement, it is important to show that it does not overgenerate. There thus must be high-ranked prosodic well-formedness constraints that rule out unacceptable strings like those in (50).

In fact, many of them straightforwardly follow from independently motivated SUBCAT constraints. For example, the determiner *a* prosodically cliticizes to the right (Itô & Mester 2009), diagnosed again by vowel reduction. This requires a rightward cliticizing SUBCAT frame.

(52) SUBCAT frame for a: [_ω D⁰ [...]]

From this it follows, following the same logic as previously, that *pen* cannot serve as a gapping remnant to the exclusion of the determiner. Because the determiner is in the input, candidates will be evaluated with respect to its SUBCAT constraint. SUBCAT will make determiners and their hosts behave as a unit, just as verbs and accusative pronouns do. They will therefore either be pronounced together, or deleted together (though deletion in this case is ruled out by STRESS-FOCUS).

- (53) a. Charley writes with a pencil, and John ~~writes with~~ a PEN.
b.

[_{DP} a PEN _F]	STRESSF	SUBCAT	DESTRESSG	MATCHW
a. ϕ (_ω a) (_ϕ pen))				*
b. (_ϕ (_ω a) pen))	*!			*
c. (_ϕ pen)		*!		*
d. (_ω pen)	*!	*		
e. (_ω a)	*!	*		*

This explanation carries over without modification to cases like (54). We saw in section 2 that possessor pronouns cliticize to the right. Vowel reduction also shows rightward cliticization of *some* and *the*. SUBCAT will then rule out deletion of their potential hosts. There is no clear evidence that *every* cliticizes. We suggest that SUBCAT is a general constraint that applies to all determiners: this would mean that *every* cliticizes as a foot, as Itô & Mester (2009) argue for portmanteau function complexes.

- (54) a. *Some people remember your mother and others ~~remember your~~ father.
b. *Some people brought the package and others ~~brought the~~ wrapper.
c. *Some people brought some packages and others ~~brought some~~ wrappers.
d. *Some brought every package and others ~~brought every~~ wrapper.

Finally, it also extends to the following contrast, originally from Ross (1970):

- (55) a. I want to try to begin to write a novel and Mary ~~wants to try to begin to~~ review a play.
b. *I want to try to begin to write a novel and Mary ~~wants to try to begin to~~ review a play.

Vowel reduction again shows that the infinitival marker cliticizes to the right (*[tə] whom did you talk?/who did you talk [tu]?*). SUBCAT correctly rules out deleting the host of *to*, as in (55b). Note that in this case, the unacceptability of (55b) doesn't follow from the Constituency Condition, since the complement of *to* is a constituent.

It was pointed out in section 3.2 that SUBCAT constraints generally have the effect of preserving syntactic relationships in the prosody. For example, determiners and possessors cliticize within the noun phrase, and accusative pronouns to their case-assigning

heads. We suggested that SUBCAT constraints could be assimilated to other constraints that preserve syntactic relationships, like those in Richards (2016) and Clemens (2014). If this speculation is on the right track, then the fact that ellipsis remnants behave like constituents is expected, even in a theory that operates over prosodic constituents. But we expect that phenomena that do not have an explanation in terms of constituency, like the Stranding Generalization, to be the result of independent prosodic well-formedness constraints.

3.8 Summary

We have argued for an implementation of ellipsis at the syntax-prosody interface. This required only minimal assumptions. One was that DESTRESS-GIVEN applies to G-marked words, in addition to G-marked phrases. The other is that DESTRESS-GIVEN can be optionally ranked above MATCH WORD. These two assumptions have the effect that—when DESTRESS-GIVEN dominates MATCH WORD—G-marked lexical words must delete, while G-marked function words can cliticize to an appropriate host. In conjunction with independently motivated prosodic well-formedness constraints, this explains the Stranding Generalization.

The next section is devoted to a discussion of some extensions of the proposal. We show that the theory predicts the existence of a novel phenomenon we call *auxiliary gapping*. We suggest a possible simplification in the theory of VP ellipsis licensing, invoking Contiguity Theory (Richards 2016). We then show how our account extends to an interesting interaction between VP ellipsis and prosody noted by Davis (2014).

4 Extensions

4.1 Auxiliary Gapping

Our theory predicts what, to our knowledge, is an unnoticed form of ellipsis, which we will call *auxiliary gapping*. It is exemplified in (56):

(56) Mei will have gone to 10 countries by 2025, and've gone to 20 countries by 2030.

The presence of the future-adverbial modifier ensures that this is minimally TP-conjunction. This means that there is an underlying *will* which has been elided.

(57) Mei will have gone to 10 countries by 2025, and [~~will~~'ve] gone to 20 countries by 2030

This possibility is explained by the less-restrictive SUBCAT requirements of auxiliaries like *have*. We saw above that object pronouns are not able to cliticize to elements other than the verbs and prepositions that select them (58a). Auxiliaries, however, are not so picky. For example, *have* can cliticize onto anything to its left, including *and* (58b–58d).

- (58) a. *Mei and-im
 b. They've
 c. They certainly've
 d. Who do you think've been here?

This suggests the following SUBCAT frame, from Tyler (2019). After *will* deletes, then, *have* will be able to satisfy its SUBCAT frame by cliticizing onto *and*. The possibility of auxiliary gapping, then, follows from more general prosodic characteristics of auxiliaries.

(59) SUBCAT frame for *have*: [_ω [...] Have⁰]

4.2 VP ellipsis

On the face of it, VP ellipsis is a problem for this theory of ellipsis. In VP ellipsis, at least one auxiliary—the finite auxiliary—must strand, even when it is given. With the ranking DESTRESS-GIVEN ≫ MATCH WORD, the prediction is that a given auxiliary will either elide or reduce: the finite auxiliary in VP ellipsis does neither, see (60).

(60) If Maša has been to Samarkand, Mei *(has) ~~been to Samarkand~~ too.

A range of similar data has led to the claim that VP ellipsis is syntactically licensed by T (Lobeck 1993; Merchant 2001; Aelbrecht 2010; Johnson 2008). Syntactic licensing has no obvious place in a theory that places ellipsis at the syntax-prosody interface, and it would be desirable to derive data like (60) from independent principles. Indeed, we suggest that a prosodic well-formedness constraint is responsible for the effects of apparent syntactic licensing. Richards (2016) argues at length that overt movement is motivated by the desire to satisfy prosodic conditions like (61).

(61) *Probe-Goal Contiguity*

Given a probe α and a goal β , α and β must be dominated by a single φ , within which β is Contiguity-prominent.

We refer the reader to Richards (2016) for detailed argumentation and a definition of Contiguity-prominence. What is important for our current purposes is the effect of (61), which is to ensure that in English, finite T and the subject must end up dominated by a single φ (with the subject at its left edge). Given that this is, for Richards (2016), a prosodic condition, we would expect there to be a high-ranking constraint preserving its effect in the output (62).

(62) CONTIGUITY: ProbeP must correspond to a φ which satisfies Probe-Goal contiguity.

This constraint could then play the same role as SUBCAT in regulating possible ellipses. Given the presence of a finite TP in the input, the ranking CONTIGUITY ≫ DESTRESS-GIVEN will ensure that the finite auxiliary is never elided.

(63) I think that Mei has been to Samarkand, and Maša thinks that Mei has ~~been to Samarkand~~ too.

(64)

	[_{TP} Mei _G has _G]	CONTIGUITY	DESTRESSG	MATCHW	MATCHPH
a.	(_φ (_ω Mei) (_ω has))		**		
b.	(_ω Mei)	*!	*	*	*
c.	(_ω has)	*!	*	*	*
d.	∅	*!		**	*

It has been a persistent puzzle that, although T appears to be licensing VP ellipsis, a smaller constituent than its complement can be elided (65a), and sometimes must be (65b).

- (65) a. Maša might've been there, and Mei [_{TP} might [_{Perfp} 've [_{VP} ~~been there~~]]] too.
 b. *Maša might've been there, and Mei [_{TP} might [_{Perfp} ~~have been there~~]] too.

Data like this is problematic for theories invoking Merchant's (2001) [E]-feature. The [E]-feature is argued to be present on T to account for the distribution of VP ellipsis, and targets its sister for non-pronunciation. This falsely predicts that only the sister of T can be elided, never a smaller constituent. To account for this, Aelbrecht (2010) stipulates that elided constituents also bear an [E]-feature, which must then enter into an Agree relation with T.

The present theory can potentially offer a simplification in the theory of ellipsis 'licensing.' It predicts correctly that the finite auxiliary must always be realized, as a result of CONTIGUITY. It further predicts that other auxiliaries will be realized if they cliticize to the left (thereby satisfying DESTRESS-GIVEN). *Have*, for example, cliticizes to the left (Tyler 2019). This would explain why *have* always survives ellipsis, even when not in T (Aelbrecht & Harwood 2015), as in (65b).

On the other hand, if passive progressive *being* cliticizes to the right, this would explain why it must be elided.

- (66) *Maša was being arrested, and Mei was being arrested too.

At present, however, we do not have evidence that *being* cliticizes to the right. It would have to do so as a foot; unfortunately, however, the *r*-insertion diagnostic of Itô & Mester (2009) is inapplicable here. We hope to explore the extension of this theory to VP ellipsis more fully in the future.

4.3 St'at'imcets VP ellipsis

St'at'imcets VP ellipsis offers further support to this theory.²⁹ Davis (2014) notes an interesting interplay between ellipsis and the prosodic requirements of auxiliaries. In St'at'imcets, 'light' auxiliaries cannot be stranded at the right edge of a string after ellipsis, (67b). They instead undergo what he calls 'rhetorical lengthening' (67c).

²⁹ Thanks to Kenyon Branan (p.c.) for bringing this case to our attention.

- (67) a. wá7 = ha es-(s)7ílhen?
 IMPF = YNQ STA-food
 ‘Does s/he have any food?’
- b. ??wa7, iy
 IMPF yes
 ‘S/he does, yes.’
- c. wá...a7, iy
 IMPF yes
 ‘S/he does, yes.’

Davis suggests that this lengthening takes place in order to satisfy the following condition:

- (68) *Minimal Foot Condition on Ellipsis*
 The remnant left by ellipsis must end in a well-formed foot.

He further suggests that this derives from the need for the auxiliary to procliticize to following material, noting that there is no rhetorical lengthening if, for example, the second position clitic *t'u7* is present (69b).

- (69) a. wá7 = ha = t'u7 áma
 IMPF = YNQ = PART good
 ‘Is s/he doing ok?’
- b. wá7 = t'u7
 IMPF = PART
 ‘S/he is.’

He further notes the following pattern, with three auxiliaries in the antecedent: *plan* ‘already,’ *wa7* ‘imperfective,’ and the motion verb *p'an't* ‘to return.’ Again, a ‘light’ auxiliary cannot be stranded by ellipsis (70b). Instead of lengthening the auxiliary, the additional auxiliary *p'an't* (‘return’) must be pronounced (70c).

- (70) a. plán = lhkacw = ha wa7 p'an't alkst
 already = 2SG.SU = YNQ IMPF return work.
 ‘Have you already gone back to work?’
- b. ??iy, plán = lhkan wa7
 yes already = 1SG.SU IMPF
 ‘Yes, I have.’
- c. iy, plán = lhkan wa7 p'an't
 yes already = 1SG.SU IMPF return
 ‘Yes, I have.’

This follows straightforwardly from the present theory. The procliticizing behavior of the auxiliary *wa7* strongly suggests a right-cliticizing SUBCAT frame. This SUBCAT constraint can be satisfied by pronouncing given material to its right, for example ‘return’ in (70c); this establishes the ranking SUBCAT ≫ DESTRESS-GIVEN. The St'at'imcets-specific

twist is that, when SUBCAT cannot be satisfied by the pronunciation of given material, the auxiliary can instead lengthen. This would follow from a sufficiently low-ranked Dep constraint. These are exactly the kinds of interactions between ellipsis and prosodic well-formedness constraints the present theory predicts.

5 Conclusion

In this paper we have argued for the Stranding Generalization: a condition on ellipsis remnants which prevents functional items from being stranded without their hosts. This is a puzzling generalization from the point of view of many current theories of ellipsis. We argued that capturing the Stranding Generalization requires locating ellipsis at a point in the computation when reference to prosodic properties is possible. We therefore proposed a theory in which ellipsis is implemented at the syntax-prosody interface. Ellipsis is a form of ‘radical deaccenting’ of given material, arising from an optional reranking of DESTRESS-GIVEN (which is responsible for deaccenting) and MATCH WORD (which enforces syntax-prosody correspondence). The Stranding Generalization was shown to follow from this theory in conjunction with independently motivated prosodic well-formedness constraints. This suggests a view of ellipsis in which any constraints on ellipsis—beyond semantic recoverability—are the result of interactions between constraints of this kind.

Abbreviations

IMPF = imperfective, PART = particle, SG = singular, STA = stative prefix, SUB = indicative subject clitic, YNQ = yes-no question enclitic

Competing interests

The authors have no competing interests to declare.

References

- Aelbrecht, Lobke. 2010. *The syntactic licensing of ellipsis*. Amsterdam: John Benjamins Pub. Company. <https://doi.org/10.1075/la.149>.
- Aelbrecht, Lobke & William Harwood. 2015. To be or not to be elided: VP ellipsis revisited. *Lingua* 153. 66–97. <https://doi.org/10.1016/j.lingua.2014.10.006>.
- Ahn, Byron & Laura Kalin. 2018. What’s in a (English) Reflexive? In Sherry Hucklebridge & Max Nelson (eds.), *NELS 48: Proceedings of the 48th annual meeting of the North East Linguistics Society*, vol. 1, 1–13. <http://byronahn.com/papers/Ahn-Kalin-NELS48-proceedings.pdf>.
- Anttila, Arto. 2002. Morphologically conditioned phonological alternations. *Natural Language & Linguistic Theory* 20(1). 1–42. <https://doi.org/10.1023/A:1014245408622>.
- Bennett, Ryan, Emily Elfner & James McCloskey. 2019. Prosody, focus, and ellipsis in Irish. *Language* 95(1). 66–106. <https://doi.org/10.1353/lan.2019.0012>.
- Bennett, Ryan, Boris Harizanov & Robert Henderson. 2018. Prosodic Smothering in Macedonian and Kaqchikel. *Linguistic Inquiry* 49(2). 195–246. https://doi.org/10.1162/LING_a_00272.

- Boone, Enrico. 2014. *The syntax and licensing of gapping and fragments*. Leiden University Dissertation. <http://hdl.handle.net/1887/29600>.
- Buring, Daniel. 2016. *Intonation and meaning*. Oxford: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199226269.001.0001>.
- Cardinaletti, Anna & Michal Starke. 1999. The typology of structural deficiency: A case study of three classes of pronouns. In Henk van Riemsdijk (ed.), *Clitics in the languages of Europe*, 145–233. Berlin: Mouton. <https://doi.org/10.1515/9783110804010.145>.
- Chung, Sandra. 2003. The Syntax and Prosody of Weak Pronouns in Chamorro. *Linguistic Inquiry* 34(4). 547–599. <https://doi.org/10.1162/002438903322520151>.
- Chung, Sandra, William A. Ladusaw & James McCloskey. 1995. Sluicing and logical form. *Natural Language Semantics* 3(3). 239–282. <https://doi.org/10.1007/BF01248819>.
- Clemens, Lauren Eby. 2014. *Prosodic Noun Incorporation and Verb-Initial Syntax*. Harvard University Doctoral Dissertation. <https://dash.harvard.edu/handle/1/13070029>.
- Davis, Henry. 2014. VP-ellipsis in St'át'imcets and its implications. In *Papers for the 39th International Conference on Salish and Neighbouring Languages*, 117–140. Vancouver: UPBWPL.
- Elfner, Emily. 2012. *Syntax-Prosody Interactions in Irish*. University of Massachusetts, Amherst Doctoral Dissertation. <https://doi.org/10.7275/3545-6n54>.
- Embick, David & Rolf Noyer. 2001. Movement Operations after Syntax. *Linguistic Inquiry* 32(4). 555–595. <https://doi.org/10.1162/002438901753373005>.
- Féry, Caroline & Katharina Hartmann. 2005. The focus and prosodic structure of German Right Node Raising and Gapping. *The Linguistic Review* 22(1). 69–116. <https://doi.org/10.1515/tlir.2005.22.1.69>.
- Fiengo, Robert & Robert May. 1994. *Indices and identity*. Cambridge, Mass.: MIT Press. <https://doi.org/10.2307/416224>.
- von Fintel, Kai. 1994. *Restrictions on quantifier domains*. University of Massachusetts - Amherst Doctoral Dissertation. <https://scholarworks.umass.edu/dissertations/AAI9434544>.
- Fortin, Catherine Rose. 2007. *Indonesian sluicing and verb phrase ellipsis: Description and explanation in a minimalist framework*. Ann Arbor: University of Michigan Doctoral Dissertation. <https://www.proquest.com/docview/304847427>.
- Gengel, Kirsten. 2007. *Focus and Ellipsis: A Generative Analysis of Pseudogapping and other Elliptical Structures*. University of Stuttgart Doctoral Dissertation.
- Griffiths, James. 2019. A Q-based approach to clausal ellipsis: Deriving the preposition stranding and island sensitivity generalisations without movement. *Glossa: a journal of general linguistics* 4(1). 12. <https://doi.org/10.5334/gjgl.653>.
- Hankamer, Jorge. 1979. *Deletion in coordinate structures*. New York; London: Garland.
- Harley, Heidi. 2007. The bipartite structure of verbs cross-linguistically (or: Why Mary can't exhibit John her paintings). In Thaís Cristófaró Silva & Heliana Mello (eds.), *Conferências do V Congresso Internacional da Associação Brasileira de Linguística*, 45–84. Belo Horizonte: ABRALIN and FALE/UFMG.
- Inkelas, Sharon & Cheryl Zoll. 2007. Is grammar dependence real? A comparison between cophonological and indexed constraint approaches to morphologically conditioned phonology. *Linguistics* 45(1). 133–171. <https://doi.org/10.1515/LING.2007.004>.
- Inkelas, Sharon & Cheryl Zoll. 2009. *Reduplication: doubling in morphology*. Cambridge: Cambridge University Press.
- Itô, Junko & Armin Mester. 2009. The extended prosodic word. In Janet Grijzenhout & Barış Kabak (eds.), *Phonological Domains: Universals and Deviations*, 135–194. Berlin: Mouton de Gruyter. <https://doi.org/10.1515/9783110219234.2.135>.

- Jayaseelan, Karattuparambil A. 1990. Incomplete VP deletion and gapping. *Linguistic analysis* 20(1-2). 64–81.
- Johnson, Kyle. 2008. What VP Ellipsis Can Do, and What it Can't, But Not Why. In *The Handbook of Contemporary Syntactic Theory*, 439–479. John Wiley & Sons, Ltd. <https://doi.org/10.1002/9780470756416.ch14>.
- Johnson, Kyle. 2017. Gapping. In *The Wiley Blackwell Companion to Syntax, Second Edition*, 1–40. Wiley Blackwell. <https://doi.org/10.1002/9781118358733.wbsyncom046>.
- Kratzer, Angelika & Elisabeth Selkirk. 2020. Deconstructing information structure. *Glossa: a journal of general linguistics* 5(1). 113. <https://doi.org/10.5334/gjgl.968>.
- Kuno, Susumu. 1976. Gapping: A Functional Analysis. *Linguistic Inquiry* 7(2). 300–318. JSTOR: 4177923.
- Landau, Idan. 2020. A Scope Argument against T-to-C Movement in Sluicing. *Syntax* 23(4). 375–393. <https://doi.org/10.1111/synt.12204>.
- Lasnik, Howard. 1999. On Feature Strength: Three Minimalist Approaches to Overt Movement. *Linguistic Inquiry* 30(2). 197–217. <https://doi.org/10.1162/002438999554039>.
- Lobeck, Anne. 1993. Strong agreement and identification: evidence from ellipsis in English. *Linguistics* 31(5). 777–812. <https://doi.org/10.1515/ling.1993.31.5.777>.
- Merchant, Jason. 2001. *The syntax of silence: sluicing, islands, and identity in ellipsis*. Oxford: Oxford University Press.
- Orgun, Cemil Orhan. 1996. *Sign-Based Morphology and Phonology with special attention to Optimality Theory*. University of California, Berkeley Doctoral Dissertation. <https://doi.org/doi:10.7282/T3BR8R38>.
- Ott, Dennis & Volker Struckmeier. 2018. Particles and Deletion. *Linguistic Inquiry* 49(2). 393–407. https://doi.org/10.1162/LING_a_00277.
- Richards, Norvin. 2016. *Contiguity Theory*. Cambridge, MA: MIT Press. <https://doi.org/10.7551/mitpress/10542.001.0001>.
- Ross, John Robert. 1970. Gapping and the order of constituents. In Manfred Bierwisch & Karl E. Heidolph (eds.), *Progress in linguistics*, 249–259. The Hague: Mouton. <https://doi.org/10.1515/9783111350219.249>.
- Schwarzschild, Roger. 1999. GiVENness, AvoidF and Other Constraints on the Placement of Accent. *Natural Language Semantics* 7(2). 141–177. <https://doi.org/10.1023/A:1008370902407>.
- Selkirk, Elisabeth. 1996. The prosodic structure of function words. In James L Morgan & Katherine Demuth (eds.), *Signal to syntax: Bootstrapping from speech to grammar in early acquisition*, 187–214. Mahwah, NJ: Lawrence Erlbaum.
- Selkirk, Elisabeth. 2009. On Clause and Intonational Phrase in Japanese: The Syntactic Grounding of Prosodic Constituent Structure. *Gengo Kenkyu (Journal of the Linguistic Society of Japan)* 136. 35–73.
- Selkirk, Elisabeth. 2011. The Syntax-Phonology Interface. In *The Handbook of Phonological Theory*, 435–484. John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781444343069.ch14>.
- Tancredi, Christopher Damian. 1992. *Deletion, deaccenting, and presupposition*. Massachusetts Institute of Technology Doctoral Dissertation. <https://dspace.mit.edu/handle/1721.1/12893>.
- Toosarvandani, Maziar. 2013. Gapping is low coordination (plus VP-ellipsis): A reply to Johnson. Ms., University of California, Santa Cruz.
- Truckenbrodt, Hubert. 1999. On the Relation between Syntactic Phrases and Phonological Phrases. *Linguistic Inquiry* 30(2). 219–255. <https://doi.org/10.1162/002438999554048>.

- Truckenbrodt, Hubert. 2006. Phrasal Stress. In Keith Brown (ed.), *Encyclopedia of Language & Linguistics (Second Edition)*, 572–579. Oxford: Elsevier. <https://doi.org/10.1016/B0-08-044854-2/04447-3>.
- Tyler, Matthew. 2019. Simplifying MATCH WORD: Evidence from English functional categories. *Glossa: a journal of general linguistics* 4(1). 15. <https://doi.org/10.5334/gjgl.631>.
- Wagner, Michael. 2012. Focus and givenness: A unified approach. In Ivona Kučerová & Ad Neeleman (eds.), *Information structure: Contrasts and positions*, 102–147. Cambridge: Cambridge University Press. <https://doi.org/10.1017/cbo9780511740084.007>.
- Weir, Andrew. 2015. Fragment answers and exceptional movement under ellipsis: a PF-movement account. In Thuy Buy & Deniz Özyıldız (eds.), *Proceedings of NELS*, vol. 45, 175–188.
- Winkler, Susanne. 2011. *Ellipsis and Focus in Generative Grammar*. Berlin: De Gruyter Mouton. <https://doi.org/10.1515/9783110890426>.
- Zec, Draga. 2005. Prosodic differences among function words. *Phonology* 22(1). 77–112. <https://doi.org/10.1017/s0952675705000448>.