

Syntactic identity, Parallelism and accommodated antecedents[☆]

Gary Thoms^{*}

Newcastle University, United Kingdom

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Abstract

Analyses of the ellipsis identity condition must account for the fact that some syntactic mismatches between an ellipsis site E and its antecedent A are possible while others are not. Previous accounts have suggested that the relevant distinction is between different kinds of heads, such that some heads in the ellipsis site may mismatch while others may not, and they have dealt with this sensitivity to a set of “special heads” with a built-for-purpose syntactic identity condition which holds over and above semantic identity to constrain ellipsis. In this article I argue against this approach and pursue an alternative which holds that identity is syntactic but “loose” in a precisely defined way. I show that the relevant generalization that accounts for syntactic identity effects in sluicing and VP-ellipsis-like constructions concerns the position of variables in the antecedent, rather than the feature content of syntactic heads. I propose an implementation of syntactic identity which allows for the accommodation of additional antecedents, with these being derived by a grammatical algorithm for generating alternatives, and I show that this implementation derives the right kinds of looseness while restricting mismatches with respect to the position of variables, thus deriving both the tolerable and intolerable mismatches between E and A without recourse to a specific condition regulating the content of special heads.

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1. Introduction

Much work on the ellipsis identity condition has revolved around the analysis of syntactic mismatches between the ellipsis site E and its antecedent A. These fall into two broad categories: *tolerable mismatches*, and *intolerable mismatches*. The existence of tolerable mismatches indicate that the identity condition cannot be one of strict isomorphism between E and A, but rather something looser, and they have been used by some (e.g. Merchant, 2001, 2005; Potsdam, 2007; Thoms, 2013) to argue in favour of a strictly *semantic* formulation of the identity condition, which

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^{*} Correspondence to: School of English Literature, Language and Linguistics, Percy Building, Newcastle University, Newcastle upon Tyne NE1 7RU, United Kingdom. Tel.: +44 07817697578.

E-mail address: gary.thoms@gmail.com.

allows the relevant differences in syntactic form.¹ Some examples of quite substantial syntactic mismatches from Merchant (2001) are given in (1):

- (1) a. I remember meeting him, but I don't remember when I ~~met him~~.
 b. Decorating for the holidays is easy if you know how ~~to decorate for the holidays~~.

However, recent work (e.g. Chung, 2013; Merchant, 2013b; Saab, in press) has concentrated on demonstrating the existence of *intolerable* mismatches: that is, mismatches between E and A which seem to cause the identity condition to fail (attested by the ungrammaticality of certain construals of ellipses). The intolerable mismatches in question are of significance because they seem not to be ruled out by semantic identity conditions like Merchant's (2001) EGIVENNESS, but rather they seem to involve mismatches in formal content quite similar to the tolerated ones demonstrated by the likes of (1). As such, they seem to demand an identity that is more sensitive to syntactic content than EGIVENNESS. The task, then, is to reformulate the identity condition so that it affords enough looseness to allow for the tolerable mismatches, while ensuring that it's also strict enough in the right areas to rule out the intolerable mismatches.

There are at least three different ways in which we can do this: (i) restate the semantic identity in terms of tighter semantic relations than entailment relations; (ii) embrace a "hybrid" identity condition which has a localized syntactic condition alongside a version of the semantic identity condition; (iii) find a way to loosen syntactic identity. Each of these options has different theoretical and empirical challenges to meet. Option (i), pursued in Hartman (2009), would seem to struggle to account for a lot of the data used to motivate syntactic identity conditions, since in many cases the mismatches in question make little or no semantic contribution (see especially Lasnik, 1995; Chung, 2013), and yet they seem to trigger identity mismatches. Option (ii) involves "bolting on" a syntactic identity condition which will ensure precise matches between E and A with respect to some aspects of syntactic structure, while being able to ignore mismatches of the kind seen in (1); the challenge here is not only to hone in on what the relevant bolt-on condition is, but also to justify its existence, since in the absence of a fuller explanation this approach seems cumbersome at best, incoherent at worst. Building on Merchant (2013b), Chung (2013) takes on this challenge, formulating a specific syntactic identity condition which regulates the syntactic content of a subset of syntactic heads, and she provides a sketchy account of why this might follow from an implementation of the LF-Copy approach to ellipsis (Chung et al., 1995). In what follows we will see that this "special heads" account has a number of problems. Option (iii), loosening syntactic identity, looks at first blush like a difficult one to implement, since identity over syntactic representations seems to be somewhat cut-and-dry, involving matching of feature content and the geometric relations between component parts (though see Arregui et al., 2006). Implementing the requisite looseness in syntactic identity theories, for instance in the LF Copy approach, is a far from trivial task.

In this article I argue for a version of option (iii). I begin by zeroing in on the nature of syntactic identity effects that have been discussed in the literature, and I show that contrary to previous claims, syntactic identity effects cannot be characterised in terms of the feature content of specific heads. Specifically, I show that the "special heads" condition of Chung (2013), which claims that intolerable syntactic mismatches occur only when a certain set of syntactic heads mismatch between E and A with respect to (formal) feature content, is lacking in motivation and directly falsified by a number of tolerable mismatches which involve mismatches which her theory would rule out. In addition, I show that not only is the special heads theory too restrictive, it is also too loose, in that it fails to rule out a large class of intolerable mismatches which do not seem to involve mismatches in terms of the special heads theory she proposes, such as mismatches in the form of verbs which restrict VP-ellipsis and related ellipsis constructions (Lasnik, 1995; Potsdam, 1997).

Re-examining the evidence, I show that the key factor which distinguishes tolerable and intolerable mismatches is not the feature content of mismatching heads, but the *position* of variables dominated by, or created by, these heads (Potsdam, 1997). This indicates that the syntactic identity condition should be loosened so as to allow mismatches in feature content, while it should be sensitive to the position of variables. I propose that the relevant wriggle-room can be obtained if we adopt the idea in Fox (1999a), Beecher (2008), van Craenenbroeck (2012) and Thoms (2013) that additional versions of the antecedent can be produced by *accommodation*, with the looseness coming from the availability of these additional antecedents in the right contexts. Adapting proposals in Katzir (2007), Singh (2008) and Fox and Katzir (2011), I propose that the accommodation process involved in ellipsis identity makes use of a set of *structurally defined alternatives*, with the structural conditions for creating new antecedents ensuring that only alternatives that are at most as complex as the source structure are generated. The accommodation system allows for the right kinds of looseness with respect to the morphological form of heads in the ellipsis site, but I argue that the complexity condition on alternatives derives the restriction on variables serving as antecedents. The theory thus lets in the right kind of looseness while continuing to account for the core restrictions.

¹ See also Barker (2013) for a theory of sluicing which accounts for these examples without making reference to unpronounced silent structure.

The paper is structured as follows. In section 2, I review Chung's (2013) hybrid identity condition and argue against her syntactic condition, proposing instead that her data may be better accounted for in terms of a syntactic implementation of Parallelism. In section 3 I consider a further set of syntactic identity effects in VP-ellipsis in English and its analogue in Scottish Gaelic, and I show that these effects and the core cases that were accounted for by Parallelism actually fall out of the restriction on variables serving as antecedents. In section 4 I develop the theory of ellipsis identity. Section 5 concludes.

2. Chung's "special heads" condition

In this section I critically review the hybrid identity condition proposed by Chung (2013), paying particular attention to the "special heads" component responsible for regulating syntactic identity effects. Chung develops her argument on the basis of analyses of constraints on sluicing in Chamorro and English, which she attributes to mismatches in argument structure or Case-assignment configurations. Since the sluicing examples are good in the absence of ellipsis, she attributes their failure as sluices to the identity condition, and argues that only a syntactic identity condition could handle such mismatches. To this end she proposes the condition in (2), which is given in a more elaborated form in (3).

(2) *Limited syntactic identity in sluicing (basic idea)*

The interrogative phrase of the sluice must be integrated into a substructure of the syntax in the ellipsis site that is identical to the corresponding substructure of the antecedent clause.

(3) *Limited syntactic identity in sluicing (specifics)*

- a. *Argument structure condition:* If the interrogative phrase is the argument of a predicate in the ellipsis site, that predicate must have an argument structure identical to that of the corresponding predicate in the antecedent clause.
- b. *Case condition:* If the interrogative phrase is a DP, it must be Case-licensed in the ellipsis site by a head identical to the corresponding head in the antecedent clause.

We will see in what follows that it is likely that most (but not all) of these cases may be ruled out independently. In addition, we will also see well-formed examples of sluicing which would be ruled out by the condition as it is formulated, indicating some other generalization must be sought.

2.1. Chung's evidence

Chung provides a number of different sources of evidence for the two conditions of (3). The argument for (3a), the condition on argument structure mismatches, is basically a replication in Chamorro of Merchant's (2013) point regarding English: sluicing does not tolerate voice mismatches. In English, this is demonstrated by examples like (4), where the presence of a passive structure in the ellipsis site is attested by the fact that the sluicing remnant is a *by*-phrase.

- (4) *Someone murdered Joe, but we don't know who by ~~he was murdered~~. (Merchant, 2013:81)

The evidence in Chamorro is slightly more indirect. First, Chung demonstrates that extraction of agents from passives in the *realis* mood is impossible in Chamorro, as demonstrated by (5). With this as background, she then shows that sluicing is ungrammatical when the correlate is the agent of a *realis* passive of this kind, as in (6).

- (5) *Hâyi binisita i palão'an?
who? AGR.PASS.visit the woman
"Who was the woman visited by?"

- (6) *Esta mang-ginacha', lao ti in tingu' hây
already AGR.PASS.detect but not AGR know who?
"They were caught, but we don't know who ~~caught them~~"

As Chung notes, if voice mismatches were possible under sluicing, then it should be possible to construe the sluice as active, with extraction of the agent of the active proceeding unimpeded. The fact that such examples are ungrammatical thus indicates that the passive construal is forced for the sluice, and hence ungrammaticality is attested because

extraction is banned in these configurations (cf. (5)).² Chung concludes, following Merchant (2013b), that the problem in these cases is that the specification of the Voice head in E is different from that in A in all these cases, and such syntactic mismatches are not tolerated by the condition in (3a). Chung and Merchant show that similar argument structure mismatches are also not tolerated in sluicing, indicating that argument structure mismatches are in general banned. As they note, *EGIVENNESS* does not rule out such mismatches.

Regarding Case, Chung provides three sources of evidence for (3b). Of these, two come from constraints on “sprouting” (sluicing with an implicit correlate). First, Chung shows that while Chamorro allows for extraction of possessors in many configurations, including in sluicing contexts, they cannot be sprouted. This is shown by examples like (7). Note that if the antecedent is changed so that the possessor correlate is realised overtly as an indefinite, the sluice is grammatical.

- (7) *Ilek-ña si Joe na guaha *pâtgun* mâtai, lao ti ha sangâni yu’ hâyi
 say-AGR UM Joe C AGR-exist child.L WH.AGR-die but not AGR say-to me who
 ‘Joe said that there was a child who died, but he didn’t tell me whose.’

Second, oblique complements cannot be sprouted in English and Chamorro. This is seen quite clearly in English in examples like (8a), which contrast minimally with examples where the whole oblique is sprouted (8b). Similar effects are demonstrated for Chamorro, which I leave out here for the sake of space.

- (8) a. *She’s jealous, but it’s not clear who ~~she’s jealous of~~
 b. She’s jealous but it’s not clear of who ~~she’s jealous of~~

Chung argues that what these two constraints have in common is that there must be a Case-assigning head present in E which is not present in A: in the sprouted possessor examples, this is a mismatch with respect to features on the (null) D head which assigns Case to the possessor, and in the sprouted oblique complement examples it is a mismatch with respect to the oblique heads, in English the prepositions, which assign Case to their complements (oblique PPs can be sprouted because they are not Case-marked). Chung thus takes these restrictions to motivate the Case constraint in (3b), since in all these cases a semantic identity condition like *EGIVENNESS* would not provide the right restriction.

Chung’s final argument for the Case condition comes from a restriction on sluicing with nominative subject remnants when the antecedent is an infinitive:

- (9) *Having to compromise is inevitable, but they have no idea who ~~has to compromise~~.

Chung notes that the mismatch between E and A with respect to finiteness is not necessarily the issue, as examples like (1a) (from Merchant, 2001) show that such mismatches can be tolerated in principle. However, (9) differs from (1a) in that in the former, the sluicing remnant is Case-marked by a Case-assignor that is not present in the antecedent, namely finite T (which is not present in A). Chung concludes that this is another situation where what counts is that there is a mismatch in the syntactic feature content of a head which does a particular job, in this situation assign Case to the sluicing remnant; (3b) then rules out (9) accordingly. Chung stresses that these show that it is not the case that certain heads count for syntactic identity in all configurations; rather, these heads are only “special heads” which are regulated by the syntactic identity condition when they somehow integrate an ellipsis remnant into the (silent) structure. Thus the feature content of T can be ignored in examples like (1a), since in that situation it’s not Case-marking a remnant.

2.2. Against the special heads analysis

In all of the cases above, Chung blames the restrictions identified on mismatches in the feature content of heads which integrate the sluicing remnants into the structure in some way; in the argument structure examples, this is the feature content of Voice (passive in one, active in another), and in the Case condition examples, it is the feature content of a Case assigner. However, the problem with this is that there are many other things that could be going wrong in each of the case studies at hand. If it can be shown that there are alternative analyses for the restrictions, and perhaps even that they

² It is not clear whether the lack of repair would be compatible with the LF Copy theory of Chung et al. (1995), as on this approach the *wh*-remnant is not extracted but base-generated in its surface position, yielding island-insensitivity (Ross, 1969, but see Barros et al., 2014).

have a common root, then one could argue that Chung's special heads explanation is to be dispreferred in favour of alternative accounts which have more generality and less theoretical machinery.

We can begin to build this case by looking more closely at the English Case-matching data, (9). Recall that the explanation for the badness here is that E contains a Case assigner, finite T, which is not present in A; this predicts that sluicing will always fail when A is an infinitive and E is a finite clause, and the sluice is a nominative subject with a non-nominative correlate in the subject position of the infinitive. However this prediction is not borne out: if we take versions of (1a) and make the correlate the infinitive subject, sluicing is fine even though the *wh*-remnant is extracted from a finite clause and is Case-marked by T like in (9):

- (10) a. I remember someone complaining, but I just can't remember who ~~complained~~.
 b. I remember something upsetting you greatly, but we can't remember what ~~upset you greatly~~.

These should be ruled out for the same reason that (9) is ruled out on Chung's analysis, but they are clearly grammatical. These examples falsify (3b), and they tell us that we need an alternative explanation for (9) and the other Case-matching data. The crucial difference between (9) and (10) is that in (10) the correlates are overtly realized indefinites, whereas in (9) the correlate seems to be the PRO subject. **It is well-known that sluicing correlates must take wide scope in parallel to the *wh*-remnants,** in order to satisfy *Scope Parallelism* (henceforth *Parallelism*). As a condition on ellipsis,³ Parallelism demands that scopal relations in E must be identical to those in A (Tancredi, 1992; Rooth and Mats, 1992; Fiengo and May, 1994; Fox, 1999a, 2000; Griffiths and Lipták, in press); it follows from this condition that correlates are typically wide-scoping weak quantifiers, like indefinites or foci, so that they scope in parallel with the *wh*-remnant of the sluiced clause. With this in mind, consider the scenario in (9): the arbitrary PRO subject is neither an indefinite nor a focus, so it is not a suitable correlate and hence Parallelism is violated in (9) (see also Chung et al., 1995; Romero, 1998; Merchant, 2001:ch.5). Parallelism thus rules out the apparent Case-matching effect described by Chung for (9), all the while admitting the good examples in (10).⁴

What the preceding shows is that the badness of certain extractions that would be licit without ellipsis are not always to be attributed to mismatches in the content of certain syntactic heads, but rather they can often be attributed to unrelated identity constraints like Parallelism. As it happens, Parallelism may actually offer an explanation for rest of the sluicing data which Chung uses to motivate her identity condition, as in all of the relevant cases it seems likely that the correlate and sluicing remnant do not scope in parallel. This is easy to see with voice mismatches like (4), where the variable created by the wide-scoping correlate in A is in the subject position but the variable created by *wh*-movement of the sluicing remnant is in the peripheral position occupied by *by*-phrases⁵:

- (11) A: [CP someone λx [TP x [T' [VoiceP [VP murdered Joe]]]]]
 E: [CP [PP by who] λx [TP he [T' was_i [VoiceP t_i [VP [VP murdered] x]]]]]

If Parallelism is ultimately a condition which regulates the position of variables (see e.g. Fox and Lasnik, 2003 for such a proposal), then such structures violate this condition and may be ruled out independent of the content of Voice. A similar explanation would extend to the Chamorro facts, as well as the other related argument structure mismatches discussed by Merchant (2013b), which all involve non-parallel A'-extraction of a very similar kind.

Regarding the data from sprouted possessors, Parallelism may also provide an explanation. As noted by Chung et al. (1995:277–280) and Merchant (2001:148–149), sprouting is quite restricted, and Merchant connects this restrictedness to the fact that implicit arguments typically take very narrow scope. Thus he notes that sprouting is sensitive to scope islands

³ I concentrate on Parallelism as a condition on ellipsis here, putting to one side the question of whether the conditions discussed here hold in the same way with deaccenting. Tancredi (1992) argues that this is indeed the case with VP-ellipsis, but there has been very little work on deaccenting in cases of TP-ellipsis to date (the notable exception being a brief discussion in Romero, 1998, 28–29), so this has to be left as a topic for future work.

⁴ There may be other issues which rule out (9) independently. For instance, a reviewer notes that (i), which has an indefinite *for-to* subject which would be able to satisfy Parallelism, is also substantially degraded:

(i) *For someone to have to compromise is inevitable, but we don't know who ~~has to compromise~~.

It is possible that there are semantic differences between E and A here given that *for* infinitives typically have a modal component, but exploring this would take me too far afield here. What seems clear is that the argument for Chung's condition is not as clear-cut as it seemed.

⁵ As a reviewer notes, this is incompatible with an approach to the passive like Collins (2005), where the *by*-phrase is base-generated in Spec, vP. See Bruening (2012) for a more directly compatible approach to the passive, which argues that the *by*-phrase is generated outside of vP as an adjunct.

in a way that sluicing with overt correlates are not, as shown by (12) for negative islands. The failure of (12a) can be characterized as a Scope Parallelism failure: **the implicit correlate cannot take wide scope parallel to the *wh*-remnant.**

- (12) a. *No one is eating, but we don't know what ~~no one is eating~~ *t*
 b. No one is eating something, but we don't know what ~~no one is eating~~ *t*

What I would like to suggest is that the same restriction is involved in constraining sprouting of possessors of Chamorro. Larson (1985) has argued that DP is a scope island in English,⁶ so if similar arguments hold for Chamorro we may expect that the implicit possessor correlates in Chung's (7) are unable to take wide scope parallel to the sprouted *wh*-remnants, thus failing to satisfy Parallelism. Further argumentation is needed to confirm or refute this analysis of Chung's facts (see e.g. Johnson, 2001 for interesting complications), but at the very least this stands as a plausible alternative analysis which needs to be dispensed with in order for the Case-based analysis to go through.

It is less clear whether a similar Parallelism-based explanation can account for the data from sprouted oblique complements. Consider again Chung's English data, which shows that while the oblique itself can be sprouted (8b), its complement cannot, as indicated by the fact that the head of the oblique cannot be stranded.

- (13) a. *She's jealous, but it's not clear who ~~she's jealous of~~ *t*
 b. She's jealous, but it's not clear of who ~~she's jealous~~ *t*

A Parallelism-based analysis of these cases would need to appeal to the fact that in A the correlate is an implicit oblique PP, whereas in E the remnant is a DP contained within a PP, with these having different scopal properties which may thus lead to a Parallelism failure. Whether Scope Parallelism as assumed here is sensitive enough to make these distinctions is not clear at present, but what does seem clear is that the character of the data is very similar to the other cases above: there is a mismatch between E and A with respect to the operators which take wide scope, one that may give rise to non-Parallelism between the dependencies. As we have already seen, the mismatch that is responsible is unlikely to be in Case-marking features, since this sort of condition was falsified by (10). We will return to these cases in more detail below, but for now I will conclude that they may plausibly be given an alternative analysis not in terms of mismatches in the content of special heads in E and A, but rather in terms of mismatches in the form of dependencies which look into positions within them.

The preceding discussion skirts a number of issues which require a bit more attention. One such issue is the comparison of sluicing with VP-ellipsis: why is it that VP-ellipsis can tolerate voice mismatches (in limited discourse conditions, Kehler, 2002), as in (14), whereas sluicing cannot?

- (14) This can be explained in an informal fashion, and I often do ~~explain it in an informal fashion~~

Examples such as this would seem to involve non-parallel extraction of the kind that gives rise to a Parallelism violation in (11), at least on the assumption that A-movement creates variable-binding relations which are visible for the calculation of Parallelism, as in Hartman (2011). This can be seen in the schematic of (14) in (15), where the variable in the object position of the antecedent is not matched by one in the same position in the ellipsis site.

- (15) A: [TP This λx [T' can [VOICE be [VP $x \lambda x'$ explained x' ...]]]]
 E: [TP I λx [T' do [VOICE {VP ~~x explain this...~~ }]]]

There are a few options for addressing this issue. Perhaps the best one is to adopt the suggestion in Lasnik (1995) and Fox (1999b) that A-movement differs fundamentally from A'-movement in that it does not obligatorily leave copies that are then converted into operator–variable chains at LF, unless it is necessary for scope reconstruction.⁷ This would mean that there would be no variable binding relations of the kind schematized in (15), and hence Parallelism would not necessarily be violated with VP-ellipsis voice mismatches like these. This makes a degree of sense given that A-moved arguments are not typically analysed as operators like their A'-moved counterparts are, and it is supported by Messick and Thoms (2014), who reappraise the arguments in Hartman (2011) and show that the evidence actually weighs against counting

⁶ Sauerland (2005) disputes this, but his arguments are addressed and countered by Charlow (2010).

⁷ A second, less elegant option is to follow Hartman (2009) in proposing that voice mismatches in VP-ellipsis are generally bad, and that the exceptions identified by Kehler and Merchant are cases where we “go beyond the grammar” to use flawed antecedents in the right discourse conditions (cf. Arregui et al., 2006).

A-traces in the calculation of Parallelism. Presumably this difference would follow from an adequate theory of the A/A'-distinction, although I am not in a position to provide a full account of how just now.⁸

On this account, then, the crucial difference between VP-ellipsis and sluicing on this account is that VP-ellipsis involves non-Parallel A-dependencies while sluicing and most of the other elliptical constructions which ban voice mismatches (stripping, fragments, pseudogapping) involve non-Parallel A'-dependencies. This is quite distinct from the account that is given by Merchant (2013b), where the crucial difference is the size of the ellipsis site. With VP-ellipsis, the ellipsis site is as small as just the VP, and Voice is external to the ellipsis site and thus a mismatch in Voice specification between antecedent clause and ellipsis clause is tolerated; it is not part of what is considered by the ellipsis identity condition, which includes a “special heads” clause of the kind outlined above. By contrast, sluicing always includes Voice, since it is TP-ellipsis, and so the identity condition dictates that E and A must have the same voice specification, thus ruling out voice mismatches. An adequate comparison of the two accounts would also need to address the various other mismatch restrictions which are discussed by Merchant, but my main objective here is to indicate how the grammatical mismatch data can be rendered compatible with the present account. I do not provide an account of all the VP-ellipsis mismatches that are ruled out, such as those involving transitive-intransitive alternations like causatives. I believe that many of these restrictions may ultimately follow from the discourse conditions which restrict mismatches in VP-ellipsis, as described in detail by Kehler (2002) and more recently Kertz (2010),⁹ but showing this would require a substantial digression which I cannot pursue here.

2.3. Syntactic mismatches?

We have seen that the facts taken by Chung to argue in favour of a “special heads” based approach to syntactic identity may in fact be analysed in terms of some version of Parallelism. Given that there are clear counter-examples to Chung's own version of the special heads condition, in particular for the Case condition, this Parallelism-based analysis seems to be the right way to go. But if this is correct, we then need to consider how Parallelism should be implemented or formulated in order to capture these facts. Many of the phenomena attributed to Parallelism can be reduced to a semantic identity condition like GIVENNESS; for instance, Merchant (2001) shows that the sensitivity of sprouted arguments to negative islands follows from the fact that “nobody is eating” does not entail “there is something that nobody is eating,” as would be required for (12a) (and which is available for (12b)). The impossibility of sluicing with unfocussed definite correlates, invoked to explain (9) above, is explained in terms of GIVENNESS (which is folded into Merchant's ellipsis-specific condition) by Romero (1998), so these cases could also be explained without recourse to syntactic identity.

However it is not obvious that all of the other cases of apparent Parallelism failures, in particular the argument structure mismatches and the constraint on sprouting oblique complements, can be explained away in terms of semantic identity, since in these cases GIVENNESS seems to be satisfied (the correlates should be able to take wide scope).¹⁰ What these cases seem to call for is a syntactic implementation of Parallelism, along the lines of that proposed in, Fox and Lasnik (2003), Griffiths and Lipták (in press) and others, according to which it is effectively an LF-isomorphism condition of sorts. On some implementations, such as Fox (1999a), this follows from making the ellipsis identity condition one of strict syntactic isomorphism, but we know now that this won't work for our own purposes. An alternative is that Parallelism is an additional constraint which is bolted on to regular semantic identity (much like with Chung's approach); this is what is

⁸ As a reviewer notes, the proposed account seems to predict that voice mismatches ought not to be compatible with scope reconstruction back into the VP, and (i) indicates that this prediction is unfulfilled as the indefinite seems to allow a non-specific reading.

(i) A prisoner should have been released, but the authorities chose not to.

However this may plausibly be derived by reconstructing the subject to some intermediate position outside of the VP that forms the antecedent, since it is known that A-moved DPs can undergo scope reconstruction to intermediate A-trace positions (Sauerland, 2003). It is very difficult to pin down clear evidence for A-reconstruction back into the VP-internal position in passives, and in fact in some cases passivization seems to preclude reconstruction entirely; for instance, Aoun (1982) notes that with ECM infinitives, passivization of the ECM predicate removes the option to reconstruct the embedded subject:

(ii) a. I believe someone from New York to be likely to win the lottery. *likely*>∃
b. Someone from New York is believed to be likely to win the lottery. **likely*>∃

Quite why A-reconstruction into passivized VPs should be ruled out in these cases is not clear (though see Nevins and Anand, 2003 for a proposal), but this fact about passivization and reconstruction lends plausibility to the alternative analysis of (i) as involving intermediate reconstruction. See Fox (2000) for much discussion of the interaction of Scope Parallelism and reconstruction.

⁹ I thank an anonymous reviewer for bringing the significance of Kertz's work to my attention.

¹⁰ A relevant test here is whether the *deaccented* versions of the sluices are well-formed. Unfortunately there is little discussion of IP-deaccenting in the literature, barring a brief mention in Romero (1998:28–29); filling in this picture would take us too far afield here.

proposed by Griffiths and Lipták (in press)), who propose the condition in (16). This exact formulation would not do for all of the data discussed so far, as it only regulates the positions of the binders, not the variables, but we could restate the condition in a much stronger form to account for this. Such a restatement is given roughly in (17).

- (16) Parallelism (adapted from Griffiths and Lipták, in press): variables in the elided constituent E must be bound from parallel positions in its antecedent constituent A.
- (17) Parallelism (revised): an elided constituent E and its antecedent A must be isomorphic with respect to variable binding configurations.

Although this condition may get the right results, a worry is that its overlap with a condition like *EGIVENNESS* is suspiciously large, and its theoretical status is also questionable. Given this, one may be tempted to go back to the drawing board with Chung's condition, perhaps to reconsider how ellipsis remnants are "integrated" into the substructure in the ellipsis site. However in the next section I develop further arguments for analysing syntactic identity effects in terms of a condition like (17).

3. IP-level identity effects

In this section I consider a set of tolerable and intolerable syntactic mismatches in the IP-domain, namely the English morphological mismatch effects discovered by Warner (1993) and then made famous by Lasnik (1995). Building on insights in Potsdam (1997), I show that these effects also do not follow from an identity condition which regulates the content of a special set of syntactic heads (like Chung's), but they do follow from a Parallelism-based explanation of the type discussed above, with the position of variables again being crucial for whether or not mismatches are possible. However I then consider very similar effects in Scottish Gaelic, where an explanation in terms of a condition like (17) is not so straightforward. This will take us in the direction of a more specific constraint, which I then derive in section 4.

3.1. Warner's auxiliary verb generalization

We begin with a well-known generalization from Warner (1993) regarding ellipsis of *be* in English. The key observation is this: while VP-ellipsis¹¹ may optionally delete *be* and *have* when the same form occurs in A, as in (18), this is often restricted when a different form occurs in A, as in (19).

- (18) a. John has been fired, and Mary has (been) too.
 b. John should be fired, and Mary should (be) too.
 c. John might have been feeling sick, and Mary might have (been) too.
 d. John should be downstairs, and Mary should (be) too.
- (19) a. John was fired, and Mary will *(be), too.
 b. Chris has been to Rome and his wife might *(have), as well. (Potsdam, 1997)
 c. I am confused by this, and Mary has *(been) for a long time. (Lasnik, 1995)
 d. John was here, and Mary will *(be), too. (Warner, 1993, 52)
 e. John is happy today, and he often has *(been) in the past.

This restriction on deletion of non-identical forms of the verb is particularly interesting since it only seems to hold of *be* and *have*: lexical verbs may differ in their form between E and A, as shown by (20). On the basis of this, Warner proposes the generalization in (21).

- (20) a. John has slept, and now Mary will sleep.
 b. I didn't steal the cake, although I could have stolen the cake.
 c. Are they arguing? They always do argue. Potsdam (1997)

¹¹ I use the term "VP-ellipsis" here for the sake of keeping with traditional descriptions. In many cases this would seem to be inaccurate, for instance when a projection containing auxiliary *be* is deleted. Sag (1976:53) introduced the term "post-auxiliary ellipsis," but that would not be adequate for describing the Scottish Gaelic data in section 3.3.

(21) Warner's Auxiliary Verb Generalization (Warner, 1993:56)

In cases of ellipsis of a VP headed by an auxiliary verb, the auxiliary must have the exact same morphological form as its antecedent.

Warner's Generalization presents another challenge for those aiming to formulate the identity condition, since on the surface it looks like another set of tolerable and intolerable syntactic identity effects; that is, morphological identity is required with *be* and *have*, but not with lexical verbs.

Perhaps the best-known account of Warner's Generalization is Lasnik's (1995) early Minimalist analysis, which takes as crucial the fact that *be* and *have* typically raise to T whereas lexical verbs don't. Building on proposals in Chomsky (1995), Lasnik proposes a partially Lexicalist analysis of the English auxiliary system, where auxiliaries and lexical verbs are taken to be fundamentally different in their morphosyntax: auxiliaries enter derivation fully inflected, but lexical verbs do not, instead combining with their affixes by affix hopping (he calls this a "hybrid" approach to verbal morphology). Assuming that the ellipsis identity is one of strict syntactic identity, and that even copies left by movement must match between E and A, Lasnik thus derives the ungrammaticality of examples like (19a) from the fact that the lower copy of head movement in A, *was*, is non-identical to the unraised nonfinite form in the same position in E, *be*.

(22) *John was fired, and Mary will ~~be~~-fired, too.

A: [_{TP} John was [_{VoiceP} was [_{VP} fired]]]

E: [_{TP} Mary will [_{VoiceP} ~~be~~—[_{VP}-fired]]]

Lexical verbs differ on this account because they do not enter the derivation fully inflected, but rather they combine with their affixes via affix hopping. (23) schematizes (20a), where we see that the form of the lexical verb is identical in the LFs of E and A.

(23) John has slept, and now Mary will sleep.

A: [_{TP} John has + en [_{VP} sleep]]]

E: [_{TP} Mary will [_{VP}-sleep]]]

Thus Lasnik's system derives the core content of Warner's Generalization.¹² An important characteristic of this analysis is that that it does not treat the different classes of verb differently with respect to ellipsis identity, that is, it is not a "special heads" kind of theory. Rather, it derives the difference between them from the fact that they differ with respect to raising to T.

However, subsequent work has identified a number of problems for Lasnik's analysis of the morphological mismatches in English VP-ellipsis (Potsdam, 1997; Omaki, 2007). Particularly relevant here is Potsdam (1997), which challenges the basic generalization in (21). As Potsdam notes, many cases of mismatches are acceptable or at least a lot better when *be* in both E and A is non-finite. His data is in (24), which he presents without precise judgments but the comment that "many of the examples seem fully acceptable, though others are degraded" (p.8).

(24) a. John is being examined, but Jack really should ~~be~~-examined also.

b. He might be attending AA sessions, I know his mother has ~~been~~-attending AA sessions

c. John may be questioning our motives, but Peter hasn't ~~been~~-questioning our motives

d. [Snoopy talking to Woodstock, *Peanuts* cartoon]

You and I are a lot alike... just a common bird and a common dog. Of course, if we wanted to ~~be~~-great, we could have been great... but we didn't need to ~~be~~-great.

Potsdam emphasises that while some of these examples are not perfect, there is a strong contrast between these and those cases where the form of *be/have* in A is finite, which are fully ungrammatical. I and my informants agree with

¹² Lasnik notes an apparent problem for this analysis with examples like (i): since the affix is not combined with the verb, it seems to violate the stray affix filter.

(i) John will sleep, and Mary has slept already.

A: [_{TP} John will [_{VP} sleep]]]

E: [_{TP} Mary has +en [_{VP}-sleep]]]

This problem can be avoided if we assume that affix hopping is a postsyntactic process, with identity condition being calculated over LF representations. In this case, there is no stray affix violation, as the affixes combine in morphology, but this does not create a problem for the identity condition, since this compares the pre-combined forms. For relevant discussion see Harwood (2013).

Potsdam's assessment of the data, and in (25) below I provide a number of additional examples which further demonstrate that deleting mismatching forms of *be* is very often fully grammatical.¹³

- (25) a. A: John is being very cautious.
 B: Well you would ~~be very cautious~~ if you were in his shoes!
- b. He might be rude to the guests; I know he has ~~been rude to the guests~~ in the past!
- c. The president should be pressured into taking a vote; if he hasn't ~~been pressured into taking a vote~~ by the end of the week, the coalition will have failed.
- d. Everyone thought John should have been fired, but we all knew that he wouldn't ~~be fired~~ when it came down to it as he's the boss' son.

In all these examples, *be* is in different form in E and A but it can be deleted with little or no degradation. What this tells us is that Warner's Generalization is not quite right, and it follows from this that Lasnik's account, which imposes strict syntactic identity between E and A, is not going to work for this data. More significantly, this shows the key difference between the good mismatch cases and the truly ungrammatical cases in (19), where the *be/have* in A is finite and in T, is the position of corresponding elements in A, rather than their morphological form. As with Chung's sluicing mismatches, this seems to invite an explanation in terms of Parallelism.

3.2. A Parallelism-based analysis

In this section I will argue that the Warner/Potsdam facts can be accounted for in terms of the Parallelism-based analysis outlined earlier. To see this, consider the following schematics of the relevant good and bad cases discussed above. (26a) exemplifies the bad mismatch examples identified by Warner, in which deleting a non-finite form of *be/have* in E is deleted under (non-)identity with a finite form in A; as we can see, in these cases *be* is extracted from the antecedent site, and so in A a trace occupies a position corresponding to a nonfinite form of *be* in E. (26b) is representative of Potsdam's good mismatches, where different forms of *be* occupy the same position in the inflectional layer. Finally, (27a) demonstrates the good cases where the inflectional layers of E and A are fully parallel. For concreteness, I assume the auxiliary system proposed in Bjorkman (2011), in which auxiliaries are inserted directly into inflectional projections (TP, PerfP, AspP, VoiceP) to bear inflectional morphemes.

- (26) a. *John was fired, and Mary will ~~be~~fired, too.
 A: [TP John T+be_i [VOICEP t_i [VP fired]]]
 E: [TP Mary T+will [VOICEP ~~be~~ [VP fired]]] = (19a), core data from Warner
- b. John is being examined, but Jack really should ~~be~~examined, also.
 A: [TP John T+be_i [ASPP t_i [VOICEP being [VP examined]]]]
 E: [TP Jack T+should [VOICEP ~~be~~ [VP examined]]] = (24a), Potsdam's good cases
- c. John has been fired, and Mary has ~~been~~fired, too.
 A: [TP John T+has_i [PERFP t_i [VOICEP been [VP fired]]]]
 E: [TP Mary T+has_j [PERFP t_j [VOICEP ~~been~~ [VP fired]]]] = (18a), fully parallel cases

The crucial difference between the bad (26a) and the good (26b)–(26c) is that only in (26a) are E and A distinct with respect to the position of variables and their binders (assuming with Lechner, 2007; Hartman, 2011 that head movement chains are represented as variable binding relations just like A'-movement). (27a)–(27b) schematize (26a) and (26b) in a little more detail to make this clear:

- (27) a. A: [TP John T+be λx [VOICEP x [VP fired]]]
 E: [TP Mary T+will [VOICEP ~~be~~ [VP fired]]]
- b. A: [TP John T+be λx [ASPP x [VOICEP being [VP examined]]]]
 E: [TP Jack T+should [VOICEP ~~be~~ [VP examined]]]

¹³ These examples with copula *be* seem to be particularly good. One possible explanation for this difference may be that such examples are not ambiguous between parses that do and do not have *be* in the ellipsis site; for instance, (24b) has the reading *his mother has attended AA sessions*, where there is no *be* mismatch, but this isn't an option in (25a)–(25b).

Non-isomorphism with respect to variable binding relations in the elided constituent and its antecedent causes a violation of the Parallelism constraint in (17), so (27a) would be ruled out correctly. (27b) is different: the constituent that is elided, VoiceP, and its corresponding constituent in the antecedent clause do not differ with respect to variable binding (though there are differences in the surrounding clause structure), so (17) does not rule this out. Thus the Parallelism condition accounts for the English VP-ellipsis mismatch facts without appealing to strict morphological identity, which we know to be too strict independent of these facts (cf. (1)), or indeed the “hybrid” Lexicalist approach to the auxiliary system, which has its own theoretical hurdles to cross (Omaki, 2007; see also Baker, 1988; Marantz, 1997; Bobaljik, 2012).

3.3. Syntactic mismatches in Scottish Gaelic “verbal ellipsis”

In this section I introduce a new set of IP-level morphological mismatches from a VP-ellipsis-like construction in Scottish Gaelic, which I will call “verbal ellipsis” (for reasons that will become clear). These facts provide further evidence for the picture sketched for English above, in particular the ban on configurations like (27a), as well as the possibility of a number of mismatches in the form of a head within (or originating within) the ellipsis site. However, we will see that Scottish Gaelic (henceforth Gaelic) verbal ellipsis also allows for mismatches which the Parallelism condition in (17) would rule out, specifically where there are variables in E that do not correspond to parallel variables in A. We thus arrive at a more refined picture of which mismatches are tolerated and which ones aren’t.

Before we proceed, it is necessary to be clear about the analysis of Gaelic clause structure which we will be working with. As is well-known, Gaelic is a head-initial VSO language from the Goidelic branch of the Celtic language family, and like its neighbouring languages, Gaelic VSO is derived from an underlying SVO structure by movement of the finite verb to some head position to the left of the subject (Adger, 1994, 2000; Ramchand, 1997); this is evidenced by the fact that in clauses where the finite verb is an auxiliary, the lexical verb appears in a position to the right in an SVO configuration. As one may expect, the analysis of the exact position of the verb depends on where we locate the subject, and developments in the proper analysis of this matter has been tied up with wider developments in generative syntax on comparative clause structure. Early work like Emonds (1978) and Stowell (1981) proposed that the Celtic subject position is the same one that the English subject occupies, in modern terms Spec,TP, with the verb moved to C like in the Germanic V2 languages (see also Carnie, 1995, Duffield, 1996). This “V1-analysis” fell out of favour as McCloskey (1991, 1996) showed that the VP-internal subject hypothesis (not available to Emonds or Stowell) made Celtic VSO compatible with an analysis where the verb is moved just to T like in French. McCloskey argued that this turn away from the V1 analysis to what we may call a “V-to-T” analysis was supported by the fact that Celtic verb movement past the subject was unlike the verb movement past subjects in Germanic V2, in that the former occurred in embedded clauses and in the presence of overt complementizers while the latter did not.

However, in later work McCloskey (1997) demonstrated that the subject in Irish VSO finite clauses is not in its base position within the vP, but rather in some derived position higher in the IP-domain (these facts were replicated for Gaelic by Adger, 2000). This is shown by the fact that it occurs to the left of clause-medial adverbs (McCloskey, 1997; Adger, 2000), as in Gaelic examples like (28) (the reverse subject-adverb order is not possible).

- (28) Bhiodh bana-bhuidsich gu tric a’ briseadh nan sguaban aca
 be-COND witches often IMP break-VN the broomsticks at-3PL
 “Witches would often break their broomsticks.”

Adger (2010)

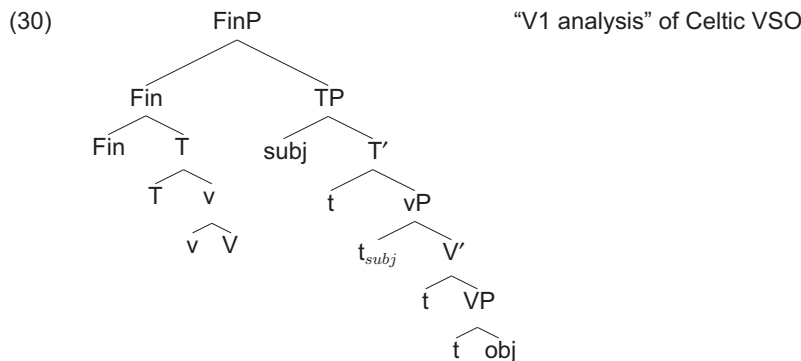
Adger (2010) strengthened the case for taking this subject position to be a derived position in Gaelic by showing that the subject occurs to the *right* of these adverbs just when the sentence has an existential interpretation, as in (29) (the reverse order is again impossible on this interpretation). Given that subjects typically stay low in existentials, this indicates that subjects in examples like (28) are indeed moved to a derived position, rather than generally being base-generated in some specifier above the adjunction position for such adverbs.

- (29) Bhiodh gu tric bana-bhuidsich a’ briseadh nan sguaban aca aig an àm sin
 be-COND often witches IMP break-VN the broomsticks at-3PL at the time that
 “There would often be witches breaking their broomsticks at that time.”

Adger (2010)

Regarding the location of this derived subject position, McCloskey (1997) proposed that it is an agreement-related projection below TP, resisting the temptation to unify the subject raising in VSO with that seen in English and other languages; as he noted, this seems to be justified by the fact that the conditions on subject realization in VSO are distinct from those in English, for instance with respect to the obligatoriness of expletive insertion when there is no derived subject in the subject position (cf. (29) and its English translation). This kept constant the assumption that verb is in T, from McCloskey (1991, 1996), which also seemed to force locating the subject in a lower specifier.

However, the V-to-T analysis has been challenged in work since then, with some further arguments emerging in favour of the V1 analysis. Hendrick (2000) showed that McCloskey's (1996) arguments against the V1 analysis, which hinged on the proposal that the verb cannot occupy the highest head position in the clause, are undermined if we adopt Rizzi's (1997) cartographic model of the left periphery, according to which there are several head positions above TP; in addition Hendrick also showed that the wider range of facts from the other Celtic languages actually supported adopting the V1 analysis over the V-to-T analysis (see also Roberts, 2005). More recently, Thoms (2014b) has provided an argument for the V1 analysis by comparing constraints on extraction from ellipsis in Gaelic and English, also known as "MaxElide" constraints (Takahashi and Fox, 2005; Merchant, 2008; Hartman, 2011).¹⁴ Thoms also points out that McCloskey's argument regarding the conditions on subject realization, or "EPP effects," only works with the support of an explicit theory of EPP effects, yet it is not clear that any contemporary theory supports this argument in the right way.¹⁵ Other arguments of varying degrees of directness have been put forward in Carnie et al. (2000), McCloskey (2011a), Thoms (in press), Thoms (2014a) for different variants of the V1 analysis, while few if any new arguments for the V-to-T analysis (as opposed to the V1 analysis) have been brought forward since McCloskey (1996). Taken together, this all indicates that the V1 analysis for Celtic VSO may in fact be the right way to go. I will therefore assume that the V1 analysis is right for Gaelic VSO structures, with the subject in Spec,TP and the finite verb in the left-peripheral projection which I identify as FinP (following Hendrick, 2000). This is schematized below for clarity.



With this background established, we can return to the matter of ellipsis in Gaelic. Like Irish, Gaelic has an ellipsis process which has typically been described as "VP-ellipsis" which involves eliding the constituent which is dominated by the initial finite verb; the elided constituent includes the subject, aspectual particles and all other vP material. This is used primarily in response to questions 31 (also known as "responsive ellipsis"), but it can also be used in coordinate structures or other embedded contexts (32).

- (31) Q: An do dh'ith thu feòil?
 C-Q PST PST-eat 2SG meat
 "Did you eat meat?"

A: Dh'ith mi feòil
 PST-eat
 "I did", lit. "ate I-meat"

- (32) Cha do dh'ith mi feòil Diardaoin, ach dh'ith mi feòil an-raoir
 C-NEG PST PST-eat 1SG meat Thursday but PST-eat last-night
 "I didn't eat meat on Thursday, but I did eat meat last night"

¹⁴ In short, Thoms points out (building on Hartman, 2011) that the interaction of *wh*-adjunct extraction and "VP-ellipsis" in Gaelic VSO clauses closely resembles the same interaction in English clauses with verb movement to C (matrix clauses in Standard English and embedded clauses in Irish English dialects) and differs from minimally different cases where the verb stays in situ (embedded clauses in Standard English and matrix clauses in Indian English dialects). Thoms provides an analysis of these facts in terms of the Parallelism-based analysis in Hartman (2011); that implementation of MaxElide is not directly compatible with the approach to Parallelism effects in the discussion of voice mismatches in VP-ellipsis at the end of section 2.2, but the same conclusion is arrived at if we adopt the implementations of MaxElide in Merchant (2008) or Messick and Thoms (2014).

¹⁵ Specifically, McCloskey's proposal requires a theory that predicts that the EPP condition on T always requires that its specifier be filled, but the EPP condition on the lower AgrP projection to which Celtic subjects raise (on this analysis) has no such filled specifier component. I know of no theory of the EPP which makes this distinction.

The use of the term “VP-ellipsis” stems from McCloskey’s early work, in which it was assumed that the subject was in situ in VP, but since we are assuming a V1 analysis, with the subject in Spec,TP, it makes more sense to describe this ellipsis process as “TP-ellipsis,” but to avoid confusing this with sluicing and its kin I will describe the Gaelic ellipsis process neutrally as *verbal ellipsis*. Verbal ellipsis is possible with any verb which can occur in the initial position, though we will see that not every combination of ellipsis sites and antecedents is possible.

Now let us consider the range of tolerable and intolerable mismatches between E and A in Gaelic verbal ellipsis.¹⁶ A first point to note about Gaelic verbal ellipsis is that it is possible for the verb that “heads” the ellipsis site in E to have a different Tense specification from the one in A (see also McCloskey, 2011b). This is shown by (33)–(34) for lexical verbs, where future tense verbs can provide antecedents for past tense verbs and vice versa.

- (33) **Ithidh** mi feòil a-màireach, ach cha **do dh’ith** an-raoir
eat-FUT 1SG meat tomorrow but C-NEG eat-PST last-night
“I’ll eat meat tomorrow, but I didn’t ~~eat meat~~ last night”

- (34) **Dh’ith** mi feòil an-raoir, ach chan **ith** a-màireach
eat-PST 1SG meat last-night but C-NEG eat-FUT tomorrow
“I ate meat yesterday, but I won’t ~~eat meat~~ tomorrow”

The same is seen when the initial verbs are both auxiliary *bith*, in that various combinations of mismatching tense are possible. (35)–(36) demonstrates just two of the options.

- (35) **Bha** mi ag ithe feòil an-raoir, ach chan **eil** an-dràsta
be-PST-IND 1SG IMP-ASP eat-VN meat last-night but C-NEG be-PRES-DEP now
“I wasn’t eating meat last night, but I am ~~eating meat~~ now”

Past A, present E

- (36) **Bithidh** mi ag ithe feòil a-màireach, ach cha **robh** an-raoir
be-FUT-IND 1SG IMP-ASP eat-VN meat tomorrow but C-NEG be-PST-DEP last-night
“I’ll be eating meat tomorrow, but I wasn’t ~~eating meat~~ last night”

Future A, past E

All of these examples involve extraction of formally distinct heads from E and A, but they are completely grammatical. This shows that head movement out of ellipsis is just like A'-movement, in that it allows for mismatches so long as extraction is parallel (contra Potsdam, 1997).

In addition to allowing for mismatches in the form of heads extracted from the ellipsis site, Gaelic also allows for mismatches in the content of aspect heads contained in the ellipsis site. (37) demonstrates a case where A contains the perfect aspect particle *air* while E clearly gets an imperfective interpretation (forced by adverbs, tense), with the imperfective particle *a(g)* in the corresponding position.¹⁷

- (37) Tha mi **air** a dhol a Dhun Eidean an-diugh, ach cha **bhi** **a'** ~~de~~ **a**
be-PRES-IND 1SG PERF PRT go-VN to Edinburgh today but C-NEG be-FUT-DEP IMP go-VN to
~~Dhun Eidean~~ a-màireach
Edinburgh tomorrow
“I have gone to Edinburgh today, but I won’t ~~be going to Edinburgh~~ tomorrow”

This indicates that the feature content of the Aspect head can also differ between E and A, another substantial mismatch in the IP-domain which the identity condition must allow for.

The final set of mismatches I will consider are where E and A differ with respect to whether the initial position is occupied by a lexical verb or an auxiliary. These are in principle testable in contexts with changes in tense or aspect, since we know that E and A can differ with respect to these kinds of syntactic content, but they would seem to involve substantial

¹⁶ One kind of mismatch which I ignore in what follows is the alternation between dependent and independent forms of the verb (represented in the glosses as IND/DEP). This is an alternation in the verb form which is conditioned by the form of the complementizer that immediately dominates the verb; I ignore this here since it does not implicate the feature content of heads within the ellipsis site, and so it does not speak directly to the matter at hand.

¹⁷ The aspect particle *a(g)* (represented orthographically as *a'* before consonants) is often glossed as “progressive” in traditional grammars, but Ramchand (1997) argues forcefully that it is better understood as an imperfective aspect marker. See also Reed (2012).

Parallelism violations, since extracted lexical verbs would leave variables within vP that would not be matched by extracted auxiliaries. Somewhat surprisingly, **a subset of these mismatches are in fact possible, specifically those cases where a lexical verb is extracted from E but not A.** This is demonstrated for two of the possible permutations below (I use question-answer pairs to create the optimal discourse conditions for such mismatches).¹⁸ In (38), a future lexical verb is extracted from the VP in E, with a present auxiliary extracted from A; in (39), the lexical verb is changed to past tense, with the same antecedent.

- (38) Q: A **bheil** thu a' faighinn leabharaichean bho Fheargais an-dràsta?
 C-Q be-PRES-IND 2SG IMP get-VN books from Fergus just-now
 "Are you getting books from Fergus just now?"
 A: Chan **eil**, ach **gheibh** mi ~~leabharaichean bho Fheargais~~ a-màireach!
 C-NEG be-PRES-DEP but get-FUT-IND I books from Fergus tomorrow
 "I'm not ~~getting books from him~~, but I will ~~get books from him~~ tomorrow!"
- (39) Q: A **bheil** thu a' faighinn leabharaichean bho Fheargais an-dràsta?
 C-Q be-PRES-IND 2SG IMP get-VN books from Fergus just-now
 "Are you getting books from Fergus just now?"
 A: Chan **eil**, ach **fhuair** mi ~~leabharaichean bho Fheargais~~ an-dè!
 C-NEG be-PRES-DEP but get-PST-IND I books from Fergus tomorrow
 "I'm not ~~getting books from him~~, but I did ~~books from him~~ yesterday!"

Here E and A don't just differ with respect to functional elements like aspect particles and the specification of Tense, but they even differ with respect to the presence of the infinitival form of the verb, which is present in A but not in E.

Importantly, the above cases contrast strongly with the reverse configuration, where the lexical verb is extracted from the VP in A but there is no parallel extraction in E, with the initial position being occupied by the auxiliary. Ellipsis is not possible in such circumstances, as shown by the following, where past and present forms of the auxiliary are used (all configurations of this kind fail).

- (40) Q: An **dh'fhuair** thu leabharaichean bho Fheargais?
 C-Q get-PST-DEP 2SG books from Fergus
 "Did you get books from Fergus?"
 A: Cha **dh'fhuair**, *ach **tha** mi a' ~~faighinn leabharaichean bho Fheargais~~ an-dràsta!
 C-NEG get-PST-DEP but be-PRES-IND I IMP get-VN books from Fergus now
 "I didn't ~~get books from him~~, but I am ~~getting books from him~~ now!"
- (41) Q: Am **faigh** thu leabharaichean bho Fheargais a-màireach?
 C-Q get-FUT-DEP 2SG books from Fergus tomorrow
 "Will you get books from Fergus tomorrow?"
 A: Cha **faigh**, *ach **bha** mi a' ~~faighinn leabharaichean bho Fheargais~~
 C-NEG get-FUT-DEP but be-PST-IND I IMP get-VN books from Fergus-GEN
 an t-seachdain 'sa chaidh!
 last-week
 "I won't ~~get books from him tomorrow~~, but I was ~~getting books from him~~ last week!"

As we can see from the struckthrough material, E and A differ in these cases not only in the position of variables but also in the presence of the imperfective head, which is present in E but not in A in these cases. However we have already seen in (37) that mismatches in the content of the aspect head are permissible independently in Gaelic, so this cannot be the source of the badness of (40)–(41). Given the reverse configuration is a possible E–A pair (as in (38)–(39) above), **the fact that these cases are ungrammatical indicates is evidence of an asymmetry between extraction from E, which need not be matched perfectly by parallel extraction, and extraction from A, which always requires parallel extraction.**

¹⁸ These examples have implications for how we conceive of the Verbal Identity Requirement (Goldberg, 2005), although I will not get into this here; see also the discussion at the end of section 3.4.

Now let us consider whether this constraint is also active in sluicing. For concreteness, the formulation we have been working with so far is stated in (44); here I restate it in terms of variables rather than traces for the sake of arriving at a more general rule, which recalls a very similar condition proposed in Potsdam (1997); I leave off discussion of Potsdam's proposal until the end of this section.²¹

(44) A variable cannot provide an antecedent for ellipsis of a non-variable.

So far we have only seen this in action in accounting for mismatches with variables left by head movement (cf. Potsdam, 1997), but we will see that (44) will account for the key constraints on sluicing discussed in section (5). A good candidate for such an explanation is the case of voice mismatches, as we can see from (45), which schematizes one of the key examples, where a passive clause is elided under identity with an active counterpart.

(45) *Someone murdered Joe, but we don't know by whom he was murdered- t
 A: [_{CP} someone λx [_{TP} x [_{T'} T [_{VOICEP} [_{VP} murdered Joe]]]]]
 E: [_{CP} [_{PP} by whom] λy [_{TP} he [_{T'} was [_{VOICEP} [_{VP} murdered —] y]]]]

Particularly important here is the indefinite correlate, which takes scope at the CP-level parallel to the *wh*P (Chung et al., 1995), binding its variable in the subject position. Since there is no corresponding variable in the subject position of the E-clause, this violates (44) and so it is correctly ruled out. This analysis would extend to the other argument structure mismatch examples, as in all of these involve the indefinite correlate in A binding a variable in a position that does not correspond to the variable bound by the *wh*-operator in the sluice.

The analysis of sprouted oblique complements is similar, though the details depend on our exact analysis of sprouting. I will assume that implicit arguments and obliques are syntactically represented as (free or bound) variables, with implicit obliques being of category P (see Martí, 2006; Martí, 2011). The variable introduced by sprouted obliques will be existentially bound at the CP-level, just like a trace of PP-movement.

(46) *She's jealous, but it's not clear who she's jealous of- t
 A: [_{CP} λx [_{TP} she is [_{VP} [_{AP} jealous x_{PP}]]]]]
 E: [_{CP} who λy [_{TP} she is [_{VP} [_{AP} jealous [_{PP} of y_{DP}]]]]]

This would also be ruled out by (44): in A, there is a variable x which stands as the antecedent for ellipsis of a non-variable, which is the PP of DP in E (the fact that the DP contained within the PP is itself a variable must be irrelevant for our condition). Note that this problem would not persist if it was a PP that was extracted in E, so it does not rule out sprouting in general. And as before, this explanation also does not need to appeal to a condition which regulates the content of prepositional heads in E and A.

Before moving on, we should pause to consider the difference between the condition proposed here and the very similar condition in Potsdam (1997), to which the present work owes a substantial debt. Potsdam proposes the condition in (47) on the basis of the English VP-ellipsis data discussed in section 3.1. This condition is more specific than the one proposed in (44) above, and so it does not immediately generalize to account for the other Parallelism data discussed in this section, not least since Potsdam makes it clear that no such condition holds of phrasal movement.

(47) A trace of verb movement cannot serve as an antecedent for ellipsis.

This condition correctly rules out the key mismatches from Warner (1993) and Potsdam (1997), where a trace of verb movement in the antecedent corresponds to a verbal element in the antecedent. Potsdam's proposal is also similar to the analysis sketched here so far (and different from that of Lasnik, 1995 in the same way) in that it does not require there to be

²¹ There are two immediate benefits from stating the condition in terms of variables. First, it allows us to continue to ignore traces left by A-movement, which were assumed to be irrelevant for the identity condition in the discussion at the end of section 2.2. Second, it allows to account for another kind of tolerable mismatch between E and A, namely a class cases of cases where extraction from A is not in fact matched by extraction from E. As noted by Merchant (2001:204–205), sluicing examples of this kind are well-formed, as shown by (ia). Merchant's analysis of these cases is that the sluiced TP would contain a pronoun in the position corresponding to the object gap in A; specifically, it is an E-type pronoun which covaries with the *wh*P in the antecedent, as in (ib). These can be understood as conforming to (44) if E-type pronouns are variables.

(i) a. They want to know what he stole, and why.
 b. They want to know what_i John stole t_i , and why he stole it_i.

identity of morphological form between corresponding heads in E and A; this is the case for Potsdam because he assumes a Lexicalist approach to verbal morphology (Chomsky, 1995) and it follows from this approach that the verbal morphology is not syntactically represented and so not visible for syntactic identity. Thus Potsdam's theory does not distinguish between different forms of *be*, although it does distinguish between *be* and other auxiliaries like *have*.

As it is stated in (47), Potsdam's theory seems to disallow ellipsis VPs containing traces of verb movement which are parallel to traces of verb movement in the antecedent, such as the core cases verbal ellipsis in SG and Irish. To account for this, Potsdam posits that "corresponding X^0 traces must have the same binder in both the antecedent and the target [elided, AUTHOR] clause," and he argues that "the empirical reflex of this restriction is that the raised verbs in ellipsis antecedent and target clauses must be the same" (p. 13). This empirical reflex is realised as the *Verbal Identity Requirement*, the requirement that any verb which is extracted from E must be from the same root as the corresponding verb which is extracted from A; this condition is seen in action in ellipsis constructions like SG verbal ellipsis and related ellipsis constructions (Goldberg, 2005; Gribanova, 2013).²² However it is not clear that the so-called Verbal Identity Requirement should be stated as a condition which is specific to extracted verbs, as Lipták (2012) has shown that similar effects hold of very similar particle-stranding ellipsis constructions in Hungarian where the stranded element is clearly phrasal. In addition, Gribanova (2013) has noted that the VIR is not so strict in all languages, as it may be ameliorated in Russian when the different verbs are contrastively focussed even though no such amelioration obtains in Celtic. This is not the place for a substantial digression on VIR effects, but it should suffice to say that the mere existence of the VIR effect in some languages does not support Potsdam's X^0 -specific condition in (47).

A simpler problem for Potsdam's analysis comes from the data in section 3.3, specifically the cases of SG verbal ellipsis where the evacuated constituent contained a trace of a head which did not have the same binder. These are the examples in (35)–(39), where the T head extracted from A is formally distinct from the one extracted from E; (48) repeats (38), which shows one of the more drastic mismatches where the verb extracted from A is an auxiliary (with the lexical verb in situ in the VP in nonfinite form) and the one extracted from E is a finite form of the lexical verb.

- (48) Q: A **bheil** thu a' faighinn leabharaichean bho Fheargais an-dràsta?
 C-Q be-PRES-IND 2SG IMP get-VN books from Fergus just-now
 "Are you getting books from Fergus just now?"
 A: Chan **eil**, ach **gheibh** mi leabharaichean ~~bho Fheargais~~ a-màireach!
 C-NEG be-PRES-DEP but get-FUT-IND I books from Fergus tomorrow
 "I'm not ~~getting books from him~~, but I will ~~get books from him~~ tomorrow!"

Here the different traces of head movement would not have the same binder, so something else would have to be added to the Lexicalist theory to account for the fact that it is grammatical. Given these issues, as well as the other well-known problems for Lexicalist theories of morphology more generally (e.g. Marantz, 1997, Bobaljik, 2012), it seems fair to put this approach to one side, though not without noting that the approach advocated here is very similar in spirit.

To summarize, we have seen that the condition in (44) is capable of accounting for the data syntactic mismatch data previously accounted for by Parallelism, ruling out the intolerable mismatches with respect to the position of variables in A, while allowing (in the absence of further stipulation) the tolerated mismatches with respect to the form of heads in E and A, or indeed the position of variables in E. The question, now, is what the status of (44) actually is, and what kind of theory of the identity condition it calls for. One possibility is that (44) is simply a standalone syntactic identity constraint which must be satisfied in addition to some semantic identity relation for ellipsis to be resolved; this would be another version of Chung's proposal, with (44) replacing (3). But this is unsatisfying in the absence of some explanation of the status of (44), which is nothing other than a quite ugly stipulation; for instance, it cannot be understood as a localized identity condition

²² Potsdam proposes that the same condition holds in British English with extraction of non-parallel verbs in those cases where it can be tested, namely, when a possessive with verb movement serves as the antecedent for ellipsis of the postcopular constituent in a copular construction. Both cases putatively involve extraction of the verb from VP, and VP-ellipsis is bad in this case.

(i) *Have_i you t_i a good dentist? Yes, my cousin is_j t_j a good dentist.

It seems that (i) may be bad for reasons independent of (47) however. Consider (ii), where a possessive serves as the antecedent for ellipsis of a nominal predicate in a copular construction, but there but there is no verb movement from A; here the ellipsis is still bad, even though there is no reason that (47) would rule it out as there is no verb movement from A, and related examples like (iii) are well-formed.

(ii) *John doesn't have a best man yet; his brother has been ~~a best man~~ several times for other people, but they aren't close.

(iii) John hasn't been a best man yet, although his brother has been ~~a best man~~ several times for other people.

It seems likely that this is some sort of definiteness effect in the possessive construction, but the precise nature of this is unclear to me at present (though see Keenan, 1987 and Tham, 2006 for relevant discussion).

like Chung's (3), as it is asymmetric, only regulating variables in A. Rather, a better way to think about (44) is as a condition on the syntactic structure of possible antecedents, with those antecedents which create the undesired configuration either being unusable or ungenerable. This seems to pull us towards a theory of ellipsis identity which considers numerous possible antecedents, with syntactic constraints regulating the spread of possible candidates and syntactic identity relating the elided constituent and the (set of) antecedents. In the next section I propose a theory of ellipsis identity which has just this character.

4. Structurally defined alternatives and the identity condition

In this section I propose that the ellipsis identity relation is one of strict syntactic isomorphism, but that this relation need not hold between E and the overt antecedent A; rather, **the relation may also hold between E and some additional antecedent A' which is accommodated into the discourse for the purpose of satisfying ellipsis resolution** (Fox, 1999a; Thoms, 2013; van Craenenbroeck, 2012; see also Beecher, 2008 and Miller and Hemforth, 2014 for related proposals). Accommodation involves using a set of alternatives to A, **all of which need to be semantically identical to A, but they may be syntactically distinct in a number of ways**. Crucially, I adopt the proposal in Katzir (2007) that the set of alternatives is *structurally defined*, with a grammatical algorithm determining the set of possible alternatives to A. This algorithm takes the original structure A and manipulates it with a number of tree-altering processes, like substitution and node deletion, to create a set of alternative structures {A', A''...}, which may then be used for a variety of purposes, such as generating scalar implicatures, focus implicatures, or indeed satisfying ellipsis identity. Crucially, the algorithm is constrained to creating alternatives that are *at most as complex as* the original structure A, and this means that when A contains a variable, it cannot be replaced by a non-variable, since all other replacements would be more complex. This derives the condition in (44), and thus it accounts for the key intolerable mismatches while allowing for a large class of mismatches elsewhere.

I begin by outlining the theory of structurally defined alternatives from Katzir (2007), before then showing how this applies in the case of ellipsis identity, and how it derives the data discussed above.

4.1. Structurally defined alternatives: Katzir 2007

Computing the meaning of a linguistic object X often involves accessing a set of alternative objects {X'} that are distinct from X in some way. A famous example of this is the calculation of scalar implicatures (SIs). SIs are a set of non-assertive meanings which are inferred from sentences containing scalar expressions like quantifiers which strengthen the meaning of the sentence beyond what is asserted (Grice, 1989; Horn, 1989; Gazdar, 1979; Sauerland, 2004b a.o.). For instance, a sentence containing a quantifier like *some* such as (49):

(49) John ate some of the peas.

This is said to give rise to the scalar implicature *it is not the case that John ate all of the peas*, as uttering (49) would be somewhat anomalous and uninformative in a scenario where John ate all of the peas (even though it is compatible with that scenario). Calculating this implicature requires making reference to the alternative *John ate all of the peas*, and work on scalar implicature has concentrated on the question of how these alternatives are accessed and used. For a long time, the majority view has been that this is all done by the pragmatics, with general principles of conversational reasoning producing the alternatives and using them to derive the implicatures, but in recent years a number of authors have proposed a radical revision of the majority view: that scalar implicatures may in fact be derived grammatically (Landman, 2000; Chierchia, 2006; Fox, 2007; Chierchia et al., 2008²³). Katzir's (2007) contribution to this movement is to argue that the process which creates the set of alternatives is a grammatical process, with the set of alternatives created for a given sentence X being derived from the structure of X, and not just its meaning. The specifics of this theory of structurally defined alternatives will be crucial for what follows, so I will briefly walk through Katzir's key argument; for more detail and further arguments in favour of this approach, see Singh (2008, 2010), Fox and Katzir (2011) and Bale and Khanjian (2014).

One of the key issues for the theory of scalar implicature is the fact that the process which generates the implicatures seems to make reference to a limited set of alternatives. Take (49) again. The basic contribution of a scalar implicature is

²³ As a reviewer notes, the grammatical approach to scalar implicatures is still the majority view, and a number of criticisms of the grammatical approach have been raised in Swanson (2010) and Geurts (2011) (see also Abbott, 2012 for some broader concerns about the use of accommodation in this literature). However the system used here has been extended to other empirical domains such as association with focus (Fox and Katzir, 2011) and the interpretation of number (Bale and Khanjian, 2014), so these challenges to Katzir's original proposal need not undermine this system entirely.

that the speaker did not use a stronger alternative to the scalar term because this would not be true; we can arrive at this by assuming that she is being maximally cooperative, and intends her utterance to be as informative as possible but not untrue. Thus the procedure for producing the implicature *it is not the case that John ate all of the peas* for (49) is to take a stronger alternative which entails it, specifically *John ate all of the peas*, and negate that alternative, with the precondition for its use being that the SI derived is compatible with the main assertion. Although such a procedure seems intuitively correct, Kroch (1972) notes that it does not work in the absence of constraints on which alternatives are used, since in some cases we may find that two stronger alternatives to X , X' and X'' , will contradict each other when negated, and so the procedure for generating SIs will wrongly predict that these are contradictory. Returning to our example again, *John ate some but not all of the peas* is stronger than (49) and does not contradict it when negated, so *it is not the case that John ate some but not all of the peas* would seem to be a viable SI, yet this would contradict the other SI, *it's not the case that John ate all of the peas*. This has become known as the *symmetry problem*, and the crux of the matter seems to be to constrain the set of alternatives which are used to ensure that unwanted ones (like *John ate some but not all of the peas*) are excluded.

Katzir's solution to this problem is to propose that we generate alternatives to X by taking the structure and subjecting it to a set of structure-changing operations to create a set of structural alternatives, $A_{str}(X)$, with one crucial condition: the structures that are generated must be *at most as complex as* X . The algorithm for modifying the source tree X makes use of three structure-altering operations:

- (i) *deletion*, which involves removing edges and nodes in the tree;
- (ii) *contraction*, which involves removing an edge and identifying its edge nodes
- (iii) *substitution* of one terminal element in X for another terminal element from a defined substitution source (i.e. the lexicon of the language).

The bulk of the work of interest to us is done by (iii), which effectively replaces a given node with other lexical items of the same category, thus producing variants of the structure X with slightly different syntactic content. Notably, this algorithm lacks an operation of *addition*, which we can conceive of as an operation which inserts new lexical items into unfilled positions, typically specifier or adjunction positions. This prevents the algorithm from generating every possible structure from X , as we are ultimately restricted to working with the basic “frame” of the source structure. Katzir shows that this basic algorithm deals with the symmetry problem for SIs as exemplified by examples like (49): substitution can create the relevant alternative by replacing *some* with *all*, but it cannot create the unwanted alternative because *some but not all* is not a lexical item but rather a complex determiner which is (necessarily) more complex than *some*; as such, this would require something like addition, which is not available, and so the unwanted SI is blocked. Fox and Katzir (2011) argue that this system should also be used for the generation of alternatives for the computation of focus inferences (Rooth, 1985), since they show that symmetry problem arises with focus alternatives; I refer the reader to that work for the details of the argument.

The notion of “as most as complex as” is important for what follows so let us consider it in more detail. Katzir (2007:678–679) proposes a procedural definition, such that an alternative Y is defined as at most as complex as X if Y can be obtained from X by a finite number of applications of the operations in (i)–(iii). This entails that substitution should itself never increase complexity, and hence that all lexical items which can substitute for each other are equally complex with respect to the system. Although this is a pleasingly simple definition, things become tricky when we consider how substitution works when it may have the appearance of addition, such as cases where what is replaced is null or unspecified. Consider sentences with implicit arguments in a sentence like *John read*, which we have taken to be syntactically represented minimal constituents of the relevant category, in effect variables (following Martí, 2006; Martí, 2011). The system above would seem to predict that it should be possible to generate alternatives for *John read* which replace the implicit argument variable with full arguments, and hence it should generate scalar implicatures like the ones we would generate from a sentence like *John read something* by substituting the variable with relevant elements (i.e. *everything*). But this would not be the right result, as such sentences seem not to give rise to such an SI in all circumstances. To see this, consider the following scenario. John and Mary have had a party which has left their kitchen in a huge mess, and they spend the morning putting off cleaning it up. Mary heads out briefly and then comes home to find John in the kitchen wearing rubber gloves, with the whole kitchen completely clean. In this context, it would be perfectly appropriate for John to say “you’ll be glad to see that I have cleaned,” just like it would be appropriate for him to say “you’ll be glad to see that I have cleaned everything;” however, it would be less appropriate (and somewhat comical) if he said “you’ll be glad to see that I’ve cleaned something.” This indicates that the implicit argument in *John has cleaned* does not give rise to the SI *it is not the case that John has cleaned everything*, and hence it indicates that implicit indefinite arguments differ from their overt counterparts with respect to SIs. If the system for generating SIs is as described above, then this is unexpected, at least if we may generate alternatives which replace the implicit arguments with overtly realized arguments in the generation of alternatives.

Given this, what I would like to propose is that the “at most as complex as” condition on the generation of alternatives should be extended to constrain substitution. Specifically, we may say that substitution of a node N in X with a different

node N' is only possible if N' is at most as complex as N , and we may distinguish (at least) two levels of complexity which this calculation may make reference to, namely *specified* and *unspecified*. The vast majority of possible substitutions for a node will be *specified*, containing lexical information and feature content of the kind which is visible for syntactic operations; I will assume that all such nodes in a given category are equally complex in this sense, since their feature content will vary along set parameters (i.e. all will be specified for $[\pm F]$).²⁴ Nodes which are *unspecified* are different: these have no feature content other than their categorial features, and as such these are minimally complex syntactic nodes. Variables are the unspecified nodes *par excellence*, since they provide clear evidence of being unspecified in interpretation for features which they seem to bear on the surface (cf. *only I did my homework*), but other elements may also be taken to be unspecified, such as heads which are said to be present syntactically but syntactically “inactive.” If we assume that variables are unspecified, and adopt the modification proposed here, then it follows that variables cannot be substituted with specified nodes of the same category by the alternative generation algorithm, since this would create alternatives that are more complex than the target for substitution. This would derive the fact that constituents containing implicit arguments do not have alternatives which realize the argument overtly, and it predicts that it will generally not be possible to replace variables in the generation of alternatives. This specific aspect of the alternative-generating algorithm’s sensitivity to complexity will be crucial in what follows.

4.2. Structurally defined accommodation

Now we can turn to the specifics of the proposal for the ellipsis identity condition. The proposal is this: the identity relation between E and A is one of strict syntactic isomorphism, but when A is not identical to E it is possible to accommodate additional antecedents on the basis of A . This condition is given in (50):

- (50) **Syntactic identity in ellipsis:** an ellipsis constituent E must be identical (at LF) to an antecedent constituent A or an accommodated additional antecedent A' .

The crucial component here is the process by which additional antecedents are accommodated, which is similar to what is proposed in Fox (1999a) and Thoms (2013) (see also Singh, 2008, 2010 on presupposition accommodation). The accommodation process work as follows: given an antecedent A which is semantically but not syntactically identical to E , generate the set of semantically identical alternatives of A . The set of additional antecedents obtained by this procedure, $Ad(A)$, is the set of accommodated antecedents, and ellipsis is only possible if one of these alternatives is syntactically identical to E . This is given in detail in (51):

- (51) **Accommodating alternative antecedents for ellipsis**
- a. the set of additional antecedents, $Ad(A)$, may be accommodated on the basis of of the original (overt) antecedent A , if A is not identical to E (Fox’s economy condition on accommodation).²⁵
 - b. The members of $Ad(A)$ are alternatives derived from A by applications of
 - (i) deletion,
 - (ii) contraction and
 - (iii) substitution (Katzir’s algorithm).
 - c. All members of $Ad(A)$ are at most complex as A (Katzir’s system, modified as above).
 - d. All members of $Ad(A)$ must be semantically identical to A under some variable assignment, i.e. $\llbracket A \rrbracket = \llbracket A' \rrbracket$ (Hartman’s (2009) semantic identity condition).

This procedure thus allows for the generation of a set of syntactically distinct set of additional antecedents which can satisfy the identity condition, allowing E and A to be non-isomorphic just in those cases where we can accommodate an A' that is isomorphic with E .²⁶ But this is constrained by semantic identity all the way, since the members of $Ad(A)$ are

²⁴ It may be possible to distinguish further levels of complexity among the specified class. For instance, if a feature F is not binary but privative, then a node N which is specified for F could be said to be more complex than a node N' in the same category which is not specified for F . I leave this for future research.

²⁵ As a reviewer notes, Fox’s own condition is actually stronger than what is presented here, as it holds that the accommodation must be *minimal* in a sense defined precisely therein. As far as I can tell, nothing would stand in the way of substituting (51a) with the condition from Fox’s paper, although it is an empirical question as to whether this is the right way to go.

²⁶ Note that the proposed condition differs from alternative proposals like Chung (2006) in allowing substantial lexical mismatches between E and A , at least in those cases where the mismatch would not fall foul of semantic identity. One class of cases where this condition gets the right result and Chung’s condition does not is those where E and A differ with respect to the lexical items used to express modality; see Merchant (2001) and Thoms (2013).

required by (51d) to be semantically identical to A. This is the semantic condition which defines the usable set of alternatives. Here I am repurposing the semantic identity condition from [Hartman \(2009\)](#) (proposed there as the ellipsis identity condition tout court), where semantic identity of A and A' is required to hold under some variable assignment.²⁷

In outline, this proposal is much like other theories of ellipsis identity which try to combine syntactic and semantic identity relations, but it differs in some important ways too. For instance, [Rooth and Mats \(1992\)](#) proposes that there are two 'redundancy relations' which regulate ellipsis, one being syntactic (holding of the pair E and A) and the other semantic (holding of the pair of constituents which are or contain E and A), whereas on the present approach syntactic identity holds between E and A or A', while semantic identity is required to hold between A, A' and E. On Rooth's theory, semantic identity between the constituents containing E and A must hold for ellipsis to be licensed, whereas on this approach semantic identity is part of the condition on the usability of the set of syntactic alternatives. This usability condition is analogous to other such conditions which constrain the use of alternatives in other uses of alternatives, for instance, the one used in the computation of scalar implicatures (on Katzir's account described above) which states that the usable alternatives must entail the assertion. That the usability condition for accommodating ellipsis antecedents is one of (semantic) identity ought not to be surprising, although it remains something of a stipulation here.

One final point to note is that there may be other options for how one accommodates additional antecedents in addition to this. What I have spelled out here is a process for accommodating near-identical versions of A which will allow the right kind of looseness in form while not allowing just anything to serve as the antecedent for ellipsis. This is just one set of mechanisms, however. Thus one can imagine that there may additionally be the option of accommodating non-isomorphic antecedents which are available in "every context," such as cleft-based antecedents or copular clauses of the kind discussed in [Merchant \(2004\)](#). Alternatively, there may also be ways of combining distinct antecedents to create larger ones which may serve as the antecedent for ellipsis of a larger constituent, for instance with cases of split antecedents ([Webber, 1978](#)) or "sloppy VP-ellipsis" as discussed by [Hardt \(1999\)](#) and [Schwarz \(2000\)](#). The accommodation mechanisms are worryingly powerful, though, so any move to provide the system with such power ought to show how it can be constrained to avoid wild overgeneration. I have to leave this as a topic for future work, not least since the empirical picture with much of these topics is still very sparse (e.g. typically focusing on VP-ellipsis only).²⁸

Having introduced the system, let us now consider the two classes of mismatches which we have focused upon above to show it in action.

4.3. Deriving tolerable mismatches

The system in (50)–(51) is capable of accounting for syntactic mismatches between E and A by virtue of the accommodation process which generates the set of formally distinct antecedents, Ad(A). To see how this would work, consider a case where the only difference between E and A is in the form of the participle:

(52) John has slept, and now Mary will ~~sleep~~ too.

Since E and A are not identical, accommodation is required to create a usable version of A. To this end, we take the VP and create a set of alternatives; this may include VPs containing different predicates (like *dozed*), but these will be excluded by the semantic identity condition on Ad(A). This set includes A', the bare VP *sleep*, which is obtained by substituting the V which bears features encoding the participial morphology with a bare form of V, the infinitive; since this additional antecedent A' is syntactically identical to E, (50) is satisfied and so ellipsis is possible.

²⁷ Merchant's (2001) GIVENNESS would also suffice in many cases, although not all: see footnote 30.

²⁸ I leave off discussion of the radical departure from isomorphism represented by "pseudosluicing," where an apparent sluice is actually derived an underlying copular sentence of the kind used in clefts, where the subject is a predicate anaphor, the object is extracted to be the *wh*-remnant (see e.g. [Erteschik-Shir, 1977](#); [van Craenenbroeck, 2010](#)).

(i) John kissed someone, but I don't know who ~~it was~~.

In his discussion of sentence-initial fragments, [Merchant \(2004\)](#) argues that copular parses of this kind are freely available in any discourse and as such are not subject to the requirement that there be an identical antecedent in the discourse for them to be elided. If so, we need not allow our identity condition to account for these, since they do not require accommodation of a version of the overt antecedent.

As a reviewer notes, the facts regarding when pseudosluicing is available for the resolution of ellipsis are more complicated than one might expect if it were true that copular clause sources for ellipsis sites were always available as a matter of course, as there are many circumstances in which they seem not to be available (see e.g. [Rodrigues et al., 2009](#)). However it strikes me that many of the conditions on pseudosluicing may derive from the properties of clefts (see [Rodrigues et al., 2009](#)) or specific restrictions on the morphological form of ellipsis remnants (see [Barros et al., 2014](#)) rather than the identity condition itself. See [Barros \(2014\)](#) for much discussion of these issues.

Now let us consider one of the key tolerable mismatches from section 3.1, where we saw that the form of *be* could mismatch between E and A. (53) repeats (24a) (from Potsdam, 1997):

- (53) John was being examined, but Jack really should ~~be examined~~ also. = (24a)

What needs to be changed here is the form of *be*, so this requires us to take the antecedent constituent A and generate alternatives by substituting the *-ing* form of *be* for a bare form to create an A' which will be identical to E. This is of course straightforward, but an issue that needs to be addressed regarding (53) and those related examples is why they are often of marginal or slightly degraded status. Here I believe the answer lies in the fact that taking the option to elide *be* with the rest of the VP requires us to do accommodation in order to satisfy (50), which is presumably a computationally costly procedure²⁹; this would be avoided if we chose the option to elide the slightly smaller constituent which excludes *be*, and since there is no obvious semantic or discourse structure-based reason for choosing one option or another, some very general constraint on minimizing effort is violated, leading to some degradation. Note that the claim here is not that ellipsis is always degraded when accommodation is invoked, but rather that ellipsis is degraded when accommodation is invoked when it seems clear it could have been avoided. For instance, there is no way to avoid accommodation with (52), so no penalty is incurred.

Let us now consider in more detail the most dramatic departure from syntactic identity between E and A that we saw above: the Gaelic cases where verbal ellipsis of a constituent containing a trace of the verb takes a TP with the verb in situ as its antecedent.

- (54) Q: A **bheil** thu a' faighinn leabharaichean bho Fheargais an-dràsta?
 C-Q be-PRES-IND 2SG IMP-ASP get-VN books from Fergus just-now
 "Are you getting books from Fergus just now?"
 A: Chan **eil**, ach **fhuair** an-dè!
 C-NEG be-PRES-DEP but get-PST-IND tomorrow
 "I'm not ~~getting books from him~~, but I did ~~get books from him~~ yesterday!" = (39)

In this case E and A do not just differ in the feature specification of corresponding heads, but also in whether or not they are present, as E hosts a successive-cyclic head movement chain which leaves variables in (at least) V, Asp and T; in A, V is filled by the infinitive form of the verb, Asp is filled by an aspectual particle, and T is occupied by the variable left by movement of T+*bith* to Fin. This is schematized in (55) (A and E underlined) with variables in bold:

- (55) [_{FINP} bheil λx [_{TP} thu **x** [_{ASPP} a' [_{VP} faighinn leabharaichean...]]]]
 [_{FINP} fhuair λy [_{TP} mi **y** [_{ASPP} **y** [_{VP} **y** leabharaichean...]]]]

What is required here, then, is that A be manipulated to create an A' that has variables in Asp and V. This may be done with three iterations of (51b-iii), two to replace verbal heads with variables (to be bound by the binder of the variable in T, here all **x**) and one to replace *thu* with *mi* (vehicle change of the subject).

- (56) a. A = [_{TP} thu **x** [_{ASPP} a' [_{VP} faighinn leabharaichean...]]]
 b. Step 1: replace *faighinn* with **x** (by (51b-iii))
 A' = [_{TP} thu **x** [_{ASPP} a' [_{VP} **x** leabharaichean...]]]
 c. Step 2: replace aspect head *a'* with **y** (by (51b-iii))
 A' = [_{TP} thu **x** [_{ASPP} **x** [_{VP} **x** leabharaichean...]]]
 d. Step 3: replace *thu* with **mi** (by (51b-iii))
 A' = [_{TP} **mi** **x** [_{ASPP} **x** [_{VP} **x** leabharaichean...]]]

The usability condition (51d) would be satisfied here³⁰ since $\llbracket A \rrbracket = \llbracket A' \rrbracket$ given a variable assignment like **x** = *fhuair* (with an appropriate semantics for verb movement chains) and the shift in deictic centre (*mi* and *thu* both mapping onto the

²⁹ This idea is also prefigured by Potsdam (1997:8–9), although it is put in different terms there.

³⁰ As a reviewer notes, a semantic identity condition like *EGIVENNESS* would not suffice here as A' doesn't actually entail A here (even after existential closure of the head trace variables). The same problem would hold if we simply took *EGIVENNESS* to be our ellipsis identity condition, since E would not entail A. As such, examples of this type – or more precisely, the fact that they are grammatical while the opposite configuration with asymmetric head extraction from A is ungrammatical – present a problem for *EGIVENNESS* in the absence.

same individual). Since this accommodated antecedent A' would be identical to E , the ellipsis identity condition would be satisfied. Thus the system allows for mismatches in extraction in those cases where the extraction is from E and not from A , as well as the cases where the content of heads within E and A are different.

The proposed system allows us to account a number of other mismatches between E and A in a similar fashion, although some issues remain to be explored more fully. Mismatches with respect to the form of negative polarity items (Sag, 1976; Merchant, 2013a) like (57) can be dealt with by replacing the NPI determiner *any* with its corresponding PPI *some* to create an isomorphic antecedent. Importantly, this system should also be able to deal with trickier cases like (58), from Sauerland (2004a), where the NPI is idiomatic and does not alternate with a non-PPI form in the same way.³¹ With these, substituting the idiomatic object with a full DP like *some money* ought to be allowed by the semantic conditions, since the alternative VP which this derives would have the same meaning as the NPI version, although it remains to be established exactly what the procedure would be for substituting *some money* in here, since it is not a lexical item.³²

(57) John didn't bring **any** wine, but Mary did ~~bring some wine~~.

(58) I don't have **a red cent**, but Kazuko might ~~have some money~~.

Vehicle change cases like (59) would be derived straightforwardly by substituting pronouns in the appropriate places, just like was demonstrated for replacement of *thu* by *mi* in (54) above, again subject to satisfaction of the condition which ensures that the reworked antecedent is semantically identical to both the source antecedent and the elided constituent.

(59) They want to hire **John_i**, and he_i knows they do ~~want to hire him_i~~ too.

Whether it is wise to allow the substitution process to replace one nominal with any other nominal so long as it satisfies semantic identity will have to remain an open issue for now. As a reviewer notes, this system seems to predict that a pronoun or r-expression could be substituted by an anaphor, but this doesn't seem to be generally possible, as (60) shows (Fiengo and May, 1994). One might try to explain these as cases of a failure of semantic identity, with the reflexivized predicate having a different interpretation, appealing to the fact that the opposite configuration (61) also fails to yield the switched (strict) interpretation for most speakers as well (though see Kennedy and Lidz, 2001 for a remarkable class of principled exceptions).

(60) *They like **him_i**, and he_i does ~~like himself_i~~, too.

(61) *?John_i likes **himself_i**, and Bill does ~~like him_i~~

Clearly this and related matters of strict/sloppy identity requires more attention than I can afford it here, but it seems likely that the relevant restrictions will fall out of the semantic component of the theory rather than restrictions on the generation of syntactic alternatives.³³

4.4. Restricting intolerable mismatches

The accommodation procedure in (51) allows for a wide range of syntactic mismatches between E and A , but it does not allow for any old pairing. The primary restriction on accommodation is the semantic condition in (51d), which ensures that accommodation only creates semantically identical additional antecedents. But in addition, we also have the

³¹ In the context of an alternative account of polarity mismatches in terms of syntactic identity, Merchant (2013a) analyses examples with polarity-sensitive minimisers like *a wink in sleep a wink* as involving no actual mismatch; rather the ellipsis site is taken to be identical, as in (i). Merchant points out that non-elided counterparts are grammatical, at least when they have an 'echoic' flavour, as in (ii).

(i) John didn't sleep a wink, but Mary did ~~sleep a wink~~.

(ii) John didn't sleep a wink, but Mary *did* sleep a wink – in fact, she slept all morning!

It is less clear to me that this works for (58), as *Kazuko might have a red cent* seems very strange to me even in an echoic context. However it is also my own judgment that (i) and Merchant's other examples with more familiar minimizers are much more well-formed than (58), so this may be a non-issue for Merchant's account if such judgments hold across speakers.

³² Note that mismatches of this kind would be ruled out by a condition like Chung's (2006) "no new words" condition. See also Hartman (2009) for other reasons to reject Chung's lexicocentric approach.

³³ Recently Elliott et al. (in press) have argued against traditional approaches to strict/sloppy in terms of structural conditions on parallel binding, proposing instead that the relevant conditions may follow from discourse conditions, adapting Robert's (2012) "Question Under Discussion" model. Whether their model accounts for the reflexive data remains to be established.

restrictions on accommodation, which is restricted to manipulating the structure which it starts with a small set of operations and creating additional antecedents that are at most as complex as the source structure. This dictates that it should generally be impossible for E to be a structurally expanded version of A, since there is no operation of *addition* for adding nodes to A; but in most cases this would be handled by the semantic component of the identity condition, since in most cases expanding A would create semantically distinct structures.

However, the more interesting cases are where *substitution* is restricted from applying. Recall from earlier that I argued that substitution of one node for another in A in the creation of alternatives was restricted to applying only if the A' that is created is at most as complex as A; this was taken to be a reflex of the general constraint on creating alternatives which are more complex than A. This blocked cases where we tried to substitute a maximally simple node, such as a variable, for a more complex node, such as head of the relevant category which is specified for lexical content. An immediate consequence of this is that it derives the syntactic identity constraint in (44), repeated here.

(62) A variable cannot provide an antecedent for ellipsis of a non-variable.

In deriving this constraint, we thus derive the key syntactic mismatch data from above, such as Warner's *be*-deletion cases, the broadly similar restriction on Gaelic verbal ellipsis, Merchant's constraint on voice mismatches in ellipsis with A'-extraction and Chung's constraint on sprouting oblique complements.

Let us demonstrate this by considering one of Warner's key cases of *be*-deletion once more:

(63) *John was punished, and you should too. = (19)

Here E contains the unraised nonfinite *be* VoiceP, so ellipsis will only be possible if an identical VoiceP can be found in the context. The VoiceP in the antecedent A will not do here, however, it has a variable in the head position in the VoiceP, left by head movement of *be* to T.

(64) A: [TP John [TP' T+be λy [VoiceP y [VP punished]]]]
 E: [TP you [TP' T+should [VoiceP be [VP punished]]]]

Accommodation would not work here, as it would not be possible to generate an additional antecedent A' which would be syntactically identical to E as this would require replacing the variable in VoiceP in A with the fully specified head *be*. Since such an alternative cannot be generated (it involves creating a more complex alternative), the identity condition cannot be satisfied and so ellipsis.

The same problem would obtain in all the other cases above, where a variable needs to be replaced by a lexical verb (the Gaelic cases), a full argument (the voice mismatches), or by a complex XP of the same category (sprouted oblique complements). In all cases, accommodation cannot create the relevant alternatives, since they are more complex than the source structure, and so accommodation fails to create an additional antecedent that is identical to the elided constituent. The system proposed here thus derives the core set of syntactic identity restrictions from the complexity condition on the generation of alternatives, rather than from some specific constraint on what kinds of syntactic material need to be identical like the "special heads" condition of Chung (2013). In effect, this corner of recalcitrant data falls out as a quirk of how the alternative generation procedure works, with all of the other major restrictions on ellipsis identity following from the semantic condition on the usable alternatives.

5. Conclusion

In this article I have re-examined the set of tolerable and intolerable syntactic mismatches between an elided constituent E and its antecedent A and argued against Chung's (2013) "special heads" condition on ellipsis, which states that syntactic identity is required to hold between a specific set of syntactic heads. First, I showed that the common factor with the intolerable mismatches considered by Chung is not non-identity of a set of special heads, but non-identity with respect to the position of variables, an effect which I described in terms of Parallelism. Considering a wider set of intolerable mismatches, in particular with respect to elements in the IP-domain, I then showed that Parallelism was too restrictive, and instead we saw that the core constraint that lies behind the intolerable syntactic mismatch is in fact a condition on variables serving as antecedents for ellipsis of non-variables.

I then proposed a syntactic implementation of the ellipsis identity condition which allows for "looseness" of identity between E and A by way of accommodation which, I argued, is structurally conditioned and semantically restricted. I argued that this accommodation process is unable to replace variables in A with more complex elements, due to a general complexity constraint on accommodation, and I thus showed that this derived the restriction on variables serving as

antecedents for non-variables without recourse to the statement of some independent constraint. The loosened syntactic identity condition thus allows for the tolerable mismatches, but it is restricted so that it rules out the intolerable mismatches. A great deal of work remains to be done here, with open questions remaining about the semantic component of the identity condition, the different kinds of complexity which the alternative-generating procedure is sensitive to, and the similarities and differences between ellipsis and deaccenting. At the very least, I hope to have carved out an alternative generalization regarding the nature of syntactic identity effects and shown that this is better understood in terms of a syntactic identity theory which is loose in some areas but strict in others.

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