Tag Questions and the Typology of VP Ellipsis*

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Abstract

I present a detailed crosslinguistic study of VP ellipsis and 'dependent' tag questions – those exhibiting morphosyntactic dependencies with their host clauses (e.g. *John can go, <u>can't he?</u>*) – which reveals a novel implicational universal: if dependent tag questions (a rare phenomenon) are available in a given language, then canonical VP ellipsis (also rare) is independently available in that language as well. I use these findings to support an analysis in which dependent tag questions are full question clauses reduced by VP ellipsis. Aside from its contribution to our understanding of tag questions, this paper also represents one of the only attempts in the literature to characterize the empirical profile of VPE across multiple typologically diverse languages.

Keywords: Tag questions, VP ellipsis, verb movement

1. *Introduction*

Two competing proposals on the structural makeup of 'dependent' tag questions such as (1) were entertained in the early generative literature:

(1)   a.   John left, didn't he?
        b.   Mary hasn't read that book, has she?

Beginning with Klima (1964), one proposal held that the question component (the material following the comma) was syntactically derived from its declarative host (the material preceding the comma) by means of a copying operation within a Transformational framework. The other proposal, first developed in Huddleston (1970), argued that the question component was not derived from the host, but was instead a full, independent question clause, reduced under identity with the

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host clause by way of a deletion process we now call ellipsis. Since that time, the literature on tag questions has tacitly adopted Huddleston's approach,[1] and little else has been said about the means by which the tag clause acquires its reduced stature. As a result, the eruption of recent work on ellipsis that began with Johnson (2001, 2004) and Merchant (2001, 2004) has not included any mention of tag questions among the set of phenomena thought to be derived by ellipsis. I aim to remedy this oversight by providing data from tag questions that demand consideration given their consequences for the theory of ellipsis.

In this paper, I support the claim that dependent tag questions such as (1) involve two distinct clauses by showing that the question component of such examples has undergone 'VP ellipsis'[2] (VPE) of exactly the sort seen elsewhere in the grammar, in contexts entirely independent of tag questions. Once the missing material is properly accounted for, we can only conclude that the 'tag' part of a tag question has full clausal status as a polar question.

I motivate this claim first in English, showing that tag clauses exhibit several distributional and behavioral similarities with non-tag clauses that involve VPE, particularly with respect to licensing and auxiliary stranding. I then apply the same methodology in a novel typological study of tag questions in other languages, including Taiwanese, Danish, and Lebanese Arabic. In all cases, languages with dependent tag questions also have ellipsis within the verbal domain *independent* of tag questions. Thus, for each language, the empirical profile of its VPE operation matches the empirical profile of its tag questions, including all effects arising from the presence or absence of V-raising in each language, a criterial factor in the typology of VPE (Goldberg 2005). Consideration of this property in particular reveals a variety of language-specific idiosyncrasies in the behavior of VPE in these languages.

This observation gives way to a one-way implicational universal: any language with dependent

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[1]In an antisymmetric reinterpretation of Klima (1964), den Dikken (1995) attempts to derive the content of a tag from its host, yielding a mono-clausal structure with the tag generated inside the host clause. See Oehrle (1987), McCawley (1988:479-490), and Sailor (2009) for extensive counterarguments.

[2]The term 'VP ellipsis' has become potentially misleading following recent work arguing that ellipsis in the English verbal domain does not target VP, but instead targets some slightly larger projection, e.g. vP (Johnson 2004, Merchant 2013, Aelbrecht 2010) or an inflectional head related to Voice (Sailor, in progress). Throughout, I use 'VPE' to refer to ellipsis of a verbal projection, setting aside questions about its precise category (but cf. §4.2.2).

tag questions will necessarily have VPE in non-tag environments. We conclude, then, that tag questions have no special status in the grammar beyond that of their component parts, namely (negative) questions and VPE. Thus, this study expands the empirical domain of ellipsis-derived phenomena to include tag questions (previously assumed, but never supported), while also expanding the empirical domain of tag questions to include languages other than English.

2. *Background*

2.1 *On tag questions*

The term 'tag question' is commonly used to refer to (some part of) examples such as (2) and (3) – either to the material following the comma specifically, or to such sentences as a whole:

(2) a. Sharon could probably pull a muscle doing that, couldn't she?
     b. Jeremy's restraining order hasn't already expired, has it?

(3) a. Sally can't come because she's busy cleaning her dungeon, right?
     b. Ron will be here soon with the crackers and spreadable meat, yeah?

These commas are not merely orthographic conventions: they represent a prosodic boundary[3] that separates what I will call the 'host clause' from the 'tag clause' (anticipating that a clausal analysis of the material following the comma is to be motivated in what follows). A string S is a 'tag clause' if, for a semantically non-interrogative host clause H, the pronunciation of S in a distinct prosodic phrase immediately following H has the effect of introducing a question[4] about (some part of) the denotation of H. The presence of an intonational break between the host clause and the tag crucially distinguishes tag questions from sentence-final question particles (e.g. in Mandarin Chinese): the former, but not the latter, are prosodically separated from the rest of the clause; and, while clause-initial Q-particles are attested in various languages (e.g. Yiddish), initial tag questions are unattested

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[3] The strength of the intonational break separating the tag and host clause varies, but is no weaker than an intermediate phrase break in standard ToBI terminology (Reese & Asher 2007). See O'Connor (1955), Ladd (1981), Bolinger (1989:115-132), Reese & Asher (2007), and references therein for the intonational properties of tag questions and their interpretive effects.

[4] The notion of 'question' here must be broadly construed, such that it includes e.g. rhetorical question readings. Even still, this may be insufficient for certain types of tag questions that I leave aside here (e.g. those with falling/declarative intonation: see references in fn. 3).

(see Siemund 2001 for more on this distinction).

Under this definition, two basic types of tag questions emerge: the 'dependent' type, seen in (2), and the 'invariant' type, exemplified in (3). These terms evoke the nature of the tag clauses' content: whereas the material within a dependent tag clause co-varies with the content of its host, the form of an invariant tag clause is unaffected by the form of its host. The bulk of the discussion that follows will focus on tag questions of the dependent type in (2), although I consider possible analytical extensions to the invariant type in the conclusion (§5).

Descriptively, dependent tag questions (henceforth simply 'tags') in English typically contain: (i) a subject pronoun, coreferential with the host clause's subject, (ii) a modal or tensed auxiliary identical to that of the host (otherwise "do"-support occurs), and (iii) reversed polarity from the host clause.[5] For detailed discussion of (i)-(ii), see Culicover (1992) and Sailor (2009), a.o.; for discussion of (iii), see Klima (1964), Huddleston (1970), Oehrle (1987), and McCawley (1988:479-490), a.o. As we will see in §4, tags in other languages do not share all of these properties. For detailed empirical descriptions of both dependent and invariant tag questions in other languages, see Moravcsik (1971) and Axelsson (2011).[6]

2.2 *On VPE*

Ellipsis is a crosslinguistic phenomenon in which a syntactic constituent is rendered unpronounced (Merchant 2001, a.o.; see Merchant to appear for a survey of the literature). VPE is a specific type of ellipsis that silences a verbal projection (see fn. 2), leaving any adjacent aspectual auxiliaries, negation, and modals 'stranded' (italicized below):[7]

(4) a. Chris threatened to [come to the party]. Thankfully, he *didn't* [~~come to the party~~].
     b. Doug should [take a vow of silence], and Nick *should* [~~take a vow of silence~~], too.

Lobeck (1995) formalizes this observation as a necessary condition on the licensing of VPE: it

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[5]While same-polarity tags are widely attested (in the affirmative: *John left, did he?*), their usage and interpretation differ significantly from the opposite-polarity type, so I leave them aside here (see Cattell 1973).

[6]Axelsson (2011) is, to my knowledge, the only other detailed crosslinguistic study of dependent tag questions besides the present study, which itself is an extension of Sailor (2009).

[7]Throughout, I use strike-through to indicate elided material. Except where explicitly mentioned otherwise, struck-through material constitutes the only available interpretation for an ellipsis site.

must be licensed by phonologically-overt material in T^0.[8] At the same time, all varieties of ellipsis are subject to an 'identity' condition, which Merchant (2001:26) characterizes as a relationship of mutual entailment between the elided material and a contextually-salient antecedent.

However, neither of these conditions can account for the overall rarity of VPE crosslinguistically (Goldberg 2005), especially compared to TP ellipsis, which appears to be far more widespread, perhaps even universal (Merchant 2001). Indeed, until relatively recently, English was thought to be the only language with VPE. Only modals, tensed auxiliaries, and infinitival "to" can satisfy the VPE licensing condition in English, as they are the only syntactic objects in the language capable of being pronounced in T^0 (in non-focal affirmative clauses). This is because English is a V-in-situ language: main verbs do not raise to T^0. However, many languages of the world have generalized V-raising, meaning their finite main verbs raise to T^0 (and perhaps higher) in most clause types. In principle, with the main verb occupying T^0 in such languages, the VPE licensing condition should be satisfied. If satisfaction of this condition were truly sufficient to license VPE, then VPE ought to be crosslinguistically widespread, contrary to fact.

Indeed, the sufficient conditions for the existence of VPE in a language are, at this point, largely unknown (but see Thoms 2010). Still, despite being crosslinguistically rare, VPE *is* attested in languages other than English, including a variety of V-raising languages.[9] In such languages, the verb raises out of the ellipsis site to at least T^0, a position above the ellipsis site. This movement allows V to survive, while anything remaining inside the verbal domain is elided. This is sketched in the abstract structure in (5), and an example from Irish Gaelic is in (6):

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[8]This is a crude simplification, but one that will suffice for our purposes; see Lobeck (1995) for the complete analysis, which likens ellipsis sites to empty categories, making them subject to the ECP. See Thoms (2010) for an alternative.
[9]Lobeck (1995) actually predicts that such languages should not exist, drawing on French and German (both V-raising in one sense or another), two languages that happen to lack VPE. See Goldberg (2005) for some discussion.

(5)
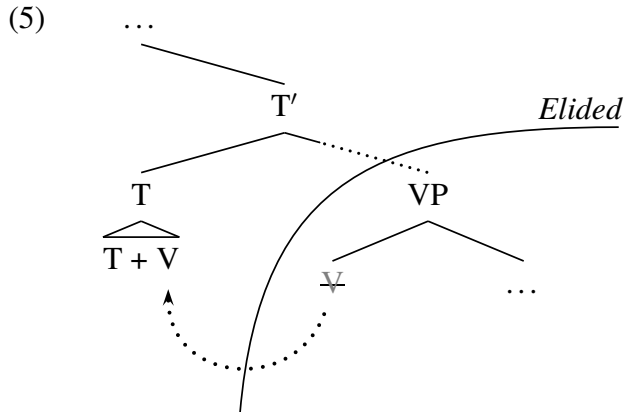
(6)   *Irish Gaelic (adapted from McCloskey 1991:274)*

    Q: ar   *cheannaigh$_i$* [t$_i$ said teach]?
          C.INT buy.PAST   they house
          "Did they buy a house?"

    A: creidim gur   *cheannaigh$_i$* [~~t$_i$ said teach~~]
          I-believe C.PAST buy.PAST   they house
          A: "I believe they did." (lit. "I believe that bought")

This pattern has come to be known as 'V-stranding VPE' (Goldberg 2005), but the presence of VPE within this pattern is actually not obvious. That is, examples such as (6) could reasonably be derived by argument drop rather than VPE, as depicted in (7):

(7)   *Possible structures: VPE vs. argument drop*

    A′: creidim gur   cheannaigh$_i$ [~~t$_i$ said teach~~]
          I-believe C.PAST buy.PAST   they house

    A″: creidim gur   cheannaigh *pro*$_{Subj}$ *pro*$_{Obj}$
          I-believe C.PAST buy.PAST

The sentences in (7) are string-identical, meaning only structural diagnostics would be able to tease them apart. Goldberg (2005:23-122) establishes just such a set of diagnostics (see also references therein and Gribanova 2013), and is able to show convincingly that, for at least several V-raising languages, argument drop *cannot* be the source of this pattern, leaving V-stranding VPE as the only possible derivation. In what follows, I apply these diagnostics where necessary to help rule out a null argument analysis for the data I present.

    Besides Irish Gaelic (see McCloskey 1991:263 for reasons why the subject stays "low" in Irish, inside the verbal ellipsis site), this V-stranding VPE pattern has been established for several lan-

guages, including Swahili (Ngonyani 1996), Hebrew (Doron 1999), Russian (Gribanova 2013), and others (Goldberg 2005). This is a non-trivial departure from the traditional empirical profile of VPE, which is based on the 'aux-stranding' pattern of English. The typology of VPE must therefore accommodate crosslinguistic variation with respect to the V-raising parameter ([+/- V-raising]).

We will return to the typology of VPE following the discussion of ellipsis in tag questions in the next two sections (and see the references in fn. 2 for more).

3.   *VPE in tag questions: evidence from American English*

In this section, I systematically compare American English[10] tag questions to regular VPE clauses, and I conclude from the preponderance of their similarities that VPE is a necessary component in the derivation of tags. That is, sentences containing tag questions involve (at least) bi-clausal structures: the tag itself has full clausal status, and achieves its diminutive stature by way of VPE.

The general intuition behind this – that tags are separate, reduced interrogative clauses – is hardly new, going back to at least Huddleston (1970), and is essentially taken for granted in the few works treating tags since then (but see fn. 1). Its theoretical implementation is usually achieved by fiat: it is hard-coded in the grammar as an operation unique to tag questions (Culicover 1992,[11] a.o.). However, the need for a tag-specific operation is obviated if tags acquire their reduced stature simply as the result of VPE, as the data below suggest.

Diagnosing ellipsis in tag questions is, however, no simple matter. By their nature, tag questions provide frustratingly little material to manipulate: because of their inherently close relationship to the host clause, their content is always maximally given in the discourse, often differing from their hosts only in clause type and polarity. As a result, some of the classical properties of VPE – the availability of sloppy identity, the ability to be embedded and occur within islands, etc. – are impossible to test for in prototypical tag question environments.[12] Likewise, diagnostics requiring c-command

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[10]There is non-trivial variation among American, Canadian, and British varieties of English with respect to the precise size of structure elided by VPE, as well as its resulting interpretation, particularly in tag questions. This remains to be formally investigated, but see Sailor (2009) for some discussion.

[11]Although Culicover (1992) argues that tags are *not* grammatical primitives, his analysis involves ad hoc mechanisms that are apparently unique to tags.

[12]However, a consequence of the general approach taken here is that there ought to be no deep syntactic difference

are of no use since such a relationship does not seem to hold between elements within the host clause and those in the tag clause (Sailor 2009:§3.1.2). The only obvious way to check whether tag questions involve ellipsis is to simply construct near-minimal pairs of the two phenomena, and see how they compare. Such a comparison yields a clear pattern: tag questions and VPE clauses exhibit identical behavior with respect to the auxiliaries they can strand, as well as the obligatory presence of a VPE licenser in T^0 (Lobeck 1995). I take this as strong evidence that ellipsis is responsible for the reduction of the tag clause. In §4, I present the results of a crosslinguistic study revealing that tag questions look identical to VPE clauses in precisely the same respect in other languages.

Lobeck (1987:68-94) describes patterns of modal/auxiliary stranding in English VPE clauses, laying out the complete set of aspectual and modal material that can be left adjacent to the ellipsis site. Below, we see these same patterns consistently arising in tags, as well. Specifically, the full battery of finite VPE-licensing heads – heads occupying T^0, the position from which VPE is licensed (Lobeck 1995) – can also be found in tag clauses, adjacent to the missing material (prior to T-to-C movement[13] for question formation), indicating a VPE site. Moreover, just as T^0 must be filled in VPE, it must be filled in tags, as well.

First, consider the modals:

(8)   *Modals*
    a.   Mister Ed couldn't read, but Arnold Ziffel *could* [~~read~~].   *VPE*
    b. *Mister Ed couldn't read, but Arnold Ziffel [~~could read~~].   *VPE*
    c.   Mister Ed couldn't read, *could$_i$* he t_i [~~read~~]?   *Tag*
    d. *Mister Ed couldn't read, (did) he [~~could read~~]?   *Tag*

Here, tags and VPE pattern alike: if there is a modal in the antecedent, it cannot be elided in the

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between prototypical tags like *John left, didn't he?* and parallel discourses involving e.g. a negative question with a contrastive subject, i.e. *John left, didn't Mary?*. Indeed, if any difference between them exists, then I predict it would be pragmatically conditioned – the result of some pragmatic constraint on clausal parataxis, for example – rather than arising from some fundamental syntactic distinction between tag questions and other types of (negative) questions reduced by ellipsis. I intend to explore this further in future work.

[13] Assuming that T^0 is the VPE licenser in English (Lobeck 1995), and that ellipsis obeys cyclic Spell-Out (Gengel 2009), it is worth pointing out that head movement of the licenser has no observable effect on VPE; i.e., the constituent undergoing VPE is the same whether T^0 moves or not. This is a simple point, but one that deserves mention in light of the ongoing debate over the nature of head movement (PF vs. non-PF) and its interaction with ellipsis (Thoms 2010). See Aelbrecht (2010) for arguments that constituents elide as soon as their ellipsis licensers are merged, meaning VPE would always occur before T-to-C, and see §4.1.2 for potential consequences in Danish.

second clause. We can tell that the trace of the modal (in T^0, before moving to C^0) is not deleted in the tag clause in (8c) because modals are higher than uncliticized negation (9a), and in tag questions, this negation survives (9b):[14]

(9)   a.   Most dogs can smell fear, but Sparky could *not* [~~smell fear~~].   *VPE*
       b.   Most dogs can smell fear, can$_i$ they t$_i$ *not* [~~smell fear~~]?   *Tag*

Thus, tags and VPE clauses pattern the same with respect to stranded modals.

The same reasoning can be applied to the remaining set of finite VPE licensing heads, all of which behave the same in tag clauses. For example, it appears that non-finite perfect "have" cannot be elided by VPE (in American English), and this also holds for tags. Specifically, a VPE clause whose antecedent contains non-finite perfect "have" can only be interpreted as having perfect aspect if an overt instance of this auxiliary is stranded outside the VPE site, as in (10a). If no such instance of "have" is present in the VPE clause, as in (10b), then the interpretation of the missing material cannot include perfect aspect (as indicated with #). Instead, the only available interpretation is one involving an aspectual mismatch between antecedent and VPE clause, as indicated in the struck-through material in (10c).[15] This state of affairs is fully replicated in tags (10d-f), with the mismatched reading from (10c) ruled out for its tag question equivalent in (10f) as expected (since the mismatched aspect in the tag clause counts as discourse-new, and new material is prohibited in canonical tag clauses; see fn. 12):

(10)   *Perfect "have"*
       a.   Boober should have eaten, and Squeaker should'*ve* [~~eaten~~], too.   *VPE*
       b.   #Boober should have eaten, and Squeaker should [*~~have~~* eaten], too.   *VPE*
       c.   Boober should have eaten, and Squeaker should [~~eat~~], too.   *VPE*
       d.   Boober should have eaten, shouldn't he *have* [~~eaten~~]?   *Tag*
       e.   #Boober should have eaten, shouldn't he [*~~have~~* eaten]?   *Tag*
       f.   #Boober should have eaten, shouldn't he [~~eat~~]?   *Tag*

These data show that the interpretation of perfect aspect associated with the auxiliary "have" is not recoverable when that auxiliary is not pronounced in the ellipsis clause. This suggests that the

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[14]While tag questions with uncliticized negation such as (9b) are acceptable, they have a distinctly archaic or stylized feel to them, just like their unreduced negative-question counterparts (Romero & Han 2004:622).
[15]See Aelbrecht & Harwood (2012) and Sailor (in progress) for detailed treatment of these facts.

position occupied by non-finite "have" is higher in the structure than, and thus properly outside of, the maximal constituent elided by VPE (see references in fn. 15). Crucially, tag questions continue to exhibit the same properties as VPE with respect to what can(not) be omitted and recovered.

This behavioral symmetry between VPE and tag clauses is also present in (11) – the apparent optionality of eliding non-finite "be" in VPE clauses (11a) holds for tag clauses as well (11b):[16]

(11)   *Non-finite "be"*
    a.   Barry could be drinking, but he shouldn't (*be*) [~~drinking~~].   *VPE*
    b.   Barry could be drinking by now, couldn't he (*be*) [~~drinking~~]?   *Tag*

Furthermore, both VPE and tags allow multiple modals/auxiliaries to be stranded (in which case the optionality of non-finite *be* persists):

(12)   *Multiple stranded modals/auxiliaries*
    a.   Judy should have been fired, but I shouldn't have (been) [~~fired~~].   *VPE*
    b.   Judy should have been fired, shouldn't she have (been) [~~fired~~]?   *Tag*

The data in (8)-(12) show that VPE and tags treat modals/auxiliaries uniformly: they either strand in both environments, or they *optionally* strand in both environments. Finally, this uniformity persists with progressive *be* – it strands in *neither* environment:

(13)   *Progressive "be"*
    a.   Pizza Hole is being inspected, but Crab4U isn't [*being* ~~inspected~~].   *VPE*
    b.   *Pizza Hole is being inspected, but Crab4U isn't *being* [~~inspected~~].   *VPE*
    c.   Pizza Hole is being inspected, isn't it [*being* ~~inspected~~]?   *Tag*
    d.   *Pizza Hole is being inspected, isn't it *being* [~~inspected~~]?   *Tag*

In sum, we see that English tags (i) are reduced, (ii) contain at least one VPE licenser, and (iii) appear to lack the same span of structure as analogous declarative VPE clauses (see fn. 2). These similarities between tags and canonical VPE clauses are not coincidental: they follow if tag questions involve VPE in their derivation. In the next section, I present data from a wide array of languages bolstering this conclusion.

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[16]Canadian and British English speakers find examples such as (11) and (12), where material below T^0 is stranded, to be less preferable than those where nothing below T^0 is stranded (see fn. 10). One possible interpretation of these facts could be that VPE elides a larger structure in these dialects than it does in American English. To my knowledge, no claims of genuine syntactic variation have ever been made for American vs. Canadian English. More investigation is clearly warranted, but if this pattern is real, then it would represent a novel domain of dialectal microvariation.

4. *VPE in tag questions: evidence from a crosslinguistic survey*

The literature on tag questions is rife with the notion that dependent tag questions are unique to English (e.g. Lakoff 1972:917, who calls tag questions "bizarre and highly English-specific formations"). However, work in linguistic typology has shown that such claims of language-specific phenomena (particularly *English*-specific phenomena) rarely withstand empirical scrutiny. VPE was also thought to be an English-only phenomenon for decades until work in the early 90s began to reveal its effects in other languages (see Goldberg 2005 for references and discussion).

Below, I present data from a novel crosslinguistic survey of tags along with data from the existing literature (see fn. 6) showing that dependent tag questions are not unique to English, but are in fact attested in a typologically diverse set of languages. Each of these languages also shows evidence of having canonical VPE – by no means a crosslinguistically common operation (see §2.2) – and each language's dependent tag questions bear a direct similarity to its VPE clauses. The ellipsis-based account of tag questions I developed in §3 accommodates this correlation straightforwardly: tags pattern like VPE and exist only in languages that have VPE simply because the derivation of tags involves VPE fundamentally. In what follows, then, the ellipsis approach to tags receives diverse empirical support.

In extending the proposal to languages besides English, two predictions arise. First, I predict that each language with tag questions should exhibit evidence of VPE in non-tag environments. Second, I expect the tags in each language to pattern like VPE in obvious ways, including, but not limited to, the size of the structure that is unpronounced and the verbal elements stranded adjacent to it. I state these as universals, below:

(14) *Tag Question Implication*
      If a language L has dependent tag questions, then L also has VPE independently.[17]

(15) *Tag Question Generalization*
      Dependent tag questions in L pattern like VPE in L with respect to the type(s) of stranded

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[17]Crucially, this is a *one-way* implication: the presence of VPE in a language is not a sufficient condition for the existence of tags in that language (cf. Hebrew, Swahili, etc.). The sufficient conditions on the crosslinguistic distribution of tags remains an open question: see §5.

material in each.

To investigate the empirical coverage of these universals, I conducted a crosslinguistic survey and found seven languages with dependent tag questions: Taiwanese, Danish, Norwegian (and North Norwegian), Persian, Lebanese Arabic, Scottish Gaelic, and Brazilian Portuguese. Bringing these together with a few languages whose tag questions have been mentioned elsewhere (including Welsh, European Portuguese, and Irish Gaelic), I discuss a total of 10 languages, and show that each language exhibits evidence of a VPE operation independent of tag question contexts, and that this VPE operation strands the same material as is left behind in tag questions.[18] In other words, the universals in (14) and (15) will be shown to hold absolutely.

I group the languages according to their VPE type with respect to the V-raising parameter (see §2.2), beginning with data from the aux-stranding languages in §4.1, and moving to the V-stranding languages in §4.2.

4.1 *Tag questions in aux-stranding languages*

Besides English, the present study contains three languages whose tags *always* and *only* strand modal/auxiliary material (as opposed to main verbs). Given the implication in (14), we expect these languages to have VPE. More specifically, given the generalization in (15), we expect VPE in these languages to be of the aux-stranding type, consistent with the pattern seen in their tags.

4.1.1 *Taiwanese.*[19] Taiwanese (Sino-Tibetan: Min Nan) is an SVO language with an articulated hierarchy of modal and aspectual projections similar to English. A basic declarative is in (16a), and (16b) contains the corresponding yes/no question, formed using the Q-particle "kam":[20]

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[18]In addition to some of the languages I mention here, Axelsson (2011) also presents convincing evidence of dependent tag questions in Breton, Malayalam, and Meitei; thus, I predict that each of these languages should have VPE, as well. To this point I have been unable to secure consultants for these languages, so establishing the availability of VPE in each must be left to future work. Axelsson (2011) also mentions Cornish, Kiwai, Tamil, and Estonian as possibly having dependent tag questions, but notes that more investigation is necessary. To these, I add Tarao, Chothe, Eastern Armenian, and Samoan: I have seen suggestive evidence of dependent tags in these languages, but more data are necessary to determine this conclusively. I am not aware of any work investigating VPE in these languages.

[19]Linguistic resources for Taiwanese are not widespread. As a result, the transliterations (which omit tonal information, as it is not crucial here) and glosses given here should be taken tentatively. Thanks to Grace Kuo for the data.

[20]The curious linear position of the Q-particle "kam" in Taiwanese yes/no questions follows from the fact that, in this language, subjects are topics (which can be dropped), meaning they are located very high in the structure.

(16)   *Taiwanese declaratives and yes/no questions*

    a.   A-Ying u   thak cit-pun che
        A-Ying PERF read one-CL book
        "A-Ying has read the book"

    b.   A-Ying kam u   thak cit-pun che
        A-Ying Q   PERF read one-CL book
        "Has A-Ying read the book?"

Taiwanese has tags of the aux-stranding variety. They minimally contain the Q-particle "kam" and

a modal/auxiliary (identical to the host clause):

(17)   *Taiwanese tag questions*

    a.   A-Ying u   thak cit-pun che, (i)   kam bo
        A-Ying PERF read one-CL book s/he Q   NEG.PERF
        "A-Ying has read the book, hasn't he?"

    b.   A-Ying bo   thak cit-pun che, (i)   kam u
        A-Ying NEG.PERF read one-CL book s/he Q   PERF
        "A-Ying hasn't read the book, has he?"

Given that tags are present in Taiwanese, we expect VPE to be possible (cf. (14)), and we expect

the two to pattern alike (cf. (15)). These expectations are met:

(18)   *Taiwanese VPE*

    a.   A-Ying u   thak cit-pun che, A-Ha ma u
        A-Ying PERF read one-CL book A-Ha also PERF
        "A-Ying has read the book, and A-Ha has too"

    b.   A-Ying u   cim i   e   mama, A-Ha ma u
        A-Ying PERF kiss s/he POSS mother A-Ha also PERF
        "A-Ying$_i$ has kissed his$_i$ mother, and A-Ha$_j$ has kissed {his$_i$ / her$_j$} mother too"

In (18), everything below the aspectual auxiliary "u" is elided. The same amount of material is

missing from the tags in (17). Moreover, "u" cannot be omitted from the tags in (17), which follows

if it is serving as the licenser of VPE in each example.

    Interestingly, the progressive particle "teh" in Taiwanese cannot be stranded adjacent to a VPE

site, much like the behavior of progressive "being" in English seen above in (13) (see Sailor & Kuo

2010 for more on this 'Progressive Prohibition' in VPE). As expected, "teh" cannot be stranded in

a tag clause, either:

(19)   *Progressive "teh" cannot be stranded*

    a. A-Ying bo   teh chhih kau, tan-si A-Ha u   (*teh)
        A-Ying NEG.PERF PROG feed dog, but   A-Ha PERF PROG
        "A-Ying hadn't been feeding the dog, but A-Ha had been"

    b. A-Ying bo   teh chhih kau, (i) kam u   (*teh)
        A-Ying NEG.PERF PROG feed dog s/he Q   PERF PROG
        "A-Ying hadn't been feeding the dog, had he been?"

I take the shared behavior of VPE and tags seen here as evidence that Taiwanese tags are derived by VPE, and that Taiwanese accords with both the Tag Question Implication in (14) and the Tag Question Generalization in (15).

4.1.2 *Danish.*[21] Danish (Indo-European: Germanic) is a language that, like Taiwanese and English, uses a set of preverbal auxiliaries to mark e.g. aspect. When present in root clauses, the highest auxiliary raises through T^0 en route to a higher position consistent with a verb-second configuration (see Houser et al. 2009 for a summary of the Danish verbal system; example adapted from their #27), and this auxiliary expresses tense:

(20)   *Danish declarative (with auxiliary)*
    Mona og Jasper havde   vask-et   bilen
    Mona and Jasper have.PAST wash-PART car.DEF
    "Mona and Jasper had washed the car"

In root yes/no questions, these auxiliaries precede the subject, similar to English (but unlike Taiwanese). Consider (21) (Houser et al. 2009 #31):

(21)   *Danish yes/no questions (with auxiliary)*
    havde   Jasper vask-et   bilen
    have.PAST Jasper wash-PART car.DEF
    "Had Jasper washed the car?"

This also occurs in Danish tags:

(22)   *Danish tag question (with auxiliary)*
    Jasper havde   vask-et   bilen, havde   han ikke
    Jasper have.PAST wash-PART car.DEF have.PAST he   NEG
    "Jasper had washed the car, hadn't he?"

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[21]Thanks to Line Mikkelsen and Troels Knudsen for the data.

Given the existence of tag questions in Danish, we expect to see evidence of VPE, given the implication in (14). Houser et al. (2008, 2009) list several examples, as well as supporting diagnostics (ibid. 2009 #27):

(23) *Danish VPE (with auxiliary)*
  Mona og Jasper havde vask-et bilen, eller rettere Mona havde
  Mona and Jasper have.PAST wash-PART car.DEF or rather Mona have.PAST
  "Mona and Jasper had washed the car, or rather Mona had"

Consistent with our predictions, the material stranded in VPE clauses (23) is the same as the material stranded in the corresponding tag (22), modulo differences due to clause type.

When no auxiliaries are present in a root Danish clause, then, as a verb-second language, Danish begins to look very different from English in environments such as yes/no questions (Houser et al. 2009 #5b):

(24) *Danish yes/no questions (without auxiliary)*
  vaskede Jasper bilen
  wash.PAST Jasper car.DEF
  "Did Jasper wash the car?" (lit. "Washed Jasper the car?")

In root yes/no questions in Danish, the main verb precedes the subject if it is the highest verbal element in the clause (i.e. there is no auxiliary), as is consistent with its verb-second syntax.

Note, though, that Danish VPE never exhibits the V-stranding pattern. In root VPE clauses in which the main verb is the highest verbal element, this main verb cannot survive ellipsis (25a). This behavior is mirrored in tag questions (25b):

(25) *No V-stranding VPE in Danish*
  a. *Mona og Jasper vask-et bilen, eller rettere Mona vask-et
    Mona and Jasper wash-PART car.DEF or rather Mona wash-PART
    "Mona and Jasper washed the car, or rather Mona did"   *VPE*
  b. *Jasper læste ikke bogen, læste han?
    Jasper read.PAST NEG book.DEF read.PAST he
    "Jasper didn't read the book, did he?"   *Tag*

In both root VPE clauses and tag questions, the aux-stranding pattern is the only available strategy in Danish. If an auxiliary is not available in the clause to host tense, a pleonastic verb, *gøre* 'to do', is inserted (Houser et al. 2009):

(26) *Danish tag questions (without auxiliary: gøre-support)*

    a.   Jasper læste   bogen.   Gjorde Mona også
            Jasper read.PAST book.DEF did.PAST Mona also
            "Jasper read the book. Did Mona?"   *VPE*

    b.   Jasper læste   ikke bogen, gjorde   han
            Jasper read.PAST NEG book.DEF did.PAST he
            "Jasper didn't read the book, did he?"   *Tag*

Taking stock, the verb-second configuration forces the highest verbal element in Danish root clauses to move high in the structure (assume C^0). However, the language disallows V-stranding VPE, which suggests that the verb has *not* moved out of the verbal domain at the point in the derivation when VPE occurs. In other words, VPE in Danish 'bleeds' (destroys the environment for) movement in satisfaction of the verb-second requirement that would take the main verb to C^0.

This observation has non-trivial consequences. First, it supports a derivational view of ellipsis: namely, the theory that ellipsis is triggered during the course of the derivation (e.g. upon merger of the licensing head, or an instance of Agree between the licensing head and the elided XP: see Aelbrecht 2010), rather than being imposed post-syntactically. Second, it supports a particular analysis of verb-second syntax in which this particular type of verb movement is triggered by C^0 rather than T^0, making it fundamentally different from the V-to-T operation in Romance and elsewhere (Vikner 1995). That is, the main verb in Danish root clauses does not undergo movement to T^0 independent of its movement to C^0 (otherwise V-stranding would be possible). This interacts with the derivational theory of ellipsis straightforwardly: the trigger for VPE occurs earlier in the derivation (say, upon merger of T^0, the VPE licensing head) than does the trigger for verb-second movement (say, merger of C^0), meaning that the verb is still in-situ within the verbal domain at the point at which VPE occurs.[22]

This state of affairs properly accounts for the aux-stranding/*gøre*-support pattern in Danish VPE and tag questions, although it raises questions about the specifics of the verb-second derivation that

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[22]However, if VPE does not apply until T^0 is sent to Spell-Out (cf. Gengel 2009), rather than being triggered simply when T^0 is merged, then the verb-second movement and VPE would be assessed within the same Spell-Out domain (assuming there are no other phase heads between C^0 and v^0, as is standard). Presumably, this is also the case for VPE and V-to-T movement, and yet V-to-T is clearly able to apply in ellipsis contexts, given the existence of the V-stranding pattern in the grammar. I leave these interesting issues for future research.

I leave aside here. What is critical for the present discussion is only that the parallel between VPE and tag questions continues in Danish, with both (14) and (15) fully satisfied.

4.1.3 *Standard Norwegian & North Norwegian.* Standard Norwegian (Indo-European: Germanic) closely resembles Danish in its syntax. The availability of dependent tag questions in the former is just one such resemblance (Thoms 2012:12 and Axelsson 2011:807):

(27) *Standard Norwegian tags*

    a.   Johan har ikke lest Lolita, har han
             Johan has not read Lolita, has he
             "Johan hasn't read *Lolita*, has he?"

    b.   Maren kom igår,   gjorde hun ikke
             Maren came yesterday, did   she not
             "Maren came yesterday, didn't she?"

Like Danish, Standard Norwegian also has VPE as an available operation (Thoms 2012:8-12):[23]

(28) *Standard Norwegian VPE*

    a.   Johan har lest Lolita, men Kalle har ikke
             Johan has read Lolita, but Carl   has not
             "Johan has read *Lolita*, but Carl hasn't."

    b.   Johan har lest Lolita; har   du
             Johan has read Lolita have you
             "Johan has read *Lolita*; have you?"

Thus, Standard Norwegian straightforwardly attests the predictions made in (14) and (15).

A related variety, North Norwegian, which is spoken in and around the city of Tromsø (Bentzen 2007), provides an interesting indirect argument for the status of tag questions as question clauses reduced by ellipsis.[24] The distribution of VPE in North Norwegian is more restricted than in Standard Norwegian (but see fn. 23). Unlike the Standard variety (cf. (28)), North Norwegian does *not* allow VPE in canonical environments such as those in (29), which involve declarative clauses with stranded aspectual auxiliaries:

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[23]Bentzen et al. (2012:fn. 3) note that not all speakers accept such examples. See discussion of North Norwegian below.

[24]Thanks to Gary Thoms for bringing these facts to my attention (see also Thoms 2012), and to Kristine Bentzen for data and discussion.

(29)   *North Norwegian: VPE unavailable in declaratives*

    a. *ho påstod at ho ikke hadde lest Lolita, men ho hadde faktisk
         she claimed that she not had read Lolita but she had actually
         Intended: "She claimed that she hadn't read *Lolita*, but she actually had."

    b. *ho sa at ho hadde lest Lolita, og ho hadde faktisk
         she said that she had read Lolita and she had actually
         Intended: "She said that she had read *Lolita*, and she actually had."

However, this variety of Norwegian has dependent tags just like those of the Standard variety:

(30)   *North Norwegian tags*

    a. ho Maren kom igår, gjorde hun ikke
         she Maren came yesterday, did she not
         "Maren came yesterday, didn't she?"

    b. han Johan har ikke lest Lolita, har han
         he Johan has not read Lolita, has he
         "Johan hasn't read *Lolita*, has he?"

This fact would be surprising, and would appear to contradict the implicational universal in (14), except that North Norwegian *does* allow VPE if the clause it occurs in is interrogative:

(31)   *North Norwegian VPE: available in questions*

    a. han Peter har ikke lest Lolita. Har ho Hedda
         he Peter has not read Lolita has she Hedda
         "Peter hasn't read *Lolita*. Has Hedda?"

    b. han Peter har lest Lolita. Har ikke ho Hedda
         he Peter has read Lolita. has not she Hedda
         "Peter has read *Lolita*. Hasn't Hedda?"

Thus, although North Norwegian lacks VPE in non-interrogative contexts, its availability in interrogatives is sufficient to sustain tags. North Norwegian is therefore entirely consistent with universals (14) and (15), and provides support for the claim that tag questions are true question clauses that have undergone VPE.

4.1.4 *Summary of aux-stranding tag question languages.*   Taiwanese, Danish, and the Norwegian varieties described here all pattern quite similarly to English: each must strand modal/auxiliary material (and cannot strand main verbs) in VPE and tag questions. Thus, our predictions are attested for non-V-raising languages: the presence of tag questions indicates the presence of VPE, and the two pattern alike in every relevant way. We turn our attention now to the V-raising languages, where

the data look different, but the results are the same.

4.2 *Tag questions in V-stranding languages*

In what follows, I show that Scottish (and Irish) Gaelic, Persian, Lebanese Arabic, and Brazilian (and European) Portuguese have dependent tag questions, and they all exhibit VPE. Crucially, the tag question and VPE clauses in these languages exhibit the same V-stranding pattern, consistent with their syntax in non-VPE/tag contexts. I take this to be the final piece of evidence for a VPE analysis of tag questions.

4.2.1 *Scottish and Irish Gaelic.*[25]   Scottish Gaelic (Indo-European: Celtic) exhibits VSO order

in root declaratives. Corresponding yes/no questions are formed using a clause-initial particle *an*:[26]

(32)   *Scottish Gaelic declaratives and yes/no questions*

    a.   leugh   Calum an leabhar sin
           read.PAST Calum the book   DIST
           "Calum read that book"

    b.   an do   leugh   Calum an leabhar sin
           Q PAST read.PAST Calum the book   DIST
           "Did Calum read that book?"

Scottish Gaelic tags minimally contain the *an* particle and the verb from the host:

(33)   *Scottish Gaelic tag questions*

    a.   leugh   Calum an leabhar sin, nach do   leugh
           read.PAST Calum the book   DIST NEG.Q PAST read.PAST
           "Calum read that book, didn't he?"

    b.   cha do   leugh   Calum an leabhar sin, an do   leugh
           NEG PAST read.PAST Calum the book   DIST Q PAST read.PAST
           "Calum didn't read that book, did he?"

The only difference between these tags and those we saw in §4.1 is the presence of the main verb, which is required in the former but impossible in the latter. Crucially, Scottish Gaelic tags look exactly like regular yes/no questions in the language, only smaller. To that end, we expect VPE to

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[25]Thanks to Andrew Carnie, Muriel Fisher, and Gary Thoms for the data.

[26]In certain clause types (interrogatives, negative clauses, embedded clauses, etc.), Scottish Gaelic has what looks like tense doubling, with tense realized both on the verb and on an independent particle *do* (unless the verb is irregu-lar/suppletive, as in (34b), in which case *do* does not appear). Thanks to Gary Thoms for discussion.

be available in this language, and it is:[27]

(34)　*Scottish Gaelic VPE*

    a.　Smaoinich mi gun do　dh'fhàg　　mi lebhraichean aig an　sgoil　agus dh'fhàg
        think-PAST I　that PAST leave.PAST I　book　　　　at　the school and　leave.PAST
        "I thought I had left books at school, and I had."

    b.　Q: Am faca　　Calum Mairi
            Q　see.PAST Calum Mairi
            "Did Calum see Mairi?"

        A: Chuinnac
           saw.PAST.IND
           "He did" (lit. "saw")

Note that the subjects are omitted in the VPE clauses in (34), just as they are in the tag clauses in (33).

    These facts mirror those in a closely related language, Irish Gaelic, whose subjects are argued to stay low in the structure, undergoing ellipsis with the rest of the verbal domain in most contexts (McCloskey 1991:280):

(35)　*Irish Gaelic VPE (McCloskey 1991:274, reprinted from (6), and McCloskey 2005:157)*

    a.　Q: a-r　　*cheannaigh$_i$* [t$_i$ said teach]?
           Q-PAST buy.PAST　　　they house
           "Did they buy a house?"

        A: creidim　gur　　*cheannaigh$_i$* [~~t$_i$ said teach~~]
           I-believe C.PAST buy.PAST　　　they house
           A: "I believe they did." (lit. "I believe that bought")

    b.　A: sciob　　an cat an teireaball de-n　　　luch
           snatched the cat the tail　　　from-the mouse
           "The cat cut the tail off the mouse"

        B: a-r　　sciob
           Q-PAST snatched
           "Did it?"

In addition to VPE (see also (6), above), Irish Gaelic also has dependent tag questions. The two pattern alike in stranding the main verb while eliding both the internal and the external arguments (see Goldberg 2005:72 for tests verifying V-stranding VPE in Irish Gaelic, which can be extended

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[27]The verb 'to see' is irregular in Scottish Gaelic, as seen in (34b): in clause types where tense doubling with *do* would normally occur (e.g. the question clause in this example: see fn. 26), the verb 'to see' surfaces in a suppletive form, *faca*, and *do* is not present. In clauses without tense doubling, the past tense form *chuinnac* is used for this verb, as seen in the answer clause in (34b).

to Scottish Gaelic):

(36)   *Irish Gaelic tag questions (McCloskey 1991:273 and Axelsson 2011:817)*

    a.   cheannaigh said teach, nár   cheannaigh
          buy.PAST   they house NEG.Q buy.PAST
          "They bought a house, didn't they?"

    b.   nío-r   thóg   tú sin, a-r   thóg
          NEG-PAST lift.PAST you that Q-PAST lift.PAST
          "You didn't lift that, did you?"

We can conclude from the preceding data and discussion that Scottish and Irish Gaelic are both in keeping with the Tag Question Implication (14) and the Tag Question Generalization (15).

I conclude this discussion of Scottish and Irish Gaelic by mentioning a third Celtic language, Welsh, that exhibits both dependent tag questions and VPE. As Rottet & Sprouse (2008) and Axelsson (2011) discuss in great detail, the description of dependent tag questions in Welsh is remarkably complex, owing mostly to substantial variation between the North and South varieties of the language; however, a summary comparison of its dependent tag question strategies with its VPE strategies (on the latter, see Rouveret 2012) strongly indicates that both (14) and (15) are satisfied in Welsh, as well. I leave a more systematic comparison to future work.

4.2.2 *Persian.*[28]   Persian (Indo-European: Iranian) exhibits SOV word order in unmarked declarative clauses. Yes/no questions are indicated with rising intonation:

(37)   *Persian declaratives and yes/no questions*

    a.   Naysan ketaab-o khoond
          Naysan book-OBJ read
          "Naysan read the book"

    b.   Naysan ketaab-o khoond *(rise)*
          Naysan book-OBJ read
          "Did Naysan read the book?"

Persian tags, which also have a rising contour, contain the same verb as their hosts:

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[28]Persian has a rich written tradition, and its formal register varies greatly with its colloquial form. The data I present here are strictly from the latter. Thanks to Pariya Tehrani, Sahba Shayani, Henry Tehrani, and Vahideh Rasekhi for their judgments, and to Maziar Toosarvandani for extensive discussion.

(38)   *Persian tag questions (simplex predicates)*

    a.   Naysan ketaab-o khoond, na-khoond *(rise)*
          Naysan book-OBJ read   NEG-read
          "Naysan read the book, didn't he?"

    b.   Naysan ketaab-o na-khoond, khoond *(rise)*
          Naysan book-OBJ NEG-read   read
          "Naysan didn't read the book, did he?"

Persian tag questions look as though they involve V-stranding of the sort we have already seen. Given (14), we expect to see evidence of VPE, and given (15), we expect it to also strand the main verb – a surprising expectation, for reasons I discuss below. These predictions are correct:[29]

(39)   *Persian VPE (simplex predicate)*
    Naysan ketaab-ro ba-deghat   khoond, Nasim ham khoond
    Naysan book-OBJ with-caution read   Nasim also read
    Lit.: "Naysan read the book carefully, and Nasim also read"

    a.   = Nasim read the book *carefully*
    b.   # Nasim read the book (not necessarily carefully)

The V-stranding pattern we see in Persian VPE and tags is a hallmark of VPE in V-raising languages. Crucially, though, Persian exhibits none of the telltale signs of V-raising: for example, both adverbs and negation necessarily *precede* the verb (see Toosarvandani 2009:74 for arguments that Persian does not have V-to-T raising).[30] However, if Persian verbs do not raise to T^0, then we seem to be confronted with a paradox: examples (38) and (39) suggest that Persian has V-stranding VPE (in both canonical VPE and tag question contexts), and yet the language apparently lacks V-raising, a property which Goldberg (2005) and others have previously cited as a necessary component in the derivation of this ellipsis type.

    A possible solution emerges when we consider the behavior of Persian VPE in clauses with complex predicates (i.e., those involving a light verb with a nonverbal predicate complement), rather than the simplex predicates we have looked at so far. In a detailed treatment of VPE in Persian complex predicates, Toosarvandani (2009) shows that the elided constituent in such contexts is

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[29]The second conjunct *cannot* be interpreted as simply "Nasim read it too" – the adverb *ba-deghat* 'carefully' is obligatorily interpreted, as well. This rules out an object drop analysis in favor of VPE for (39): the obligatory recovery of VP modifiers is a known diagnostic of VPE (Goldberg 2005:56).

[30]I am not aware of any SOV languages in which the unmarked position for adverbials is postverbal.
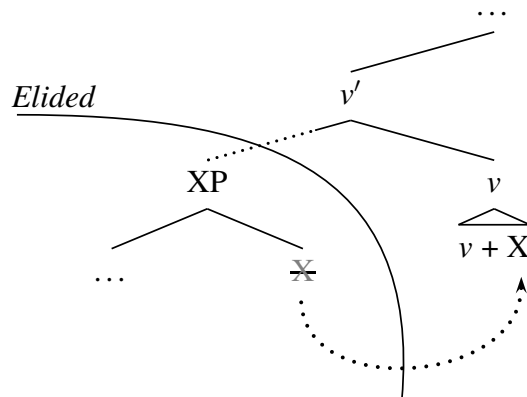
the complement of little-v^0 (which I call 'XP' to reflect its category-neutral status, though I will continue to refer its ellipsis as 'VPE'), a process which strands the light verb in little-v^0 (ibid.:61):

(40) *Persian VPE (complex predicate)*
Sohraab piranaa-ro   otu na-zad,   vali Rostam [$_{XP}$ ~~piranaa-ro otu~~] zad
Sohraab shirt.PL-OBJ iron NEG-hit.PAST.3SG but Rostam   hit.PAST.3SG
"Sohraab didn't iron the shirts, but Rostam did."

The net effect is that these light verbs mimic English auxiliaries in being generated outside the ellipsis site. The crucial difference between Persian and English VPE reduces simply to the size of the ellipsis site, rather than to the behavior of the verb: English appears to elide nothing smaller than little-vP, whereas Persian apparently elides nothing larger than the complement of little-v^0 (i.e. XP). We will return to this shortly.

Although Toosarvandani (2009) only discusses Persian VPE with complex predicates, we can straightforwardly extend his analysis to the data we saw involving simplex predicates with stranded main verbs in (38) and (39). That is, the Persian main (non-light) verb, which is merged in the category-neutral position X^0, survives deletion of XP by way of X-to-v movement. This movement, possible because v^0 is not occupied by a light verb in simplex predicates, is a familiar process in a Distributed Morphology-type approach to the derivation of categories (see Folli et al. 2005 for an implementation in Persian), and is thus motivated independent of VPE in order for X^0 to attain verbal status:

(41) *Persian VPE with simplex predicates*

```
                                    . . .
                                   /
                          v'
        Elided          /    \
              \       XP       v
               \     /  \      /\
              . . .    X    v + X
                              ↑
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Empirical support for this analysis can be found in Persian tags. When the host clause is a complex

predicate, the tag clause contains a stranded light verb:

(42) *Persian tag questions (little-v stranding)*

 a. Sohraab piranaa-ro otu zad, na-zad *(rise)*
   Sohraab shirt.PL-OBJ iron hit.PAST.3SG NEG-hit.PAST.3SG
   "Sohraab ironed the shirts, didn't he?"

 b. sohraab piranaa-ro otu na-zad, zad? *(rise)*
   Sohraab shirt.PL-OBJ iron hit.NEG-PAST.3SG hit.PAST.3SG
   "Sohraab didn't iron the shirts, did he?"

In other words, Persian main verbs pattern like light verbs with respect to VPE just in case little-v^0 is an available position for movement.[31]

A non-trivial consequence of this reasoning is that the derivation of Persian tags (qua VPE clauses) involves ellipsis of a different constituent (XP) than the derivation of tags in e.g. English (or any other aux-stranding language), since the latter never allows the V-stranding VPE pattern. Thus, assuming X-to-v movement applies universally when it can, we must conclude that VPE in aux-stranding languages like English targets a constituent no smaller than vP (cf. fn. 2). The theory must therefore accommodate some crosslinguistic variability in the size of the constituent elided in what we are calling VPE (recognizing that this raises questions about the homogeny of the operations this term is intended to describe).

For the present discussion of tags, it is worth mentioning that although Persian employs a different size of VPE than e.g. English does, Persian tags employ precisely the same VPE operation seen elsewhere *within Persian*. This bears on the formulation of the Tag Question Implication and Generalization stated earlier in (14)-(15): there, "VPE" must be interpreted as ranging over different language-specific strategies for verbal ellipsis, rather than a single operation (i.e., a universally fixed size of elided structure). With this revision, tags in a language L are indeed still derived by "VPE" in L. This is just the sort of variability we would expect if tag questions are not irreducible constructions in UG, but are instead complex phenomena derived in the syntax by mechanisms subject to some degree of parametric variation, as I have argued.

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[31]The obligatory recovery of the adverbial in VPE contexts such as (39) follows if it is adjoined below vP, within the ellipsis site, and thus part of the recovered material.
[32]The Lebanese (also known as Levantine) Arabic question particle "shi" is not used by all speakers: many would simply

4.2.3 *Lebanese Arabic.*[32]   Lebanese Arabic (Afro-Asiatic: Semitic) has unmarked VO order in declaratives, though the position of the subject varies (which I leave aside). Questions can be marked with a final Q-particle "shi" (but they need not be, in which case rising intonation is the only indicator; see fn. 32.):

(43)   *Lebanese Arabic declaratives and yes/no questions*

    a. ħanna ʔara   l-kteeb
        John read.3.SG.M the-book
        "John read the book."

    b. ħanna ʔara   l-kteeb shi
        John read.3.SG.M the-book Q
        "Did John read the book?"

Like the other languages we have seen so far, Lebanese Arabic tag questions look like normal yes/no questions that have been reduced, minimally comprising the verb and the Q-particle:

(44)   *Lebanese Arabic tag questions*

    a. ħanna ʔara   l-kteeb, ma ʔare-*(e)   shi
        John read.3.SG.M the-book, NEG read.3.SG.M-it Q
        "John read the book, didn't he?"

    b. ħanna ma ʔara   l-kteeb, ʔare-*(e)   shi
        John NEG read.3.SG.M the-book, read.3.SG.M-it Q
        "John didn't read the book, did he?"

Note the obligatory presence of "-e", an object clitic, on each verb in the tag clauses above.[33] Lebanese Arabic lacks object drop, and thus these object clitics cannot be omitted. These object clitics are not at all unique to tag question environments – they also arise in traditional VPE contexts (and elsewhere):

(45)   *Lebanese Arabic VPE context (presence of VPE not clear)*
    ħanna ʔara   l-kteeb. Mariam ma ʔarit-*(o)   shi?
    John read.3.SG.M the-book Mary   NEG read.3.SG.F-it Q
    "John read the book. Didn't Mary?"

However, neither the tag examples in (44) nor the attempted VPE example in (45) is particularly

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informative regarding the status of VPE in the language, since both examples involve basic unmodified transitive predicates. As noted throughout this section, various diagnostics must be employed to establish the (non-)existence of VPE in a V-raising language.

One such diagnostic involves the use of verbs whose complements resist pronominalization (both overt and null): if these complements cannot be pronominalized, but their interpretation can be recovered when they go missing in purported VPE contexts, this can be taken as a strong indication that VPE is taking place. (On the other hand, if they cannot go missing in such contexts, or their interpretation cannot be recovered if they do, then this could indicate the unavailability of VPE in the language.) Verbs that take non-finite clauses as their complements could be effective here, since non-finite clausal complements generally resist overt pronominalization crosslinguistically. Unfortunately, though, such complements are known to be realized as *covert* proforms in so-called Null Complement Anaphora (NCA) contexts. However, as a silent proform, NCA is known to prohibit wh- extraction out of the null complement (Depiante 2000:12), whereas no such restriction exists for the silent structure ascribed to genuine VPE (Schuyler 2002). We can exploit this asymmetry to determine whether silent non-finite clausal complements in Lebanese Arabic are the result of NCA or VPE.

As the following example shows, wh- extraction is freely permitted from within silent non-finite complements:

(46)   *Lebanese Arabic VPE (confirmed)*
    a.   baʕrif   shu ħanna ʔedir   yiftah   w shu ma ʔedir
         know.1.SG what John   could.3.SG.M open.3.SG.M and what NEG could.3.SG.M
         "I know what John could open and what he couldn't"
    b.   shu ʔedir   ħanna yiftah   w shu ma ʔedir
         what could.3.SG.M John   open.3.SG.M and what NEG could.3.SG.M
         "What could John open and what could he not?"

The availability of wh- extraction from within these silent non-finite complements strongly indicates that they are made silent by way of VPE (and not NCA).

Having confirmed VPE in Lebanese Arabic non-finite embedding contexts, we can now turn back to the tag question data. We see that tags are possible in these contexts as well, completing the

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paradigm:

(47) *Lebanese Arabic tag questions*

    a.   ʔeder   ħanna yiftaħ l-ʕilbeh, ma ʔeder   shi
        was.able John   to.open the-box, NEG was.able Q
        "John was able to open the box, wasn't he?"

    b.   ma ʔeder   ħanna yiftaħ l-ʕilbeh, ʔeder   shi
        NEG was.able John   to.open the-box, was.able Q
        "John wasn't able to open the box, was he?"

Thus, Lebanese Arabic accords with both (14) and (15).

4.2.4 *Brazilian & European Portuguese.*[34] The varieties of Portuguese (Indo-European: Romance) spoken in both Brazil and Europe exhibit unmarked SVO order in root declaratives, and they form yes/no questions with rising intonation:

(48) *Portuguese declaratives and yes/no questions*

    a.   o Bruno leu o livro
        the Bruno read the book
        "Bruno read the book"

    b.   o Bruno leu o livro *(rise)*
        the bruno read the book
        "Did Bruno read the book?"

Tags in both varieties of Portuguese can be of the V-stranding type, in which case they bear rising intonation, and minimally contain a verb from the host clause:

(49) *Brazilian Portuguese tag questions (without auxiliary)*

    a.   o Bruno leu o livro, não leu *(rise)*
        the Bruno read the book NEG read
        "Bruno read the book, didn't he?"

    b.   o Bruno não leu o livro, leu *(rise)*
        the bruno NEG read the book read
        "Bruno didn't read the book, did he?"

(50) *European Portuguese tag questions (without auxiliary) (Santos 2009:146n.)*
    queres jogar, não queres
    want play NEG want
    "You want to play, don't you?"

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[34]Thanks to Tatiana Libman and Will Machado for the Brazilian Portuguese data I present here; all data from the European variety comes from the cited sources.

According to the Tag Question Implication in (14), the presence of dependent tag questions in a language implicates the presence of VPE in that language, meaning we expect to find evidence of VPE in Portuguese.[35] As before, steps must taken to rule out an argument drop derivation. This can be accomplished through the use of VP modifiers (as we did for Persian: see (39) and fn. 29): if such modifiers are obligatorily recovered in putative VPE environments, then VPE must be at work (since the recovery of an adjunct would not be obligatory if it were simply dropped, or absent from the derivation to begin with). As we see in the following datum – originally reported for European Portuguese by Santos (2009:27) but confirmed for the Brazilian variety here – such modifiers *are* obligatorily recovered (along with the internal arguments):

(51)   *Portuguese VPE (without auxiliary)*
       a   Raquel não deu o   livro para a   mãe   no Natal,   mas a   Ana deu
       the Raquel NEG gave the book to   the mother on Christmas, but the Ana gave
       Lit.: "Raquel didn't give the book to her mother on Christmas, but Ana gave"

       a.   = Ana gave *the book to her mother on Christmas*
       b.   # Ana gave the book (to somebody at an unknown time)
       c.   # Ana gave the book to her mother (at an unknown time)

See Cyrino & Matos (2002:§1.2) for additional diagnostics confirming VPE in both varieties of Portuguese. Thus, Portuguese has VPE of the V-stranding type, consistent with its V-raising syntax, and in satisfaction of the predictions stemming from the universal in (14).

   This is not the only shape that a Portuguese VPE clause may take, however. Portuguese makes robust use of auxiliary verbs, and when these are present in a VPE clause, they are left adjacent to the ellipsis site in an aux-stranding configuration (originally reported for European Portuguese by Santos 2009:22, but confirmed here for the Brazilian variety):

(52)   *Portuguese VPE (with auxiliary)*
       a.   a   Joana não tinha acabado o   artigo mas a   Teresa tinha
            the Joana NEG had   finished the paper but the Teresa had
            "Joana hadn't finished the paper, but Teresa had"
       b.   a   Joana não vai ler o   livro mas a   Teresa vai
            the Joana NEG will read the book but the Teresa will
            "Joana won't read the book, but Teresa will"

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[35]Brazilian and European Portuguese pattern alike in all ways relevant to this narrow domain of inquiry, but the details of their VPE operations do differ: see Cyrino & Matos (2002) for a systematic comparison.

As expected, this pattern is attested in dependent tags of similar composition:

(53)   *Brazilian Portuguese tag questions (with auxiliary)*

    a.   a   Joana não tinha acabado o   artigo, tinha? *(rise)*
         the Joana NEG had   finished the paper   had
         "Joana hadn't finished the paper, had she?"

    b.   a   Joana vai ler o livro, não vai *(rise)*
         the Joana will read the book NEG will
         "Joana will read the book, won't she?"

(54)   *European Portuguese tag question (with auxiliary) (Santos 2009:220)*
       são de boneca, não é
       is   of doll   NEG is
       "They belong to a doll, don't they?"

Thus, dependent tags in both varieties of Portuguese exhibit generalized stranding of the highest verbal element in the clause, just like equivalent canonical VPE environments. This is the final piece of evidence supporting the claim advanced here that dependent tags involve VPE.

5.   *Closing remarks and conclusion*

A lingering consequence of the implication in (14) is that languages lacking VPE must also lack dependent tag questions. This holds completely: across dozens of languages without VPE (French, German, Hindi, etc.), none exhibits dependent tags (Sailor 2009, Axelsson 2011). Together with the preceding discussion, this observation leads to the conclusion that VPE is a necessary condition for the availability of dependent tags in a language.

I have said nothing, however, about the *sufficient* conditions for the availability of tags. VPE is clearly not sufficient, since several languages with VPE do not have tags (Russian, Swahili, Hebrew, etc.). Progress might be made in this area by applying methods from comparative microvariation. That is, what is needed is a pair of closely-related languages (or language varieties) that differ minimally from one other, except that one of them has tags and one of them does not. If such a pair could be found, then careful scrutiny of their few other differences (which may not present themselves on the surface) might uncover previously-unknown properties relevant to the licensing of tags.

From this perspective, an instructive linguistic subfamily might be East Scandinavian,[36] whose only members are Danish, Norwegian, Jutish, and Swedish (Lewis 2009). As we saw in §4.1, both Danish and Norwegian have dependent tag questions; however, Swedish apparently does not, at least not as a fully productive phenomenon. Axelsson (2011:834) notes that although constructed examples "sound perfectly possible grammatically, [...] they are claimed to be more unnatural than in Norwegian and thus not normally found", noting that invariant tags or modal particles are preferred instead.[37] Thoms (2012) presents evidence of VPE in Swedish (which behaves very much like it does in Danish and Norwegian), meaning it satisfies the only necessary condition we have been able to identify to this point. If tags in Swedish are truly marginal or unavailable, then, one would hope that this would follow from the presence or absence of some property (or set of properties), identifiable on independent grounds, that distinguishes Swedish from its closest relatives.[38] I leave this question open, noting only that the sufficient conditions for the existence of VPE in a language are also unknown (see Goldberg 2005 and Thoms 2010 for discussion).

Summing up, with respect to the universals laid out in (14) and (15), the data presented here all point the same way: dependent tag questions are derived by VPE. This conclusion suggests an analysis of dependent tags that reduces them fully to independent principles, doing away with the need for other special machinery (e.g. "copying" of material from the host clause to build the tag clause). See Sailor (2009) for an attempt along those lines.

While the preceding discussion has been devoted to the theoretically-informed scrutiny of dependent tag questions across languages, this study also represents one of the only attempts in the literature to characterize the empirical profile of VPE across multiple diverse languages (but see Goldberg 2005). This sort of contribution is essential, however, if we are to make progress in ad-

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[36] Another promising target for this approach might be the Arabic macrolanguage: although the Lebanese variety has dependent tags (§4.2.3), I found several others that did not, including Najdi and Egyptian. It bears mentioning that, of these, VPE can be confirmed in at least Egyptian (Matt Tucker, p.c.).

[37] Axelsson (2011:fn. 39), who is a Swedish speaker, notes that she has heard Swedish speakers use dependent tags spontaneously, but that they are rare.

[38] Given that there is already some variability within Norwegian regarding the acceptability of VPE (see §4.1.3), it is clear that microvariation is already at work in this language area. Careful analysis of this variability in Norwegian might be a particularly good way to make progress on identifying the necessary and sufficient conditions for both VPE and tags. (I have no data on Jutish.)

dressing lingering questions about the fundaments of VPE. Thus, while this paper has served to broaden the empirical domain of dependent tag questions, it has also broadened the domain of VPE phenomena to include dependent tags, while simultaneously gathering together in one place both novel and existing VPE data from a typologically diverse group of languages. In that respect, it is my hope that this study will serve as a reference for future work aiming to explore the typology of VPE in greater detail.

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