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The Final-over-Final Condition and Particles

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(Note: All acknowledgements relating to this paper appear in the general acknowledgements at the start of the currently in press MIT volume. If you've ever discussed (FOFC and) particles with me, thank you again for having been willing to teach me about these peculiar elements. As my work on FOFC and particles is on-going, I remain keen to keep discussing specific cases and learning about those and the phenomenon more generally – so do please contact me if you have comments, questions, and/or other input.

Also note: I'm aware that the References at the end of this (immense) chapter do not in every respect match up to what is cited in the main text. This has been addressed in the final version. Do feel free to contact me for clarifications relating to referencing – and other things – in this version, though.

*And note most particularly: As of January 2017, the constraint formerly known as the **Final-over-Final Constraint** is, officially, the **Final-over-Final Condition**. Logically ...)*

1. Introduction

This chapter focuses on a diverse range of structures, all containing elements that have, in one context or another, been referred to as *particles*. As already noted in chapter 2, particle-containing structures superficially seem to be able to violate the Final-over-Final Condition (FOFC) rather readily. While V-O-Aux structures containing inflecting auxiliaries of the kind found in Germanic, Hungarian, Basque, and many other languages appear to be ruled out, V-O-Aux structures where Aux does not inflect do not seem to be subject to the same condition. The examples in (1) illustrate:

- (1) a. Tā chī-le fan le. [Mandarin]
3SG eat-PERF food PERF
'He has eaten.'
(Paul 2014:86)¹
- b. Ego psis dio avga iton. [Cappadocian Greek]
1SG bake.1SG.PERF two eggs PAST (= 3SG.IMPERF.BE)
'I had baked two eggs.'
(Español-Echevarría 1994:1)
- c. Bis sa ja tebire ga. [Bagirmi]
dog eat meat yesterday COMPL
'The dog has eaten the meat.'
(Stevenson 1969:85)

That noninflecting auxiliaries do not behave like their inflecting counterparts has been well-known since Greenberg's groundbreaking typological work: in establishing his universals, he systematically excluded "uninflected auxiliaries," given the fact that they so clearly do not pattern like inflected ones (see Greenberg 1963:85, 93). Similarly, Dryer (1992:99) pinpointed the ability to "bear all or some of the verbal inflections associated with the clause"

¹ Paul (2014) glosses clause-final *le* as C_{Low}, reflecting her analysis of this element. The gloss given here instead prefigures the analysis to be presented in section 4.4.2, in terms of which this *le* and verbal *le* share certain meaning components, with clause-final *le* being a vP-internal element (see also

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as a difference between his categories of “auxiliary verb” and “tense/aspect particle,” concluding that the former should therefore be regarded as heads (“verb-patterners”) and the latter as modifiers (“object-patterners”). That the presence vs. absence of inflection is a relevant consideration in establishing why structures like (1a–c) are possible, whereas counterparts featuring inflected auxiliaries are not, is also strongly suggested by language-internal contrasts of the kind illustrated for Cappadocian Greek and Bwe-Karen below. Let us first consider Cappadocian Greek:

- (2) a. Ego **iha** psisi dio avga. [Standard Modern Greek]
 I have.1SG bake.PTCP two eggs
 ‘I had baked two eggs.’
 (Español-Echevarría 1994:1)
- b. πῆγα **ἐτόν**.² [Cappadocian Greek]
 ‘riɣa e'ton
 go.PAST.1SG PAST (= 3SG.IMPERF.BE)
 ‘I had gone.’
 (Krinopoulos 1889:37)
- c. νίφτα **ἦτον**.
 ‘nifta ‘iton
 be.washed.PAST.1SG PAST (= 3SG.IMPERF.BE)
 ‘I had been washed.’
 (Archelaos 1899:141)
- d. πῆγαν **’τόν**.
 ‘riɣan don
 go.PAST.3PL PAST (= 3SG.IMPERF.BE)
 ‘They had gone.’
 (Alektoridis 1883:489)

As the contrast between Standard Modern (2a) and Cappadocian (2b–d) Greek shows, there is more than just a positional difference between the auxiliaries in these two varieties. Standard Modern Greek’s preverbal auxiliaries exhibit the kind of finite inflection familiar from well-studied Western European languages: in compound tenses, the auxiliary exhibits agreement and tense inflection, while lower verbs surface without this inflection, instead being marked as nonfinite in some way. By contrast, Cappadocian Greek’s final auxiliaries systematically fail to inflect: they are consistently third-person singular imperfect past forms, with the lexical verb instead bearing the full tense-aspect and agreement morphology that one would expect to find on a finite verb; as the examples above show, there can be both aspect and agreement discrepancies between the fully inflected lexical verb and the invariant clause-final auxiliary. This is a property of Pontic Greek varieties more generally (see Neocleous and Sitaridou in preparation). In these varieties, then, it is always a lexical verb that bears full finite inflection, with the BE-derived auxiliary interacting with neither the ϕ -/aspectual nor the argument structure (cf. (1b) and (2a)) properties of the clause.

Let us now consider Bwe-Karen (Tibeto-Burman):

² Thanks to Petros Karatsereas, Nicos Neocleous and Ioanna Sitaridou for discussion of the Cappadocian and, more generally, Pontic Greek data and for pointing me to the examples given in (2b–d). The variation in the realization of the final element is phonologically driven and thus left aside here.

- (3) a. ce-dɔ̃ mi jə-khɔ̃ phi má nɔ̃ (*jə-khɔ̃)? [Bwe-Karen]
 3- say C 3- FUT take what 3- FUT
 ‘What did he say that he would take?’
 (Henderson 1997:187)
- b. yə- ca (*lɔ̃) dəyo lɔ̃.
 1SG-see ASP picture ASP
 ‘I am looking at a picture.’
 (Henderson 1997:39)

As in the case of Cappadocian Greek, we see a clear distinction here between the placement of inflected and the placement of uninflected elements. As (3) shows, Bwe-Karen features clause-final aspectual markers that do not inflect and that must necessarily surface in clause-final position. In this case, however, it is important to note, as Philip (2012:115) points out, that the appearance of inflection does not actually point to the existence of inflected auxiliaries in Bwe-Karen; instead, the “agreement” in (3a) is a proclitic pronoun, which is therefore systematically absent in structures containing a full DP subject (see Swanson 2011:24 for an overview of the Bwe pronoun system). Nevertheless, the contrast between (3a) and (3b) is instructive in the wider context, as Bwe-Karen’s final auxiliary elements differ strikingly from its numerous preverbal auxiliaries and also from its lexical verbs in being unable to host proclitic pronouns (see Swanson 2011 for detailed descriptive discussion of the Bwe verbal system). This renders these elements exceptional within the verbal system, as all other verbal elements—auxiliary, serial-verb, and lexical—can combine with person marking where they are the hierarchically highest verb in the structure. Acquirers, then, will have a very clear person-marking cue, parallel to that which acquirers of inflecting languages get, as to the formally quite distinct status of clause-final verbal elements. As will become clear in section 4, this cue is reinforced by numerous further indications in other parts of the grammar that a distinction needs to be drawn between heads that contribute directly to the extended projection (i.e., FOFC-relevant heads) and semantically related elements that do not (i.e., elements that do not “count” for FOFC purposes) (regarding extended projections, see Grimshaw 1991 et seq.). For the moment, I introduce just one of the latter, a recurring phenomenon in predominantly head-initial languages with an inventory of (apparently FOFC-violating) head-final functional elements:

- (4) a. θɪɾɪdɔkha dɔ̃ nu ɣɔ̃ yà θí lò cɛ (bé).³ [Bwe-Karen]
 rhinoceros animal.CLF DEM PROB step.on die finished 3SG IRR
 ‘The rhinoceros might trample them to death.’
 (Swanson 2011:42)
- b. tʰan³ saa¹maat³ tʰam (daj³). [Thai]
 3SG able do able
 ‘He can do it.’

³ The optionality-signaling brackets have been added to Swanson’s (2011) original example here. Swanson does not explicitly mark optional elements, but the discussion of irrealis/epistemic markers makes it clear that the obligatory element is the preverbal one, many *bé*-less examples being cited in the course of this discussion.

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(Hanna 2010:17)

- c. too¹daj¹ baw² ʔaat² cak² kææ³ (daj³). [Lue]
 anybody not able IRR solve able
 ‘Nobody could solve (the riddle).’
 (Hanna 2010:16)

In all of these examples, the element highlighted in grammatical descriptions as the auxiliary verb—irrealis *gʔ* ‘might’ in (4a), and ability *saa¹maat³* and *ʔaat²* in (4b,c)—may cooccur with a clause-final element associated with the same interpretation. In all cases, the final but not the initial element is optional, clearly signaling that the preverbal element is the “real” auxiliary (head).⁴

What we have established so far, then, is that there may be good reasons to think that auxiliary particles are formally distinct from the type of auxiliaries found in FOFC-respecting languages. What I will aim to achieve in the following sections is, first, to show that particles more generally do not constitute a threat to the universality of FOFC, interpreted (i) as a hierarchical universal (i.e., as a constraint on permissible narrow-syntax/narrow-syntax-internal phrase structure configurations; see Whitman 2008), and (ii) as a constraint that is relativized to extended projections in the manner stated in (5) (*pace* Abels 2013, Hawkins 2013, Sheehan 2013a, this volume, Whitman 2013, Etxepare and Haddican 2014, Erlewine to appear a,b, Zeijlstra 2015, Richards 2016; see chapter 1 for overview discussion):

- (5) A head-final phrase α P cannot dominate a head-initial phrase β P where α and β are heads in the same extended projection.

(cf. Biberauer, Holmberg, and Roberts (BHR) 2014)

Second, I will aim to explain why particles are such prolific apparent violators of this condition. In the course of this discussion, I will consider a wide range of particle types and demonstrate that there are various formal structures that would, on a narrow-syntax-internal, extended-projection-oriented interpretation of FOFC, be predicted *not* to produce a FOFC violation, all of which seem to be attested in the particle domain. This will lead directly to my third objective, which is to show how the FOFC-motivated investigation of particles reported here has led to what I believe to be a new discovery about the distribution of particle elements more generally: namely, that they are necessarily *peripheral* elements in a sense to be made precise. In other words, their distribution, like the distribution of disharmonic word order more generally, is more regular than has previously been thought.

The rest of this chapter is structured as follows. Section 2 presents an overview of the types of apparently FOFC-violating structures that are found in the particle domain. Section 3 introduces the formal configurations that would give rise to superficially FOFC-violating structures without actually violating the version of this condition presented in (5). Section 4 shows that all of these configurations exist. Section 5 discusses the consequences of this fact and concludes.

⁴ Interestingly, as Haas (1964:xxii) notes, Thai grammatical tradition refers to verbal words preceding the main verb as *auxiliaries*, while those following the main verb are called *secondary verbs*. The practice of distinguishing between positionally distinct elements with related aspect, tense, and mood semantics in languages of this type is therefore well- established.

2. Apparently FOFC-Violating Particles: The Empirical Facts

The objective of this section is to illustrate the kinds of particle-containing constructions that have led to doubts concerning the universality of FOFC.

2.1. Final Auxiliary Particles

We have already considered some examples of VO structures featuring a final auxiliary (see (1)–(4)). This pattern is particularly widespread in East Asian languages and it also surfaces, though to a lesser extent, in certain Central African languages (see Dryer 2009b:344–345).⁵ Worth noting in relation to the latter is that it always seems to be the case that V-O-Aux in languages that permit it is a minority pattern *alongside* Aux-V-O and/or inflectional tense/aspect/mood (TAM) marking (see Dryer 2015e). Consider the case of Bagirmi (Bongo-Bagirmi, Nilo-Saharan; Chad). This language features (prefixal) aspect marking on the lexical verb (6a,b), preverbal (agreeing) mood markers (6c), and a single⁶ clause-final completive particle, *ga* (6d) (and a clause-final question marker (6b); see also below):

- (6) a. η gab **kä**-pa kag(a). [Bagirmi]
man IPFV-split wood
‘The man splits the wood.’
(Stevenson 1969:102)
- b. Q: boukar **tád** djùm téŋ lábà **sà** **ksàa** wà?
 boukar PFV.do gruel millet or PFV.eat INF.eat Q
 ‘Did Boukar cook millet gruel or did he eat it?’

 A: boukar **tád** djùm téŋ **táďà**.
 boukar PFV.do gruel millet INF.do
 ‘Boukar COOKED millet gruel.’
(Jacob 2010:129)
- c. (née) **nó** **ndugo** kitàb kɛďɛ.
 3SG 3SG.FUT IPVF.buy book INDEF
 ‘She/He will buy a book.’
(Jacob 2006:31)
- d. Bis **sà** ja tebire **ga**.
 dog eat meat yesterday COMPL
 ‘The dog ate the meat yesterday.’
(Stevenson 1969:85, cited in Dryer 2009b:344)

As these examples show, there are clear formal distinctions between finite and nonfinite verbs

⁵ The languages that Dryer (2009b:355) lists as having “VOAux order, for at least some Aux” are Bimobo (Gur, Niger-Congo), Adioukrou (Kwa, Niger-Congo), Mumuye, Linda (Adamawa-Ubangi, Niger-Congo), Birom (Platoid, Niger-Congo), Kresh (Kresh, Nilo-Saharan), Baka, Bongo, Jur Mödö, Ngambay, Mbaye, Bagirmi (Bongo-Bagirmi, Nilo-Saharan), Dholuo (Nilotic, Nilo-Saharan), Moru, Avokaya, Logbara, Ma’di (Moru-Madi, Nilo-Saharan), Kera (East Chadic, Afro-Asiatic), and Musgu (Biu-Mandara, Afro-Asiatic).

⁶ Peggy Jacob (pers. comm.).

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in Bagirmi, with finite verbs systematically preceding the object (and nonfinite verbs), and post-object verb placement being possible only in verb-doubling constructions (6b) (see Jacob 2013 for discussion of the focus-backgrounding conventions that account for this placement). Completive *ga*, then, evidently does not occupy a position associated with either finite verbs or nonfocused verbs more generally.

A similar pattern emerges in Ngambay (Bongo-Bagirmi, Nilo-Saharan; Chad, Central African Republic):

- (7) a. **m- Îsi/ m-ár m-úsa** da. [Ngambay]
 1SG-PRES/1- PRES 1- eat meat
 ‘I am eating meat.’
 (Heine and Reh 1984:126, Vandame 1963:94–96)
- b. **m- Îsi/ m-ár mba k- ùsà** da.
 1SG-PRES/1- PRES for NOM-eat meat
 ‘I am eating meat.’
 (Heine and Reh 1984:126, Vandame 1963:94)
- c. **m- ā k- ào àl ngà**.
 1SG-FUT NOM-go NEG REPEATED
 ‘I will not go again.’
 (Vandame 1963:118, cited in Dryer 2009b:344)

Here we see that Ngambay makes use of inflected auxiliaries that systematically occupy a preverbal position.⁷ Strikingly, agreeing auxiliaries may either cooccur with agreeing lexical verbs (7a) or select for a nominalized complement, which, in the progressive, is introduced by a preposition (7b); *k-* marks the infinitive in (7b,c).⁸ The formal and distributional differences between the finite and nonfinite Ngambay verbal forms and clause-final aspect-marking *ngà* are thus again evident. And similar observations can be made about Mbaye, another of the VO Bongo-Bagirmi languages that Dryer (2009b:344) identifies as featuring at least one clause-final auxiliary (see note 5; see Keegan 1997 and Anderson 2011 for discussion).

Three final Central African V-O-Aux languages highlighted by Dryer (2009b) that I will comment on here are Mumuye (Adamawa-Ubangi, Niger-Congo; Nigeria), Dholuo (Nilotic, Nilo-Saharan), and Ma’di (Moru-Madi, Nilo-Saharan). Dryer (2009b:356) presents the following data showing that Mumuye has both clause-final aspect (8a) and mood (8b) particles:

⁷ That the auxiliaries in (7) are in fact inflected, rather than associated with clitic pronouns as in the Bwe-Karen case discussed in section 1, is clear from the discussion in Ndjerareou, Melick, and Moeller 2010: there are clear discrepancies between the realization of agreement (which is, for example, suspended in the second and third person singular) and the availability of clitic pronouns for all persons.

⁸ That the inflected tense-marking elements in (7b) are in fact auxiliaries and not copular elements is clear when one considers their overall distribution, and also when one considers the form of equative structures, which do contain a copula:

- (i) kuʎnjaʎ toʎ yɛʎ. [Ngambay]
 chicken 3SG.COP bird
 ‘A chicken is a bird.’

(Here, ʎ is a mid tone, ɿ a high tone, and ɹ a low to mid tone; see Ndjerareou, Melick, and Moeller 2010:38.)

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- (8) a. znàsɔ baasé ranti yé. [Mumuye]
Znaso mimic Ranti PERF
'Znaso has mimicked Ranti.'
(Shimizu 1983:107)
- b. znàsɔ dé baasé ranti ni.
Znaso PERF mimic Ranti IMMED.FUT
'Znaso is about to mimic Ranti.'
(Shimizu 1983:112)

The discussion in Krüsi 1978 further reveals that this language has numerous other final particles, expressing meanings relating to aspect, mood, negation, interrogativity, and discourse-connectedness. Particularly important for our purposes is, first, the fact that Mumuye again appears to have auxiliary(-like) elements that surface in the clause-medial position that one would expect for a VO language, *dé* in (8b) being a case in point (see also *na* in (9a) and in Krüsi's illustrative narrative text). Second, closer consideration of the elements discussed in Krüsi 1978 shows (i) that the elements occurring in final position seem to be quite numerous and (ii) that at least some final elements appear to be multifunctional, having considerable positional freedom. A notable case in point is *ne*, which serves as a (partly discourse-oriented) continuative marker (9a), coordinator (9b), and general linker (9b):

- (9) a. bayeh na wa'n ne. [Mumuye]
Bayeh PAST sit CONTINUATIVE
'Bayeh was sitting.'
(Krüsi 1978:271)
- b. ne tó ne wu ti beehsan do yu.
LINK say LINK he fix friend still hair
'And he said that he was still fixing his friend's hair.'
(Krüsi 1978:272)

Patterns of this sort are also very evident in both Dholuo and Ma'di, much-better-studied languages on Dryer's V-O-Aux list. Descriptions of Dholuo consistently refer to medial TAM particles, surfacing in preverbal position, in front of a lexical verb that may, under the relevant circumstances, inflect for both subject and object agreement and aspect (see, e.g., Omondi 1982, Tucker 1994, Ojwang' 2008, Cable 2012). Strikingly, the TAM markings employed in Dholuo-English code-switching are consistently and exclusively of the preverbal type (Ochola 2006), suggesting that these are the core TAM elements in the system (see also notes 4 and 9, and the discussion of primary and secondary TAM marking below). This impression is reinforced by the observations in the literature querying the formal status of Dholuo TAM elements more generally: Cable (2012:657n10), for example, notes that the preverbal TAM elements form a closed class, with meanings reflecting those of the (inflectional) tense paradigms of surrounding languages (e.g., Kikuyu; Schwartz 2003);⁹ following Omondi

⁹ Cable (2012:656) lists the preverbal tense particles in (i):

- (i) a. *a(ye)* very recent past (just happened)
b. *ne(nde)* recent past 1 (any time today)
c. *nyo(ro)* recent past 2 (any time yesterday)
d. *nyo(cha)* recent past 3 (any time more than two days ago)
e. *ne(ne)* remote past tense 1 (at least several days ago)
f. *yande* remote past tense 2 (at least several days ago)

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(1982) and Tucker (1994), among others, he raises the possibility that some of these particles may in fact be adverbs, citing their apparent positional freedom in support of this idea. (Omondi and Tucker note that many of the medial T-elements are homophonous with postverbal adverbs; see also Cable's note 10. As we will see in later sections, this type of apparent homophony, which could equally be multifunctionality involving underspecified elements (see, e.g., Biberauer 2011 et seq., Duffield 2013a, 2014a,b, Wiltschko 2014), is a recurring theme in the particle domain, not only in Central Africa but also more generally.)

Blackings and Fabb's (2003:chap. 18) discussion of adverbial placement possibilities in Ma'di shows clearly why an adverbial analysis needs to be carefully considered where elements expressing TAM-related semantics surface clause-finally, and also why this is particularly important when dealing with languages that do not overtly mark TAM on lexical verbs. Ma'di features both free and fixed-position adverbial elements. The example in (10) illustrates the placement options available to free adverbials, many of which express temporal and also discourse-related meanings (see also sections 2.2–2.4;¹⁰ @ in each case marks a possible placement option); (11) gives some examples of adverbials that obligatorily surface clause-finally:

- (10) *dri'ádrū* 'now' [Ma'di]
 @ má @ lè @ mū-lé @ ēbù gá @
 1SG want N- go.SB work LOC¹¹
 'Now I want to go to work.'
 (Blackings and Fabb 2003:479)

- (11) a. ópí odū ízì gbù. [Ma'di]
 Opi 3.take woman before
 'Opi has married before.'
 (Blackings and Fabb 2003:509)
- b. dʒì mī lí/ *gbírí
 close eye completely/completely
 'shut eye completely/tightly'
- c. kō ōdū lí/ *gbírí
 fall asleep completely/completely
 'fall fast asleep'

g. *ang'* near future tense 1 (later today)

h. *kiny* near future tense 2 (some time tomorrow)

i. *orucha* near future tense 3 (at least two days from now)

Of these, a small subset (e.g., *a(ye)*, *ang'*) cannot occur clause-finally. Importantly, many postverbal TAM-related forms cannot surface in the preverbal position occupied by TAM elements. There is therefore a partial overlap between medial and final elements, with most of the former being able to surface in final position, but many of the latter not being able to surface preverbally.

¹⁰ See Blackings and Fabb 2003:476 for discussion of constituents within which these adverbials may not surface. Essentially, these appear to be what we might think of in Givónian terms as satellite-internal positions; that is, adverbials may not surface internally to DPs and PPs.

¹¹ Here, *N* signifies 'nonpast' and *SB* that the associated verb is a subordinate form. See section 2.2 for further discussion of Ma'di verb forms.

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- (13) a. se2- **zo2** go2- fung1 seon3. [Cantonese]¹⁴
 write-PERF DEM-CL letter
 ‘... have/has written that letter.’
- b. se2- **jyun4** go2- fung1 seon3.
 write-finish DEM-CL letter
 ‘... have/has finished writing that letter.’
- c. se2- **jyun4-zo2** go2-fung1 seon3.
 write-finish-PERF DEM-CL letter
 ‘... am/is/are done with writing that letter.’
- (14) a. Tuō sā fēnzōng litóu huāi qiè [Yixing Chinese]¹⁵
 he three minute in can eat
le/ guāng/wuě sā ge pǐngguò.
 PERF/finish/ empty three CL apple
 ‘He can eat three apples to the core in three minutes.’
- b. Tuō sā fēnzōng litóu huāi qiè **guāng le/ wuě le**
 he three minute in can eat finish PERF/empty PERF
 sā ge pǐngguò.
 three CL apple
 ‘He can eat three apples to the core in three minutes.’ (= (14a))
- c. Tuō sā fēnzōng litóu xíng **dǎo/ *guāng/wuě**
 he three minute in find arrive/finish/ empty
 éng ge pòngyòu.
 five CL friend
 ‘He found five friends in three minutes.’
- d. Tuō sā fēnzōng litóu xíng **dǎo le** éng ge pòngyòu.
 he three minute in find arrive PERF five CL friend
 ‘He found five friends in three minutes.’ (= (14c))
- (15) a. Ông Quang **được** mua cái nhà. [Vietnamese]
 PRN Quang GET buy CL house
 ‘Quang was allowed to buy a house.’ Deontic (permission)
- b. Ông Quang mua **được** cái nhà.
 PRN Quang buy GET CL house
 ‘Quang was able to buy a house.’ Aspectual (accomplishment)

¹⁴ Thanks to Chun Wai Leung, Joana Wat, and Cherry Lam for these data. It is worth noting that *zo* is the counterpart of postverbal *le*, and not of the clause-final *le* in (12). See section 4.4 for further discussion.

¹⁵ Thanks to Xuhui Hu for the Yixing data and for numerous discussions of the phenomena they illustrate.

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- c. Ông Quang mua cái nhà **được**.
 PRN Quang buy CL house GET
 ‘Quang may possibly buy a house/Quang is able to buy a house.’
 Abilitative/Epistemic(alethic)
 (Duffield 2001:101–102, 2013a:128)

- (16) a. laaw vaw phaasaa laaw **daj**. [Lao]
 3SG speak language Lao GET
 ‘She/He can speak Lao.’
- b. *daj*⁴
 1. *V.tr.*: come to have; obtain; acquire; gain; win; get
 2. *V.tr.*: have a procedural ability with regard to something owing to knowledge of that thing; can; know how to
 3. *V. intr.*: succeed, win
 4. *postverbal modal*: can; **okay**; **fine**
 5. *preverbal modal*: happen to; get to; have the opportunity to; be able to; have to
 (adapted from Enfield 2003:78)

(13)–(16) are worth commenting on in more detail. (13)–(14) illustrate some of the lexical options available to Cantonese and Yixing Chinese speakers for expressing perfect aspect. In addition to a highly grammaticalized particle (*zo* and *le*, respectively, which correspond to verbal *le*; see Soh and Gao 2006, Soh 2009), both varieties have at their disposal a number of less grammaticalized forms, which may surface either independently or together with *zo/le*; where these markers cooccur, *zo/le* is necessarily the outermost marker, as one might expect from a more grammaticalized form in the context of upward-grammaticalization theories like that of Roberts and Roussou (2003). (14) further illustrates the varying extents to which perfect-marking elements undergo semantic bleaching: picking up on their full-verb meaning, partly grammaticalized *guāng* ‘finish’ and *wuě* ‘empty’ are only compatible with contexts in which they can convey “complete consumption/disappearance” of some object, thus ruling them out in structures like (14c) (Xuhui Hu, pers. comm.); *dao* ‘arrive’, by contrast, would be compatible with the structure in (14a,b), but its presence would necessarily alter the structure’s meaning to ‘He *managed* to eat three apples to the core in three minutes’, an adjustment that again reflects the fact that *dao* brings more specific semantics to the structure than verbal *le*. For our purposes, these examples highlight two key points: first, that the formal status of final auxiliaries in the languages we are concerned with needs to be carefully evaluated, and, second, that there appears to be systematically available evidence in V-O-Aux languages of ways in which potentially FOFC-violating auxiliaries contrast with truly verbal elements (see again note 4, and also Kuteva 1994, among others; see Anderson 2011 for a discussion focused specifically on African languages). We will return to this point in section 4.

(15)–(16) highlight two instances of the remarkable apparent homophony patterns encountered in East Asian languages (see Duffield 2013a, 2014a,b for detailed discussion). (15) illustrates the more general areal phenomenon, in terms of which an initially acquisitive verb meaning roughly ‘get’ takes on a range of modal meanings that, at least in Vietnamese, are systematically distinguished in positional terms (see, e.g., Cheng and Sybesma 2003, 2004, Enfield 2003, Duffield 2007, 2013a, 2014a,b, van der Auwera, Kehayov, and Vittrant 2009, J.-Y. Chung 2012, and Lam 2016 for discussion). Strikingly, immediately postverbal *được* bears a completive interpretation of the kind also seen in the Cantonese and Yixing

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examples in (13)–(14) (see also (16a)) and familiar from Chinese varieties more generally, while deontic *đưọc* occupies the position most commonly occupied by modals more generally in Vietnamese and also other languages in the region (cf. (12) in this connection); finally, clause-final *đưọc* occupies the position most directly associated, in languages of the region and also beyond, with speaker-oriented perspectives (see also sections 2.4 and 4.4.2). We will return in section 4.4.2 to the significance of these distributional facts and of the apparently extensive homophony that many final auxiliary particles exhibit. Importantly, very similar patterns appear to be possible in some of the African VO languages under discussion here, Ma'di being a case in point; see Blackings and Fabb 2003:chap. 17 for a discussion of the “modals” *rá* (expressing completion, necessity, and affirmation) and *wà* (expressing possibility; see also section 2.2).

Outside of Africa and East Asia, it also seems to be the case that final auxiliary elements in VO languages always cooccur with larger numbers of initial auxiliaries; consider again Cappadocian Greek ((1c), (2)). Tenetehára (Tupí-Guaraní), which has been argued by Bonfim Duarte (2012) to violate FOFC, represents an interesting contrast to this general trend. Said to be neutrally VSO in main clauses,¹⁶ but head-final in dependent clauses and also in nonclausal XPs (notably, nominals and PPs), this language features four final auxiliaries: the recent completives *kwez* (homophonous with the distal demonstrative) and *ra'e*, imperfective *iko*, and future *nehe*. Strikingly, it does not appear to have any initial auxiliaries. Bonfim Duarte (2012:368ff.) does, however, highlight three adverbial particles—*zekwehe* (unattested distant past), *zekaipo* (unattested distant past with significant speaker uncertainty), and *kakwez* (attested past)—which obligatorily surface clause-medially. The examples in (17)–(18) illustrate:

- (17) a. Teko w- apy ko **kwez** kury. [Tenetehára]
 people 3SG-burn farm IPAST now
 ‘The people have burned the field.’
 (Bonfim Duarte 2012:360)
- b. Awa w- ekar tapi'ir **iko**.
 man 3SG-look.for tapir be
 ‘The man is looking for tapir.’
 (Bonfim Duarte 2012:374)
- c. Ma'e pe Zuze w- enu tazahu **ra'e**.
 what at John 3SG-hear big.pig IPAST
 ‘Where did John just hear the big pig?’
 (Bonfim Duarte 2012:374)
- d. A'e ae u- mu- me'u- putar wa- n- emiapo-kwer **nehe**.
 he EMP 3SG-CAUS-speak-want 3PL-ABS-make- PAST FUT
 ‘He will tell what they have made.’
 (Bonfim Duarte 2012:374)
- (18) a. W- exak **ze-kwehe** zawar-uhu tapixi memyr a'e pe no. [Tenetehára]
 3SG-see EVID-UDPAST jaguar-big rabbit son there at also
 ‘(They say that) the big jaguar also saw the rabbit’s son there.’

¹⁶ Given the data presented in Bonfim Duarte 2012, it seems that Tenetehára makes extensive use of topic and focus fronting, and, consequently, also very readily allows SVO ordering.

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- b. U- m- ur **ze- kaipo** i- hy i- zupe.
3SG-CAUS-come EVID-UDPAST his-mother him-to
'His mother apparently gave (it) to him.'
- c. A- exak **kakwez** ka'i ihe.
1SG-see DPAST.ATTESTED monkey I
'I saw the monkey.'
(Bonfim Duarte 2012:369)

That the TAM elements in (17) and (18) cannot occur in one another's positions is convincingly shown in Bonfim Duarte's discussion, thus establishing them as distinct from the forms we have considered above. A property that these elements share, however, and that, importantly, distinguishes them from verbal elements in Tenetehára more generally—consider the agreement marking on the lexical verbs in (17) and (18)—is their lack of verbal inflection. This is the more striking when we contrast Tenetehára with another VSO language that has been said to feature postverbal auxiliaries, the Arawakan language Garifuna (Iñeri, Maipurean):

- (19) a. Ru- **tu** Maria fein l- un John. [Garifuna]
give-3SG.F Maria bread 3SG.M-to John
'Maria gives John bread.'
- b. Ariha l- umu-**tu** John Maria.
see 3SG.M.AOR- 3SG.F John Maria
'John sees Maria.'
(Kaufman 2010:2)

As (19) shows, Garifuna postverbal auxiliaries immediately follow the verb; while this language therefore does not challenge FOFC, it does seem to violate the first component of Greenberg's (1963) Universal 16: "In languages with dominant order VSO, an inflected auxiliary always precedes the main verb." Kaufman (2010) offers detailed argumentation against this conclusion, which is not directly relevant here. What is crucial for present purposes is the contrast between Garifuna's inflecting postverbal auxiliaries and Tenetehára's consistently uninflected final forms: as we have seen repeatedly, apparently FOFC-violating final auxiliaries never seem to exhibit the inflectional marking associated with clearly finite verb-forms in the VO systems they occur in, and this is also true for Tenetehára.

Greenberg's original intuition regarding the "otherness" of uninflected auxiliaries therefore seems to be vindicated in the FOFC context. More generally, this section has also highlighted at least two further distinctive properties that apparently FOFC-violating particles frequently seem to show: (i) a degree of semantic specificity that contrasts with that associated with fully grammaticalized auxiliaries (to an extent that is likely to be (very) striking system-internally, where particles cooccur with other auxiliary elements), and (ii) homophony with elements surfacing in different positions and serving at first sight (quite) different functions. Further, we have seen that superficially FOFC-violating auxiliaries typically contrast with one or more semantically related elements exhibiting the "expected" head-initial and thus FOFC-conforming distribution. As we will see in the following sections, these properties recur to a conspicuous extent in other domains featuring final particles.

2.2. Final Negation Particles

Dahl (1979), Dryer (1988, 1992, 2007, 2009b), and LaPolla (2002) all mention negative particles as “outliers” that contrast with negative adverbs and verbal negatives, thereby constituting a classificatory challenge. As Dryer (1992:98) notes, for example, negative particles are not verb-patterners (*pace* Dryer 1988, which only considered verbal negatives). To the extent that verb-patterners can be interpreted as projecting heads and that analyses can be upheld within which negation is assumed to project a NegP contributing to the clausal extended projection (see, e.g., Pollock 1989, Ouhalla 1990, Zanuttini 1997, Zeijlstra 2004), they are FOFC-relevant elements. This section will therefore consider final negation elements in VO languages.

Dryer (2009b) observes that V-O-Neg patterns are crosslinguistically uncommon, with two notable exceptions: Central Africa (spread across the Niger-Congo, Nilo-Saharan, and Afro-Asiatic (Chadic branch) families) and Austronesia (Papuan and Austronesian languages; see Reesink 2002). In the former, 18/23 genera studied have V-O-Neg; in the latter, 9/18. Obligatory negative concord systems featuring multiple negative markers are left aside in Dryer’s study, although optional negative concord systems in which the obligatory element follows VO are included. (20)–(21) illustrate with Bagirmi (Nilo-Saharan), Bongo (Bongo-Bagirmi, Nilo-Saharan), Buru (Austronesian), and Tidore (Papuan):

- (20) a. deb-ge tol kobio **li**. [Bagirmi]
 person-PL kill lion NEG
 ‘The people didn’t kill the lion.’
 (Dryer 2009b:317)
- b. ma (**nja**) ami a’ji **wa**. [Bongo]
 1SG NEG make thing NEG
 ‘I am not doing anything.’
 (Dryer 2009b:316)
- (21) a. Sira hapu lafa-t la yako langina **moo**. [Buru]
 3PL.ACT tie food-NOM for 1SG.BEN earlier NEG
 ‘They didn’t tie up trailfood for me earlier.’
 (Reesink 2002:245)
- b. Ona (**kama**) hoda mansia tobo **ua**. [Tidore]
 3PL NEG see people bathe.in.sea NEG
 ‘They did not see the people bathe in the sea.’
 (Reesink 2002:254)

Significantly, Dryer (2009b:329–331) notes that some of the African V-O-Neg patterns actually surface in mixed OV/VO languages: 8 languages in his sample exhibit this pattern.¹⁷

¹⁷ There are also languages with mixed OV/VO word order that avoid superficial FOFC violations by combining their final negators with OV order. This pattern is common in Surmic languages, which exhibit VO order in affirmatives and OV in negatives:

- (i) a. εδε or kobu- o. [Me’en]
 3PL see chicken-PL
 ‘They see chickens.’

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One of these is Ma'di, which we have already encountered in section 2.1 (recall that *N* signifies 'nonpast'):

- (22) a. má èbī jà **rá.** [Ma'di]
1SG fish N.eat AFF
'I will (certainly) eat fish.'
(Blackings and Fabb 2003:157)
- b. m- āwí dzótī **kōrò.**
1SG-open door NEG.PAST
'I did not open the door.'
(Blackings and Fabb 2003:469)
- c. ídré ɔ̄-nā ìzá **kō.**
rat 3-eat meat NEG.N
'Rats don't eat meat.'
(Blackings and Fabb 2003:470)

A striking aspect of the Ma'di V-O-Neg structure is that the negation element appears to be inflected (see also Dryer 2009b:337). Closer inspection, however, reveals that this is a misleading characterization of the data. As mentioned in note 13, Ma'di tense¹⁸ is in fact encoded via the morphological form of the lexical verb and the manner in which the verb interacts with other elements in the sentence. More specifically, *inflected* verbs, marked by a floating low-tone prefix and OV order, express nonpast tense meanings (i.e., present and future); and *uninflected* verbs, which lack the low-tone prefix, but uniquely permit a prefixal subject paradigm alongside that available for inflected verbs¹⁹ (see (23d)) and VO order, typically express past tense. These patterns—which are suspended in negative contexts, where only the uninflected VO structure is possible (see (22))—are illustrated in (23):

- (23) a. *Inflected verb, OV order, present meaning*
ká èbī jà. [Ma'di]
3SG fish N.eat
'He is eating fish.'
(Blackings and Fabb 2003:157)
- b. *Inflected verb, OV order, future meaning*
má èbī jà **rá.** (= (22a))
1SG fish N.eat AFF
'I will (certainly) eat fish.'
(Blackings and Fabb 2003:157)

-
- b. ɛdɛ kobu- o or- **on.**
3PL chicken-PL see-NEG
'They don't see chickens.'
(Dryer 2009b:342–343)

¹⁸ As Dryer (2009b:337) observes, whether tense or aspect is at issue is a matter of debate. Blackings and Fabb (2003) argue in favor of tense, a position I will also adopt for expository purposes here.

¹⁹ The prefixal paradigm creates the initial impression that *these* forms might best be described as "inflected." In addition to the examples discussed here, see (11a) and (22b,c).

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- c. *Uninflected verb, VO order, past meaning*
má nā gbándà.
1SG eat cassava
'I ate cassava.'
(Blackings and Fabb 2003:140)
- d. *Uninflected verb, VO order, past meaning*
(ópi) ñ- nā èbī.
Opi 3SG-eat fish
'Opi, he ate fish/Opi was the one who ate fish.'
(adapted from Blackings and Fabb 2003:139)

Worth noting here is that *rá* in (23b) should not be interpreted as the direct source of the future meaning distinguishing otherwise near-identical (23a) and (23b) (comparison of (23b) and (23c) shows that the different in the person of the subject is immaterial); as noted in section 2.1, *rá* is an apparently multifunctional modal element (otherwise, there would need to be three distinct homophonous *rás*; we will return to this in section 4.4), signaling completion, necessity, and affirmation (see again Blackings and Fabb 2003:chap. 17). As Blackings and Fabb (2003:167) note, the future interpretation of (23b) should be understood as the consequence of *rá*'s potential interpretations all being incompatible with a present interpretation: as a completive, it conflicts with the Ma'di present's imperfectivity, and as a necessity or affirmation marker, it implicates the future in different ways, in the latter case because an affirmation marker is felt to be redundant where a sentence relates to an action (etc.) that is visibly underway at the time of speech. What this shows is that tense in Ma'di is compositionally encoded via a range of devices (presence vs. absence of (tone-based) inflection on the lexical verb, final particles, adverbs, etc.). For our purposes, the crucial points are these. First, the language's clause-final modals never inflect for tense; tense inflection is exclusively a property of lexical verbs. Second, the final position in which modal—Blackings and Fabb (2003:451) identify *wà* (possibility) and *kpé* (nonpossibility) alongside *rá* as modals—and negative elements surface cannot be viewed as a T-position in the standard generative sense, that is, as a position fundamentally associated with (a) [tense] (feature); if these elements do indeed target a single position—a point to which we will return in section 4.5—a modal position of some kind would seem more likely.²⁰ Regardless of the specifics here, though, it is clear that there is no meaningful sense in which the negators *kōrò* and *kō* can be said to be inflected; therefore, they do not constitute a counterexample to the generalization that is in place so far regarding the uninflected nature of the elements that appear to be able to violate FOFC. Further evidence that *kōrò* and *kō*, like the other modals that can surface clause-finally, cannot straightforwardly be viewed as heads contributing to the extended projection of the clause is the fact that all of these elements can combine with the nominalizing definite marker, *rì*, and undergo fronting; (24) illustrates, highlighting the fact that this option means that final modal and negation particles are treated in the same way as the final adverbials discussed in section 2.1 (see section 4.3 for further discussion of the significance of this fact):

²⁰ Mumuye also superficially seems to have tense-conditioned negation, the form cited by Dryer (2009b:453) being the past form, and *kpa(n)*, cited by Krüsi (1978), being the nonpast form.

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- (24) a. **kō rì má èḃī jã.**²¹ [Ma'di]
NEG.N DEF 1SG fish N.eat
'The one that I don't eat is fish.'
(Blackings and Fabb 2003:467)
- b. **kōrò rì má jã èḃī.**
NEG.PAST DEF 1SG eat fish
'The one that I didn't eat was fish.'
(Blackings and Fabb 2003:469)
- c. **rá rì ópí kò-jā- ā nì.**
AFF DEF Opi 3- N.eat-OBJ FOC
'The one who will eat it is Opi.'
(Blackings and Fabb 2003:586)
- d. **tjé tjé rì ópí ò-mū nì.**
slowly DEF Opi 3-go FOC
'The one who went slowly is Opi.'
(Blackings and Fabb 2003:500)

That negation can front like adverbials is familiar from Stylistic Fronting (see again Holmberg 2000b, 2005); strikingly, though, the relevant negation elements are usually viewed as XPs rather than heads (see, e.g., Zeilstra 2004:160ff.). All in all, then, it would seem that Ma'di V-O-Neg, despite initial appearances to the contrary, exhibits properties very similar to the other apparently FOFC-violating structures we have considered so far in this chapter.

As one might expect given the areal nature of the V-O-Neg distribution that we are considering here, contact appears to have played a role in creating some of the V-O-Neg patterns (see Reesink 2002 and Dryer 2009b for discussion). This, of course, represents another departure from what we have observed in relation to FOFC-violating structures that might conceivably have arisen under contact situations (see Biberauer, Newton, and Sheehan 2009a,b and Biberauer, Sheehan, and Newton 2010 for discussion). That V-O-Neg patterns are different from those adduced as evidence in support of the universality of FOFC is strongly suggested by the fact that these structures again exhibit properties very similar to those that distinguish the uninflected-auxiliary-containing V-O-Aux structures discussed in section 2.1 from unattested V-O-Aux patterns. We have already seen in connection with Ma'di that final negators can pattern with adverbials and modals, which appear to be elements carrying enough semantic content to be frontable (see the discussion of perfect aspect markers in section 2.1). We have also observed in passing the apparent homophony of some of the elements Ma'di negators pattern with, *rá* being a case in point. This also affects negation elements themselves in other V-O-Neg systems. In certain bipartite negation systems, both the "real" negator and its reinforcer take the same form (see Bell 2004a,b). This is illustrated in (25):

²¹ Here, the nonpast negator *kō* combines with an inflected verb, an option that is not available in unmarked nonpast negation contexts (cf. (22c)). Various considerations indicate that fronted elements are "sealed off" from the rest of the clause, with the result that it is structured independently of their featural properties. In the negative context, that *rì*-fronted negators are "sealed off" in this way is clear from the fact that they cannot license negative items like *kuwa* 'never' in the way they usually would (Ma'di is a negative concord language; see Blackings and Fabb 2003:484).

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- (25) a. Ek verstaan **nie**₁ die probleem **nie**₂. [Afrikaans]²²
 1SG understand NEG the problem NEG
 ‘I don’t understand the problem.’
- b. Yo **no**₁ sé nada que se llama así **no**₂. [Dominican Spanish]
 1SG NEG know nothing that REFL call this NEG
 ‘I don’t know anything that has this name.’
 (Lipski 2001:2)
- c. Eu **não**₁ tô achando minha gatinha **não**₂. [Brazilian Portuguese]
 1SG NEG am finding my cat.DIM NEG
 ‘I can’t find my pussycat.’
 (Biberauer and Cyrino 2009:16)
- d. **No**₁ lagar-lo davert **no**₂. [Lisignano]
 NEG leave-it open NEG
 ‘Don’t leave it open.’
 (Zanuttini 1997:97)
- e. Lāmí **bà**₁ tà ci àbinci à kāsuwā **ba**₂. [Hausa]
 Lami NEG he eat food PREP market NEG
 ‘Lami didn’t eat food at the market.’
 (Newman 2000:358)

In all of these cases, the “real” negator, which cannot be omitted in a well-formed negative, is the first one (on Brazilian Portuguese (BP), where the first negator can be omitted under certain circumstances, see below). These structures are therefore not V-O-Neg in Dryer’s terms, but they do all feature a final concord element in VO structures, and this element is therefore of interest in the FOFC context.²³ Also of interest is the fact that the “real” negators are all located clause-medially, in positions where they could plausibly be interpreted as the initial heads of a NegP; in these systems, we therefore again see the contrast between “well-behaved” initial and apparently FOFC-violating final highlighted in the previous section (this is also very evident in the Bantu negative concord systems with final concord/reinforcing negation elements discussed in Devos and van der Auwera 2013).

Returning to the languages illustrated in (25): they notably differ with regard to the formal characteristics of the final element. While *nie*₂ in Afrikaans cannot be independently stressed or modified, unlike *nie*₁ (Biberauer 2008), and final *ba*₂ in Hausa is toneless, unlike *bà*₁ (Newman 2000), the final *não* in BP at first gives the impression that it is a “strong” element of the sort that one might expect—bearing Jespersen’s cycle in mind—to “reinforce” the original negator, *não*₁, which is typically realized as a clitic, *num* (see Biberauer and Cyrino 2009). These differences again point to differences in the extent to which superficially similar structures in fact contain similar elements. More specifically, they highlight the need to investigate the properties of individual apparently FOFC-violating elements very carefully. Let us consider the BP case in a little more detail. Here, closer investigation has shown that the final negator in (25c)-type doubling structures is not, in fact, the same element as the one

²² Unless otherwise indicated, Afrikaans data were constructed by the author, a native speaker. All unattributed Afrikaans data illustrate uncontroversial properties of the language.

²³ Afrikaans is an OV verb-second (V2) language, like German. In the absence of finite auxiliaries, it readily permits VO-*nie* structures, though; hence its inclusion in the present discussion.

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that may surface independently without *não₁/num*. Consider the data in (26), where the final *nãos* are respectively glossed as *não₂* and *não₃*:

- (26) A: O João é rico! [Brazilian Portuguese]
 the John is rich
 ‘John is rich!’
- B: O que? Ele **num**/ **não₁** tem um tostão furado!
 the what he NEG.CL/NEG has a cent with.a.hole
 ‘What?! He doesn’t have a red cent!’
- B’: O que? Ele **num**/ **não₁** tem um tostão furado **não₂**!
 the what he NEG.CL/NEG has a cent with.a.hole NEG
 ‘What?! He doesn’t have a red cent!’
- B’’: #O que? Ele tem um tostão furado **não₃**!
 the what he has a cent with.a.hole NEG
- B’’’: Ele tem um tostão furado **não₃**; ele tem um inteiro!
 he has a cent with.a.hole NEG he has one whole
 ‘He DOESN’T have a cent with a hole; he has a WHOLE one!’ (i.e., the literal meaning)

Here we see that both the standard single- and the more emphatic double-*não*-containing structures (i.e., (26B) and (26B’)) deliver a well-formed structure containing a negative-polarity-item (NPI) idiom. By contrast, the structure featuring only the final *não* (*não₃*) does not produce a well-formed answer (26B’), at least not under the intended idiomatic reading: as (26B’’’) shows, independently occurring clause-final *não* (*não₃*) necessarily gives rise to a reading that would be felicitous if it were preceded by an utterance in which the speaker made a claim about the relevant male having a holed cent in his possession (i.e., a statement in which *um tostão furado* has its literal meaning), to which B can then respond by correcting that literal meaning. *Não₃*, then, evidently expresses presuppositional negation, which *não₂* does not do, and it also cannot license NPI idioms in the manner one would expect an integrated negation element to do. See Biberauer and Cyrino 2009, Biberauer 2012, 2015b, and the references cited there for detailed discussion of a wide range of evidence that converges on the conclusion that *não₂* and *não₃* are formally distinct final negation elements: like the final negators in Dominican Spanish (25b) and Lisignano (25d), both originally derive from the anaphoric negator, but whereas *não₂* and the negators in (25b,d) have grammaticalized into clause-peripheral negation elements, *não₃* still represents an element that is quite loosely adjoined to the main clausal spine, which can thus not serve as a licenser for polarity-related elements the clause contains. The latter fact recalls the behavior of “sealed-off” *kōrò* and *kō* in Ma’di (see note 21).

Afrikaans *nie₂* poses both similar and completely different challenges. On the one hand, it appears to contrast with BP *não₃* in having become highly grammaticalized, to the point where it is so semantically and formally bleached that its occurrence in the modern spoken language is not restricted to strictly negative contexts (see Oosthuizen 1998, Biberauer 2008, 2009, 2012, 2015b for discussion):

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- (27) a. Hy vertrek **sonder** dat ek agterkom (**nie₂**). [Afrikaans]
 he leaves without that I realize NEG
 ‘He leaves without me realizing it.’
- b. Hy kon **nouliks** staan (**nie₂**).
 he could barely stand NEG
 ‘He could barely stand.’

These structures point to the dubiousness of characterizing *nie₂* as a negation element; as argued in Oosthuizen 1998 and Biberauer 2008 et seq., an analysis as an element associated with Laka’s (1990) Pol(arity) head (Sigma) would seem more illuminating.²⁴ Moreover, *nie₂* also serves as an optional further negative reinforcer in a range of nonclausal contexts:

- (28) a. **Nie₁** die GELD (**nie₂**), maar die TYD pla [DP] [Afrikaans]
 not the money NEG but the time worry
 hom.
 him
 ‘Not the MONEY, but the TIME worries him.’
- b. Ek is [**nooit (nie₂)**] moeg **nie₂**. [Q/nP]
 I am never NEG tired POL
 ‘I am NEVER tired.’
- c. Moeder Natuur het vir **nie₁** minder (**nie₂**) as [AP]
 Mother Nature have for NEG less POL than
 drie beskermende lae gesorg.
 three protective layers cared
 ‘Mother Nature provided no less than three protective layers.’
 (Donaldson 1993:410)
- d. Hy gee dit **nie₁** vir sy suster **nie₂**, maar vir sy [PP]
 he give it NEG for his sister POL but for his
 niggie.
 niece
 ‘He gives it not to his sister, but to his niece.’

Nie₂, then, is a negative-related element that surfaces finally not only in (superficially) VO clauses (see note 23), but also as part²⁵ of a range of further XP-types, all of which are head-

²⁴ A Pol analysis more generally seems appropriate for the reinforcing/concording element in negative concord systems; as shown by Rooryck (2008), Breitbarth and Haegeman (2010, 2013), and Makri (2013), among others, concord elements frequently surface in nonnegative contexts.

²⁵ Prosodic properties make it very clear that *nie₂* should be interpreted as constituting part of the XPs it reinforces. Consider the contrast between these examples:

- (i) a. Ek is **nooit nie** moeg **nie**. [Afrikaans]
 I am never NEG/POL tired POL
 ‘I am NEVER tired.’ or ‘I am never not tired.’
- b. Ek is [**nooit (nie₂)**] moeg **nie₂**. (=28b))
 I am never NEG tired POL
 ‘I am NEVER tired.’

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initial. If it can be shown to be part of all the extended projections that it combines with, located suitably high in the structure, it will be a FOFC-violating element. Given its likely origins as an emphatic tag negator (Roberge 2000)—that is, as an element that would initially have been adjoined to the CP-domain, much like BP *não*₃ still appears to be—the structural-height condition appears to be met. As shown in Biberauer 2008, 2009, 2012, 2015b, the height requirement is indeed met. What will be crucial, then, is establishing what kind of lexical item *nie*₂ is, a matter to which we will return in section 4.5. For the moment, note that *nie*₂ and *não*₂/*não*₃ all raise a question about the analysis of apparently homophonous items within a system: *nie*₁ and *nie*₂ appear to be rather distinct, with distinct semantic, positional, and more general formal properties, and this can also be shown to be the case for the various *nãos* in BP, thus apparently justifying a distinct-homophones analysis for these elements. The possibility that these elements may in fact involve just a single underspecified multifunctional form also exists, however, raising the question of how we are to distinguish these analytical possibilities. As will become clear in later sections, the same question arises in other final-particle domains (including that already discussed in section 2.1).

A further lexicon-oriented question that also arises in other domains is that of the number of items that a system has to express negation, sentential and otherwise. As we have already observed, there are languages like Ma'di and Mumuye (see note 20) that employ distinct negation-elements under what appears to be tense-conditioning. Many African languages have even more elaborate negation-element inventories, with fine-grained clausal considerations determining the choice of negator. For example, Hausa (Chadic, Afro-Asiatic) uses the system schematized in (29), which is quite usual in Chadic languages (Newman 1971, 2000, Jaggar 2001):

- (29) a. Equative, nonverbal (constituent), and wide-focus ('It is not the case that...') negation: *bàa...bá/ba*
b. Verbal negation, except continuous and subjunctive forms: *bà...bá/ba*
c. Continuous forms: *báa*
d. HAVE-possessives: *báà*
e. Negative existentials: *báabù*
f. Subjunctives and imperatives: *káddà*
(Newman 1971:2–3)

Significantly, barring final *bá/ba*, all of these negative forms are initial, surfacing either at the start of the clause or in postsubject position, that is, in the kind of position where one would expect to find a negative marker in a VO language.

To conclude this negation-oriented section, I highlight the fact that investigation of this domain has revealed properties that also played a role in the V-O-Aux context: (i) absence of inflection (even where this has been recorded in grammars); (ii) evidence of less grammaticalized and potentially nonhead status (e.g., independent frontability); (iii) homophony with other elements in the system, with which they may (Hausa *ba*) or may not

-
- c. Ek is [nooit] [nie₁] moeg nie₂.
I am never NEG tired POL
'I am never not tired.' (i.e., 'I am always tired.')

Without prosodic marking, (ia) is ambiguous between a negative-concord (ib) and double-negation (ic) reading. Wherever negative concord is intended, *nie* is produced as part of the prosodic phrase containing the negated element (see also the bracketing indicated in (28)); this *nie* is therefore the concord element, *nie*₂. Wherever double negation is intended, *nie* is prosodically marked off from the other negation element(s) in the structure; that is, it is the "real" negator *nie*₁. See Biberauer 2009 for further discussion.

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(Afrikaans *nie₂*) have a direct diachronic connection; and (iv) where there are multiple negation elements in a system, a contrast between (expected) initial and potentially FOFC-violating final elements.

2.3. Final Interrogative and C-Particles

This section will consider both the specific matter of final interrogative (Q-) particles and the more general question of final elements that have been construed as C-particles.

2.3.1. Final Interrogative (Q-) Particles

Q-particles are often viewed as clause-typers (see, e.g., Cheng 1991, 1997) and are thus readily associated with the C-domain. (Rizzi (2001) explicitly distinguishes Int(errogative)P as a projection within the articulated CP; and Richards's (2010) account of overt *wh*-movement crucially relies, as Richards (2016:175) explicitly notes, on elements like Chinese *ma* being a complementizer, and thus a C-head.) From a FOFC perspective, then, the expectation would be that final Q-particles, like final complementizers, should be absent from VO languages. In reality, though, this combination is an extremely common one; witness the distributional facts recorded in *WALS* (Dryer and Haspelmath 2015). As table 1 shows, V-O-Q is the most commonly attested pattern in the 312-language sample extracted from *WALS*,²⁶ being significantly more common than the reverse disharmonic order. We seem, then, to have an empirical scenario within which V-O-C is never attested where C is a subordinating complementizer, but within which it is extremely common where C is a Q-particle. Given the robustness of the former gap (Dryer 2009b), more detailed consideration of the formal properties distinguishing complementizers and Q-particles seems warranted (*pace* Paul 2014, 2015, Pan and Paul 2017). This will be our next objective.

Table 1

Position of polar question particle in relation to VO/OV. (This table was constructed by combining Features 92A (Position of Polar Question Particles; Dryer 2015g) and 83A (Relationship between Order of Object and Verb; Dryer 2015e).)

Q-particle and OV/VO relation	Number of languages
Initial Q and VO	81
Initial Q and OV	37
Final Q and OV	140
Final Q and VO	154

VO languages featuring both (interrogative) complementizers and final Q-particles might be expected to be particularly informative regarding the similarities and differences between these two types of element. Fortunately, numerous languages display this profile. We will focus on Marshallese, given the range of insights that it offers (see Willson 2002, 2005, 2008).

The examples in (30) illustrate matrix and embedded clauses containing what appears to be a final Q-particle, *ke*:

²⁶ For simplicity's sake, I have simply used the languages classified as OV and VO by Dryer (2015e), leaving aside the fact that some languages classified in other ways (e.g., "no dominant order") would also feature VO orders that are of interest here in the interrogative context, and the fact that some of these languages (e.g., German) would be specifically classified one way or another on a generative analysis.

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- (30) a. Herman e- ar lukkuun kōnan men in mour **ke**? [Marshallese]
 Herman 3SG-T(PAST) really love thing of life Q
 ‘Did Herman really love animals?’
 (Willson 2005:424)
- b. I jaje e- j **ke** likjikin.
 1SG don’t.know 3SG-T(PRES) Q make.up.stories
 ‘I don’t know if she’s making up stories.’
 (Willson 2005:423)

In being compatible with both matrix and embedded interrogatives, *ke* differs from Q-particles in the Chinese varieties (see, e.g., Chan 2013, Paul 2014, 2015) and in many other languages featuring final Q-particles (see, e.g., Bailey 2012, Biberauer and Sheehan 2012b, and Biberauer, Haegeman, and van Kemenade 2014 for further discussion and references; and see Cable 2010 for discussion of OV languages with the reverse pattern, a point we will return to in section 4.4). Closer investigation, however, reveals that *ke* cannot straightforwardly be equated with (interrogative) complementizers, and that its status as a final Q-particle requires qualification. Consider the following data:

- (31) a. I jaje **ñe** e bed imweo imen. [Marshallese]
 1SG don’t.know COMP 3SG stay house his
 ‘I don’t know if he’s at his house.’
 (Willson 2002:48)
- b. Ij kōjatrikrik **bwe** enaj etal.
 1SG.PRES hope COMP 3SG.FUT go
 ‘I hope that she/he will go.’
- c. Ij kōjatrikrik **ke** enaj etal.
 1SG.PRES hope COMP 3SG.FUT go
 ‘I hope (and I know for sure) that she/he will go.’
 (Willson 2002:47)
- (32) a. Herman e- n (**ke**) bajjik (**ke**) kōmmon (**ke**) pade eo [Marshallese]
 Herman 3SG-should Q just Q make Q party DET.SG
 (**ke**) ñan ir (**ke**)
 Q for 3PL Q
 ‘Should Herman just throw the party for them?’
 (Willson 2005:421)
- b. Kwo-j (***ke**) jab (***ke**) etal (***ke**) ñan Rita **ke**?
 2SG-T(PRES) Q NEG Q go Q to Rita Q
 ‘Aren’t you going to Rita?’
 (Willson 2005:424)

(31a) shows that Marshallese has an element corresponding to ‘if’ and that this element (*ne*) surfaces at the start of the embedded clause, as one would expect in a head-initial language. (31b) shows that the language also features an initial declarative complementizer, *bwe*. The contrast between (31b) and (31c) reveals that *bwe* is an evidentiality-sensitive complementizer, signaling the speaker’s uncertainty regarding the truth of the proposition in

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the embedded clauses; a further complementizer, *ke*, marks speaker-certainty (Willson (2002:47) refers to *bwe* and *ke* as reportive and presuppositional complementizers, respectively). The latter is, of course, homophonous with the Q-particle in (30). In (32), we see that the Q-particle can, under the right circumstances, occur in other than clause-final positions; in fact, clause-final position is only absolutely required where *ke* cooccurs with negation. The former fact might lead one to conclude, as researchers working on other Polynesian languages have, that the Marshallese Q-particle is in fact an adverb (see, e.g., Mosel and Hovdhaugen 1992 on Samoan, Besnier 2000 on Tuvaluan, and Starks and Massam 2015 on Niuean, to which we will return in section 4.4). The latter fact, however, suggests that closer consideration might be warranted.

The necessarily final placement of *ke* in negative structures calls to mind the negative intervention effects discussed since Rizzi 1982 (see in particular Beck 1996a,b, Hagstrom 1998, Cheng and Rooryck 2000, Sauerland and Heck 2003). These take on a particularly clear form in languages such as Quechua that employ particles of various kinds to distinguish indefinites of different kinds (see, e.g., Haspelmath 1997:310–311, Sánchez 2010). In languages of this type, it is possible to establish more precisely which *wh*-indefinite-contained features are subject to the intervention effect. Consider the Southern Quechua data in (33)–(36):

- (33) a. ima b. ima- ta [Southern Quechua]
 what what-ACC
 ‘what’ ‘what (case-marked)’
- c. ima- pis d. ima- ta- pas
 what-ADD what-ACC-ADD
 ‘something’ ‘anything’
- (34) a. **Ima- ta- *(m)** Mariya yacha-n? [Southern Quechua]
 what-ACC- FOC/EVID Mariya know- 3SG
 ‘What does Mariya know?’
- b. Mariya **ima-ta-(m)** yacha-n?
 (Sánchez 2010:134)
- (35) a. **Ima- ta- m** mana muna-n- chu? [Southern Quechua]
 what-ACC-FOC/EVID NEG want- 3SG-NEG
 ‘What doesn’t she want?’
- b. *Mana **ima-ta-m** muna-n-chu?
 (Sánchez 2010:140–141)
- (36) a. Mana **ima- ta- pas** muna-ni- chu. [Southern Quechua]
 NEG what-ACC-ADD want-1SG-NEG
 ‘I do not want anything.’
- b. ***Ima-ta-pas** mana muna-ni-chu.
 (Sánchez 2010:141)

Here, we see that *ima* constitutes the base for all indefinite expressions ((33); see Haspelmath 1997 for detailed discussion). We also see that *wh*-movement is not generally obligatory (34b), except in negative *wh*-questions (35), where the composite *wh*-element must move to outscope the negator; NPIs, by contrast, necessarily remain in situ, within the scope of the

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negator (36).²⁷ Significantly, in Quechua varieties a range of focus and (contrastive) topic-oriented particles may cooccur with *wh*-elements, but not with NPIs, with *wh*-movement necessarily requiring the presence of a particle of this kind. One of these, *-taq*, has frequently been labeled a Q-particle (see Cable 2010 for discussion and references), although Sánchez (2010:35) identifies it as a contrastive focus marker. For our purposes, the key importance of the Quechua data is that they reveal these facts: (i) Negative features specifically interact with formal features associated with the *periphery* of *wh*-elements. (ii) Q-particles do not necessarily have to be clause-level elements; they can also associate with subclausal XPs. (iii) Q-particles may not in fact be specified as *question*-particles; they may be focus or other \bar{A} -related particles (see, e.g., Horvath 1986, Kratzer 1991, Herburger 2000, Kim 2002, 2006, Beck 2006, and Ginsburg 2009 on the connection between *wh*- and focus; see also below, and section 2.4, on this “recycling” of features in natural-language grammars).

Against this background, a Q-particle analysis of Marshallese *ke* no longer seems so obvious. Instead, given its distribution, it is tempting to connect it in some way to focus, at least in its interrogative uses ((30) and (32)). Depending on whether wider Marshallese-internal evidence points to homophony or underspecification (see section 4.4), this analysis might also be extendable to its initial complementizer-type use in (31c); for example, if, as would be plausible on the basis of the data given here, all the uses of *ke* involve presupposition marking, it could be that *ke* is in fact a presupposition marker (see much work since Horn 1969 on the connection between focus and presupposition, and Van der Wal 2016 on the diagnosis of different types of focus). Marshallese, then, once again highlights the need to look very carefully at the overall distribution of elements that appear to serve as Q-particles: it instantiates another case where there is a contrast between initial C-elements and an allegedly final one, with apparent homophony in play.

One or both of these observations can also be made in relation to the final Q-particles that have been identified for Italian (Munaro and Poletto 2003, 2009, Penello and Chinellato 2008; see Cardinaletti 2011 for discussion), and, as Bailey (2012) observes, for Afro-Asiatic languages like Mina (Cameroon) and Zaar (Nigeria); Niger-Congo languages like Supyire (Mali; though see below), Fyem (Nigeria), and Ogbronuagum (Nigeria); the Austronesian language Tetun (East Timor); and numerous East Asian languages, including the Chinese varieties and the Karen languages. Particularly striking in this context are languages like Lagwan (Afro-Asiatic, Cameroon), Mupun (Afro-Asiatic, Nigeria), and Lele (Afro-Asiatic, Chad), all of which have both initial and final Q-related elements, with the possibility or even requirement that these elements cooccur. Consider (37)–(38):

- (37) a. G- a mma i gha **ɗa**? [Lagwan]
2SG-PERF leave her.ACC house Q
‘Did you leave it at home?’
(Philip 2012:92)
- b. Mi ghin ɗikimi (**ɗa**)?
1PL do how Q
‘What do we do?’
(Philip 2012:117)

²⁷ See also Beck and Kim 1997 for well-known discussion of the obligatory scrambling of Korean *wh*-elements where they cooccur with NPIs, a further manifestation of this intervention constraint in an otherwise *wh*-in-situ language.

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- c. Ndalu ngwa fīne, **ki** bile=a shi a
 1SG.PROG look.at outside LINK man=LINK.M some 3SG.M.PERF
 s- o gha **ḍa**.
 enter-VENT house Q
 ‘I’m looking outside, (to see) whether someone has entered the house.’
 (Philip 2012:93)
- (38) a. a man nalep-e? [Mupun]
 2SG know Nalep-Q
 ‘Do you know Nalep?’
 (Frajzyngier 1993:360)
- b. n- tal pə wur a **nə ket** gwar kat kə
 1SG-ask PREP him COP that if he meet PREP
 nalep-e.
 Nalep-Q
 ‘I asked him whether he met Nalep.’
 (Frajzyngier 1993:364)

In Lagwan, the matrix Q-particle cooccurs with an obligatory subordinating complementizer, *ki*, which Philip (2012) analyzes as a linker, that is, a semantically vacuous functional head that serves as a syntactic means of marking subordination and coordination relationships. Significantly, the Q-particle surfaces in both *yes/no* and *wh*-interrogatives, being optional in the latter. Mupun exhibits a similar pattern, differing only in that the final Q-particle is accompanied by two initial complementizer-type elements, general-subordination *nə* and specifically interrogative *ket*. Languages featuring double complementation markers in interrogative complements are more widely attested crosslinguistically and always seem to exhibit the same pattern, with a general subordinator most directly linking the selected embedded interrogative clause to the matrix predicate. In formal terms, this would seem to correspond to a structure in which the generalized subordinator/linker dominates the interrogative complementizer, meaning that these elements are disharmonic in a FOFC-compliant way:

- (39) a. (Man) nemīdānam [(**ke**)[(**āyā**) (ū) zabānšenāsī mīxānad]]. [Persian]
 1SG – NEG.know.1SG SUB if 3SG linguistics study.3SG
 ‘I don’t know if she/he studies linguistics.’
 (Korn and Öhl 2007:1)
- b. us- nee puuc-aa [**ki** [**kyaa** tum aa- oogee]]. [Hindi-Urdu]
 3SG-ERG ask- PERF SUB POL you come-FUT
 ‘He asked whether you will come.’
 (Davison 2007:183)
- c. [[to kal parat aalaa **kaa(y)**] **mhaaNun/asa**] [Marathi]
 he yesterday back come.PAST.3SG.M POL QUOT such
 raam malaa witSaarat hotaa.
 Ram 1SG.DAT ask.PROG be.PAST.3SG.M
 ‘Ram was asking me whether/if he came back yesterday.’
 (Davison 2007:184, attributed to R. Pandharipande)

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Estonian presents a further option, with the standard language featuring an initial Q-particle (40a) that also serves as the interrogative complementizer (40c). Strikingly, though, the dominant Q-particle in colloquial Estonian is clause-final *või/vä* (40b), which is also optionally available, alongside initial *kas*, in embedded interrogatives (40c):

- (40) a. **Kas** homseni ei anna oodata? [Estonian]
 Q tomorrow.TER NEG let wait.INF
 ‘Can’t it wait till tomorrow?’
 (Keevallik 2009:146)
- b. Mtsa p:ilve ei jää vä?
 but cloud.ILL NEG become Q
 ‘But don’t (you) become high?’
 (Keevallik 2009:165)
- c. Ma küsisin, et kas ta tuli (või/vä).
 1SG ask.1SG.PAST that Q she come.3SG.PAST Q
 ‘I asked if she came.’
 (Bailey 2012:60, citing personal communication from Anne Tamm)

A more radical case of a language “recycling” a matrix Q-particle is Yosondúa Mixtec (Oto-Manguan, Mexico):

- (41) a. Káhnū tī nú? [Yosondúa Mixtec]
 big 3SG.AML Q
 ‘Is it (the animal) big?’
 (Farris 1992:36)
- b. Kīhīn ná ndéhé nú tu nīhi ná īso.
 go 1SG look Q NEG get 1SG rabbit
 ‘I’ll go see if I can’t get a rabbit.’
 (Farris 1992:42)

All the cases where a Q-particle cooccurs with one or more other C-related markers raise the question of what formal analysis we are to ascribe to the particle. That it might be the spell-out of an articulated CP-head such as Int is in principle possible where we are dealing with a second element that appears to be functioning as a subordinator (i.e., (37c) and (40c)); this subordinator could be analyzed as a Force head:

- (42) [_{ForceP} Initial C ... [_{IntP} ... Q-particle]]

This analysis becomes less appealing when we consider the nature of the initial subordinators, however: in the languages in question, they serve as general subordination markers and do not have a clause-typing function. This is even more clearly the case in languages where general subordination markers (*linkers* in Philip’s (2012) terms) cooccur with initial clause-typing complementizers, as in (38b) and (39). A more appropriate analysis, then, would seem to be one drawing on the proposals of Bhatt and Yoon (1992), Haegeman (2006, 2012), and others, in terms of which embedded clauses are introduced by Sub(ordinate)P, which dominates

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ForceP:

(43) [_{SubP} Initial C ... [_{IntP} ... Q-particle]]

In these cases, however, we would expect the Q-particle to be obligatory, as it, and not the initial complementizer, functions as the clause-typer. The fact that final Q-particles do not appear to be obligatory therefore runs counter to the predictions of this analysis. Further, (40c)-type structures do not seem readily amenable to this type of analysis: in this case, the initial C appears to be the “real” interrogative subordinator and not just a generalized subordinator, with the final Q-particle again being optional. It would appear, then, that final Q-particles may not be formally identical in all the (VO) languages that have them.

Further evidence of this fact comes from Chinese varieties possessing multiple Q-particles. Consider the following Yixing data:

(44) a. Ní huāxi yīngguo fè? [Yixing Chinese]
 2SG like Britain Q
 ‘Do you like Britain?’

b. Ní zuòniē xièhào me?
 2SG homework finish Q
 ‘Have you finished your homework?’

c. Ní huāxi yīngguo à?
 2SG like Britain Q
 ‘Do you really like Britain? (I’m so surprised!)’
 (Biberauer and Hu 2014:11–12)

(45) a. Tuō fè xiàoze ní huāxi yīngguo fè. [Yixing Chinese]
 3SG not know 2SG like Britain Q
 ‘He/She does not know whether you like Britain.’

b. Ní huāxi yīngguo fè/à/fà?
 2SG like Britain Q/Q/Q
 ‘Do you like Britain?’

c. Ní zuòniē xièhào me/ma?
 2SG homework finish Q/Q
 ‘Have you finished your homework?’ (impatient question)
 (Biberauer and Hu 2014:11–12)

Yixing has two Q-particles: the basic *yes/no* Q-particle *fe*, and *me*. Both of these elements are derived from negation markers. Additionally, it has *a*, which typically marks speaker-surprise/agitation. Strikingly, these markers may cooccur, with one of the *yes/no* markers preceding surprise-marking *a* (45b,c) in strictly this sequence. The ordering restrictions suggest that these particles may be exponents of hierarchically organized CP-internal heads, although the precise nature of these heads is again unclear: *fe/me*, which cannot cooccur, could plausibly spell out either Int or Force, with *a* seeming to have more of a speaker-orientation, suggesting the possibility of merger within a Speech-Act-associated leftmost periphery (see, e.g., Speas and Tenny 2003, Sigurðsson 2004, 2010, Speas 2004, Hill 2007, 2013a,b, Coniglio and Zegrean 2010, Giorgi 2010, Haegeman and Hill 2013, Haegeman

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2014, Heim et al. 2014, Lam 2014, Heim 2016, Wiltschko and Heim 2016, Yang and Wiltschko 2016, and Wiltschko to appear on this possibility in general, and Paul 2014, 2015 for consideration of the form it may take in Mandarin specifically).

Languages with multiple Q-particles do not always require these to occur in a fixed sequence, however. Consider Dholuo in this connection:

- (46) a. **Be(nde)** Arum ringo? [Dholuo]
 Q Arum run.PROG
 ‘Is Arum running?’
- b. Arum **be(nde)** ringo.
 Arum Q run.PROG
 ‘Is Arum running?’ or ‘Arum too is running.’
- c. Arum ringo **be(*nde)**?
 Arum run.PROG Q
 ‘Is Arum (really) running?’
 (Ojwang’ 2008:63–64)
- (47) a. **Donge** Kamau biro? [Dholuo]
 Q Kamau come.PROG
 ‘Is it not true that Kamau is coming?’
- b. Kamau biro, **donge**?
 Kamau come.PROG Q
 ‘Kamau is coming, is that not true?’
 (Ojwang’ 2008:66)
- (48) a. Nyako **be donge** idho yien? [Dholuo]
 girl Q Q climb.PRES tree
 ‘Is it not true that the girl also climbs the tree?’
- b. Onyoso **donge be** o- hero tugo?
 Onyoso Q Q 3SG-like playing
 ‘Is it not true that Onyoso too likes playing?’
- c. Waseka nyalo ywak **be, donge? *donge, be**
 Waseka ADV cry Q Q
 ‘Waseka can also cry, can’t she?’
- d. Waseka nyalo ywak **bende, donge? *donge, bende**
 Waseka ADV cry Q Q
 ‘Waseka can also cry, can’t she?’
 (Ojwang’ 2008:67–68)

Here, we see that Dholuo appears to have at least three Q-particles—*be*, its more emphatic counterpart *bende*, and *donge*—which may surface in a number of different positions. Clause-initially (46a), *be(nde)* can also be interpreted interrogatively, but clause-medially (46b), either an interrogative or an additive interpretation is possible, the latter clearly showing *bende*’s origins as an additive particle. This is significant, as additives are crosslinguistically

common sources for focus particles (see, e.g., Haspelmath 1997, Jayaseelan 2014, Zimmermann 2015), with the connection between focus and negation already having been highlighted in section 2.2, and that between negation and interrogative marking having emerged in this section. (46c) represents the “challenge” use of *be*, which Ojwang’ (2008:64) describes as involving a grammaticalized form of *be(nde)*. Crucially, this clause-final use is a discourse-marked one; the initial use is the neutral one. (47) shows that Dholuo also has a tag Q-particle (*donge* means ‘I confirm that it is true’), which can, again, be used either initially or finally. Lastly, (48) shows that these particles may combine, with variable order being possible clause-internally; at the right edge, however, *donge* must always be right-peripheral, as we might expect of a tag element. Dholuo, then, highlights three important points. First is the importance of looking closely at the functions of final Q-particles in the context of the wider system they interact with, a point that has already come up several times in our discussion. Second, additive elements (here, plausibly adverbs) and tag elements are further sources of Q-particles. Third, Q-particles differ in the extent to which they have been grammaticalized, which one would expect to have implications for how they integrate with the clausal spine, and which also raises challenging questions about how to determine the number of separately stored lexical items in play: completely distinct source and Q-particle elements vs. nondistinct, underspecified elements vs. a mixture of these options, depending on the nature of the particle, and so on.

Just how important the latter two considerations (source and degree of integration; see also section 2.2 on BP *não*) are becomes clear when we consider languages like Babungo (Niger-Congo; Cameroon) and Bwe-Karen (Tibeto-Burman):

- (49) a. à yàa náysá tì ηwá fáj ηkó ná dù’ **mū**? [Babungo]
 2SG P3 tell.IMPF to he as it P4 sit.PF Q
 ‘Did you tell him how it was?’
- b. ηwá yì- jwí **mē**?
 3SG PFV-come Q
 ‘Has he come?’ (expected answer: yes)
- c. sí gó shó, **mu** lèe?
 1PL go there Q EMPH
 ‘We shall go there, shall we?’
 (Schaub 1985:8, 9)
- (50) a. nə= phú ɔ dǒ hi **a**? [Bwe-Karen]
 2SG=grandfather exist LOC home Q
 ‘Is your grandfather at home?’
 (Swanson 2011:53)
- b. de ladùlafá mi nu mɪ má **nɔ**?
 thing strange CL NU is what Q
 ‘What is this strange thing?’
 (Swanson 2011:54)
- c. ɔ nu mɪ dǎkú tə be, **nɔ a**?
 exist NU is winnowing.tray one flat Q Q
 ‘That is a “daku,” isn’t it?’
 (Swanson 2011:56)

- d. nə= le b̀ ð̃ chibúchígì lé nə= pɔa b̀ ðiphodà
 2SG=go just LOC stream and 2SG=catch.food just fish
 pho t̩ ɓ́ ɓ́ nɔ nɔ nɔ?
 small one long long Q Q Q
 ‘WHY don’t you go to the river and catch some fish?’
 (Swanson 2011:57)

Babungo final Q-particles behave like tag elements, with *m̄* replacing *mū* where a positive response is expected, and the latter also being independently reinforceable and prosodically separable from the main clause where the speaker intends a stronger question (49c). Evidently, then, Babungo Q-particles combine interrogativity with speaker-perspective, syncretizing two meaning components that are represented via independent particles in Dholuo (48) and sometimes, though not always, in Yixing Chinese (45b,c). Importantly, this is the case whether there is a “common intonation”-marked tag (49c) or not (49a,b). Bwe-Karen, in turn, has a basic Q-particle, which derives from the disjunction marker and is also used to mark both *either/or* questions and conditionals (Swanson 2011:53–54). Further, it has a distinct Q-particle reserved for use in *wh*-questions, *nɔ* in (50b), and these two particles may combine in the sequence *a nɔ* (basic Q-particle – *wh*-particle) to produce prosodically marked tag questions (50c). Interestingly, it is also possible to reduplicate the *wh*-related particle as shown in (50d) to produce a very emphatic question. Taken together, these facts suggest that Q-particles, like their negation counterparts, vary with respect to their degree of integration into the main clausal structure, and that the extent to which they encode speaker-hearer-oriented perspectives (i.e., Speech Act projection- (SAP) related information) needs to be taken into account (see Speas and Tenny 2003, 2004 on SAP). As Enfield, Brown, and de Ruiter (2012) show on the basis of what they argue to be a crosslinguistically representative discussion of Dutch (Indo-European), Lao (Tai-Kadai), and Tzeltal Mayan (Mayan), the sentence-final particles employed in polar questions are always more than “a mere question mark” (Enfield, Brown, and de Ruiter 2012:239).

Both of these points connect to the question of the size of the Q-particle inventory. In some cases, this is very extensive indeed. Supyire (Niger-Congo; Mali) and Thai (Tai-Kadai) are two cases in point. For Supyire, Carlson (1990:321) highlights the following clause-final Q-particles:

- (51) a. *la, bé*: yes/no Q-particle
 b. *mé*: negation marker
 c. *mà*: negative Q-particle
 d. *yɛ*: constituent Q-particle
 e. *ké*: locative Q-particle
 f. *dé, sá, kè*: exclamative Q-particle (loans from neighboring Bambara)
 g. *yò, yò̀*: particles signaling politeness (e.g., attenuation, listening)

The basic Q-particle derives from the disjunction marker (‘or’), a very common source of final Q-particles (Estonian *või*, Persian (*a*)*ya*, and Bwe-Karen *a* are also cases in point; see Jayaseelan 2001, 2008, Bailey 2012), while a further element is negation-derived, another very common source (see also, e.g., Yixing *fe* and *me*, discussed above). The existence of distinctive constituent and locative Q-particles points to the presence of nonclausal Q-particles (see the discussion of Marshallese above, and see section 4.4), while the exclamative and politeness-oriented particles again point to the often close connection between Q-particles and SAP meanings. Since Supyire Q-particles are always optional—as they also are to

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varying extents in the languages already discussed—it is expected that their inclusion will bring about an interpretive difference of some kind (cf. Chomsky’s (2001) so-called *Fox-Reinhart intuition about optionality*); more specifically, their optionality leads us to expect an “extra” meaning/formal consequence/other effect *not* directly associated with the (potentially covert) obligatory interrogative force-marking element in interrogative structures. This expectation seems to be borne out, although it is often extremely difficult to specify what meanings/other effects Q-particles add (see again Enfield, Brown, and de Ruiter 2012 for discussion).

The same is true for many of the 25 or so *yes/no* Q-particles available in Thai (see Bailey 2012:chap. 7, Yaisomanang 2012). *Mǎy* ‘not’ and *rǎi* ‘or’ are the basic Q-particles, but these combine with other elements to produce the observed large inventory of Q-particles. In some cases, the resulting Q-particles are clearly tag elements or alternative-marking adverbials, that is, elements that seem more appropriately classified as clausal adjuncts, as their English translation-equivalents would be:

- (52) a. tɛ̀ khǎŋ-thíi-léew kin sǐi-khǐaw dii khǎn [Thai]
 but last.time eat color.green good ascend(=ASP)
chây-máy?
 Q
 ‘But last time, you took the green (medicine), and you got better, right?’
- b. mây rúu wâa loonbaan cà pít rú-plàaw.²⁸
 NEG know COMP hospital CM close Q empty
 ‘I didn’t know whether the hospital would be closed (or not).’
 (Iwasaki and Ingkaphirom 2005:288)

What our consideration of some of the languages featuring multiple elements that have been labeled Q-particles shows, then, is that these elements vary considerably in terms of their interpretive and formal properties, some seeming to be highly grammaticalized and others significantly less so. Therefore, as with the auxiliary and negative particles considered in previous sections, we cannot straightforwardly assume that final Q-particles will necessarily be spell-outs of relevant functional heads—here, CP-related heads like Int or Force.

The attested diversity of final Q-particles allows us to understand Dryer’s (2009b:350) observations about the worldwide and Africa-specific distribution of V-O-Q and V-O-Neg structures: the former type is much more widespread, both worldwide and within Central Africa, than the latter. This is what we would expect given standard generative assumptions about the locus of clause-typing (within the outermost layer(s) of the clausal structure) and given the empirical fact that a very wide range of elements are harnessed by the world’s languages to serve interrogative-related functions; in the negative domain, by contrast, there is no specific clause-hierarchy reason to expect final Neg, nor do the sources of negation markers necessarily have any connection with an external periphery.²⁹ In light of this

²⁸ *Rú-plàaw* literally means ‘or empty’. As Yaisomanang (2012) shows, *rú-plàaw* surfaces in the same type of question—an alternative question—as *rú-mây* ‘or not’; more grammaticalized *mây* and less bleached *plàaw* are therefore in the same kind of relationship as the one we observed in relation to grammaticalized *le/zo* and less bleached completive markers in section 2.1.

²⁹ In V-O-Neg and V-O-Q languages, the hierarchical discrepancy between these two elements is very evident in structures where the final Neg- and Q-particles cooccur. As (i)–(ii) show, Neg precedes Q (Dryer 2009b:350):

- (i) w- átò wái déngà ù rú? [Kanakuru (West Chadic; Nigeria)]
 NEG-FUT.3SG.FEM get pot NEG Q
 ‘Can’t she get a pot?’

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discrepancy, the following observations require further attention:

... VONeg languages tend to be VOQ, and ... the use of VONeg order may be in some sense “mimicking” the VOQ word order. ... Another, less common, phenomenon that may be associated with VO-Neg word order is VO-Aux order, where Aux is a particle indicating tense or aspect. A number of languages from central Africa also have such clause-final tense-aspect particles. (Dryer 2009b:361–362)

We will return to the matter of languages that seem to be “serial offenders” in the FOFC context in section 4.4.

Here, I will conclude by summarizing the Q-particle patterns that have emerged in this section. To begin with, final Q-particles do not appear to be subordinators (i.e., complementizers). In many languages, this is clearly signaled by the presence of one or more initial complementizers, which surface in the expected initial position; in others, the interpretive contribution suggests a noncomplementizer element. Q-particles also tend to be optional, though not typically in the way that complementizers can be optional in familiar languages (e.g., English). In the latter case, complementizer omission does not produce interpretive effects; in the Q-particle case, by contrast, it typically does, although the precise nature of the difference between Q-particle-containing and -lacking structures is often difficult to articulate. As we saw with auxiliary and negative particles, Q-particles vary as to how grammaticalized they are, some—notably the tag-type elements—evidently still being independently stressable and often also prosodically marked off from the rest of the structure, suggesting clausal adjunction. Some characteristic sources for Q-particles were identified, notably negation and disjunction, and, as in earlier sections, we observed that Q-particles may be (apparently) homophonous with other elements in the system.

2.3.2. Final C-Particles

Turning to C-particles more generally, we observe many of the same properties. That noninterrogative C-particles cannot straightforwardly be equated with complementizers is very clear in languages like Vietnamese (Duffield 2013a, 2014a,b), Taiwanese (Simpson and Wu 2002), Thai (Jenks 2011), and Shupamem (Nchare 2012), to name but a few. First, consider the following data:

- (53) a. Tôi mong-ước **rằng/là** mình có thể có ngọn đèn [Vietnamese]
1SG wish COMP self can possess lamp
như th.
like so
'I wish that I had a lamp like that.'
(Duffield 2013a:141)

-
- (ii) (Newman 1974:71)
dè kpã mò **fa ya?** [Mumuye]
AORIST.NEG meet 2SG NEG Q
'Did he not meet you?'
(Shimizu 1983:103)

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b. Phải nói **rằng là** thế hệ trẻ của chúng ta
 MODAL say COMP COMP generation young of PL 3PRN
 rất tài năng.
 very talented
 ‘(I) have to say that our young generation is very talented.’
 (Duffield 2013a:142)

c. *Phải nói **là** **rằng** thế hệ trẻ của chúng ta
 MODAL say COMP COMP generation young of PL 3PRN
 rất tài năng.
 very talented

- (54) a. A³⁰-hui siong● **kong●** A●-sin m● lai. [Taiwanese]
 A- hui think COMP A-sin NEG come
 ‘A-hui thought that A-sin was not coming.’
- b. A●-hui siong● A●-sin m● lai **kong●**.
 A-hui think A-sin NEG come KONG
 ‘A-hui thought that A-sin was not coming.’
- c. A●-hui siong● **kong●** A●-sin m● lai **kong●**.
 A-hui think COMP A-sin NEG come KONG
 ‘A-hui thought that A-sin was not coming.’
 (Simpson and Wu 2002:296)

What these examples show is that both Vietnamese and Taiwanese have initial subordinators. *Rằng* is the standardly used declarative subordinator in Vietnamese, while *là*, which is also (homophonous with) the copula and the topic marker, is very common in the colloquial language. Taiwanese *kong* has grammaticalized from a ‘saying’ verb into an initial complementizer.³¹ Although *là*, in colloquial Vietnamese, surfaces in apparently the same initial position as *rằng*, it is clear that the relationship between *là* and *rằng* is not one of simple formal equivalence; as (53b,c) show, these elements may occur in the same structure, with *rằng* necessarily preceding *là* in this case. Taiwanese provides a striking example of how grammaticalization can target the same element (here, the verb of saying, *kong*) twice to produce what appear to be formally distinct (homophonous) elements—here, what look like an initial and a final C-element, the latter evidently a matrix element, given that it can occur in monoclausal structures (see Simpson and Wu 2002 for discussion).³² Significantly, these

³⁰ The dots in these examples indicate that the previous element has undergone tone-sandhi change.

³¹ See also innovative Mandarin *shuo*:

- (i) Zhangsan xiang **shuo** Lisi bu lai le. [Innovative Mandarin]
 Zhangsan think that Lisi NEG come ASP
 ‘Zhangsan thinks that Lisi is no longer coming.’
 (Hwang 1998; see also Wang, Katz, and Chen 2003)

³² Initial *kong* is also possible in structures like (i), where it resembles insubordination markers like Spanish *que* (see Corr 2016, in preparation, for recent overview discussion):

- (i) **Kong** u cit khuan lang la! [Taiwanese]
 KONG have this kind person SFP
 ‘[I can’t believe] that there exist this kind of people!’
 (Hsieh and Sybesma 2007:8)

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elements may again cooccur, making it very clear that multiple positions are in play, and also that these homophonous elements require some form of distinct formal analysis (see section 4.4).

Shupamem (Grassfields Bantu) also features obligatorily cooccurring elements in subordinate clausal contexts of various kinds. As (55a–d) show, the elements most closely resembling English complementizers—*júó* ‘that’ (also originally derived from the demonstrative) in (55a), the agreeing relative form of *júó* in (55b,c), and *nàká* ‘if’ in (55d) (see also Nchare 2012:337–339 for illustration of *kuú* ‘if.PRES’ and *kuú* ‘if.PAST’)—are initial; by contrast, the invariant final particle glossed ‘COMP’ by Nchare (2012) is necessarily clause-final. As the examples show, this particle is obligatory in indicative embedded contexts, but barred in subjunctives introduced by initial *mí*, regardless of their matrix (56a) or embedded (56b) status. In the latter case, then, the question of homophony arises once more.

- (55) a. $\eta\upsilon\upsilon\eta\eta\acute{\eta}\acute{a}m$ ná n- $zú\acute{u}$ $p\grave{a}y\acute{u}$ **$júó$** [Shupamem]
 2³³.chimpanzees IRR PTCP-eat 3.food that
 $pú\acute{u}\eta\grave{e}n$ n- $zú\acute{u}$ **$nó$** .
 2.humans PTCP-eat COMP
 ‘Chimpanzees eat food that humans eat.’
 (Nchare 2012:333)
- b. $món$ **x-wó** $í$ $jé\acute{s}é$ **$nó$** $p\grave{a}:$ $r\grave{a}n\grave{i}$.
 1.child 1-REL 3SG commission COMP be smart
 ‘The child that he commissioned is smart.’
 (Nchare 2012:188)
- c. $pón$ **p-wó** $í$ $jé\acute{s}é$ **$nó$** $p\grave{a}:$ $r\grave{a}n\grave{i}$.
 2.child 2-REL 3SG commission COMP be smart
 ‘The children that he commissioned are smart.’
 (Nchare 2012:188)
- d. **$n\grave{a}k\acute{a}$** $món$ $mbú$ $\acute{f}i$ $j\acute{a}nk\grave{e}$ $l\grave{e}rw\grave{a}$ **$n\grave{e}$** ...
 if 1.child IPFV NEG learn lesson COMP
 ‘If the child does not revise his lessons ...’
 (Nchare 2012:263)
- (56) a. **$mí$** $wù$ $twó$ (**$*n\grave{e}$**)! [Shupamem]
 that 2SG come.SUBJ
 ‘Come!’
 (Nchare 2012:339)

This conventionalized main-clause use of the innovated subordinating marker points to a further round of reanalysis in relation to *kong*, a significant fact in featural terms, as will become clear in section 4.4. Here, it is worth noting that “insubordination” *kong* can cooccur with the sentence-final particle (SFP) *la*, a further piece of evidence in favor of the conclusion that Taiwanese C-related elements do not all target the same position.

³³ The numeral markings preceding noun glosses represent Bantu noun class membership: that is, Class 1 or 2, the (mostly) animate singular and plural classes, respectively.

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- b. mǎ pí kèn ì mí í mà twò (*nə).
 1SG P3 forbid 3SG COMP 3SG NEG come COMP
 ‘I forbade him to come [lit. that he not come].’
 (Nchare 2012:418)

Udmurt (Uralic) represents a particularly interesting further instance of a language in which two complementizers seem to be able to cooccur.³⁴ It is generally assumed that Proto-Uralic lacked finite subordination (Collinder 1960), and modern Uralic languages still favor nonfinite subordination (Anderson 2005). However, under influence from Russian, since the 19th century Udmurt has developed a finite subordination pattern involving not just one but apparently two C-elements. Strikingly, one of these—*shto* ‘that’, borrowed from Russian—is initial, while the other—*shuysa*, a participial/gerundial form, which has grammaticalized from Udmurt *shuyny* ‘to say’—is final. Further, contact with Russian since the 12th century has resulted in a shift from head-final to head-initial in many domains (Tánczos 2014). In FOFC terms, the expectation is that this kind of word order change will run “top-down” (Biberauer, Newton, and Sheehan 2009a,b, Biberauer, Sheehan, and Newton 2010)—in other words, that initial complementizers will be introduced before changes within TP and VP occur. Tánczos (2014) shows that the internally grammaticalized final *shuysa* became established prior to borrowing of Russian *shto* (deriving from the *wh*-word ‘what’): initially restricted to infinitival purpose clauses—a context in which it is obligatory in Modern Udmurt—*shuysa* was subsequently extended to all types of subordination, and today surfaces in both adverbial and complement clauses. The source form, participial *shuysa* ‘saying’, is also still available in the modern language. *Shto* was borrowed after the development of *shuysa*, and the Udmurt corpus (19th–21st century, as Udmurt does not have a long written tradition) indicates that it initially alternated with *shuysa* in all subordination contexts, before becoming possible alongside *shuysa*. As shown in (57), all three options—*shuysa* only, *shto* only, and *shto...shuysa*—are available in Modern Udmurt:

- (57) a. Mon malpas’ko, **shto** ton gozhtod [Udmurt]
 I.NOM think.PRES.3SG COMP you.NOM write.FUT.2SG
 umoj kn’iga.
 good book.NOM
 ‘I think that you will write a good book.’
- b. Mon malpas’ko, ton gozhtod umoj
 I.NOM think.PRES.3SG you.NOM write.FUT.2SG good
 kn’iga **shuysa**.
 book.NOM COMP
- c. Mon malpas’ko, **shto** ton gozhtod umoj
 I.NOM think.PRES.3SG COMP you.NOM write.FUT.2SG good
 kn’iga **shuysa**.
 book.NOM COMP
 (Orsolya Tánczos, pers. comm.)

All the complements in (57) are extraposed, which is what we would expect for at least the subset of clauses featuring an initial complementizer: as discussed in chapter 2, [_{VP} [_{CP} C [_{TP} ...]] V] is a FOFC-violating structure, and it is a striking fact that preverbal *shto*-clauses

³⁴ Thanks to Orsolya Tánczos for most helpful discussion of the Udmurt data.

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are not attested in the Udmurt corpus (Tánczos 2014).³⁵ By contrast, preverbal *shuysa*-clauses are possible:

- (58) Ta malpanez ulon-e pycha- loz **shuysa**, [Udmurt]
 this.NOM dream.DET life- ILL naturalize-FUT.3SG that
 nokin öz ockyly.
 nobody.NOM NEG.AUX.PAST.3 believe.SG
 ‘Nobody believed that this dream will come true.’
 (Tánczos 2014:9, citing the newspaper *Udmurt dunne*, 2 February 2009)

This, combined with the fact that *shto* is used significantly less frequently than *shuysa* (447 vs. 12,478 uses in the 2.6-million-word corpus that Tánczos investigated; *shto...shuysa*, in turn, surfaces only 16 times), is unexpected in the FOFC context: a final C in a VO language constitutes a FOFC violation. Closer consideration, however, reveals that the more widespread use of *shuysa* is in part also due to its generally wider distribution. Recall that *shuysa* is obligatory with infinitival purpose clauses (59a). Additionally, it is also compatible with finite adverbial clauses (59b), and it can occur with embedded interrogatives (59c); by contrast, *shto* is only possible in declarative contexts, as shown in (60):

- (59) a. So ujani **shuysa** vetliz. (= preposed *shuysa*- [Udmurt]
 3SG swim.INF COMP went clause)
 ‘He/She went to swim.’
- a’. So vetliz ujani **shuysa**. (= postposed *shuysa*-
 3SG went swim.INF COMP clause)
- b. So vetliz med ujaloz **shuysa**.
 3SG went PART swim COMP
 ‘He/She went to swim.’
- c. Mon juas’ko kytyn ton ulis’kod **shuysa**.
 1SG ask where you live COMP
 ‘I am asking, where do you live.’
 (Orsolya Tánczos, pers. comm.)

³⁵ It is worth noting that *shto* is not the only initial complementizer in Modern Udmurt; more complex forms, deriving from Udmurt sources, also exist—for example, *maly ke shuono* ‘because’ (literally ‘why (=what.DAT) if say.PTCP’). *Shuysa* is also not the only final complementizer; *ke* ‘if’, which also features in the complex complementizer illustrated in (ia), is also available. The following examples illustrate:

- (i) a. Sasha shunyt dis’jas’k- iz, **maly ke shu-ono** [Udmurt]
 Sasha.NOM warm get.dressed-PAST.3SG why if say-PTCP
 pedlon kez’yt val.
 outside cold was
 ‘Sasha dressed warmly because it was cold outside.’
- b. Shunyt dis’jas’ky, pedlon kez’yt **ke!**
 warm get.dressed outside cold if
 ‘Dress warmly if it is cold outside!’
 (Orsolya Tánczos, pers. comm.)

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- (60) a. *So vetliz **shto** ujaloz. [Udmurt]
 3SG swim.INF COMP went
- b. So vetliz **shto** med ujaloz (**shuysa**).
 3SG went COMP PART swim COMP
 ‘He/Shewent to swim.’
- c. *Mon juas’ko **shto** kytyn ton ulis’kod (**shuysa**).
 1SG ask COMP where you live COMP

(59)–(60) show that *shuysa* must be less specified than *shto*; it has more of the character of a Bhatt and Yoon (1992)–type pure subordinating C-element, while *shto* still seems to require a declarative complement. That [finiteness] cannot be part of *shto*’s featural specification is clear from the way it integrates with infinitival clauses: as the contrast between (60a) and (60b) shows, the infinitival particle *med* is obligatory in purpose clauses introduced by *shto* (contrast (59a)).³⁶ Both of the Udmurt complementizers that we have been discussing, then, differ from *that*-type complementizers. See section 4.4 for further discussion.

Languages with apparently FOFC-violating C-elements do not always feature doubling structures of the kind we have discussed so far. Consider, for example, the data in (61):

- (61) a. [vẽ⁴² tse²¹ tsa⁴² **no**³³] sy⁵⁵ xã⁵⁵ yõ^{42.37}. [Bai (Sino-Tibetan)]
 write tidy COMP word read easy
 ‘Words that are written tidily are easy to read.’
- b. [zuotian chi yurou **de**] ren [Mandarin]
 yesterday eat fish COMP person
 ‘the people who ate fish yesterday’
 (Philip 2012:115)

Superficially, these examples appear to instantiate FOFC-violating V-O-C structures. Importantly, however, *no*³³ and *de*—sometimes described as “association markers” (Li and Thompson 1981)—can be shown to be linkers in Philip’s (2012) sense—that is, semantically vacuous functional heads that serve as a syntactic means of marking subordination relationships within a wide range of phrase-types. Consider (62), for example:

- (62) a. si⁵⁵ yu³³ lu³¹ tsu³¹ xẽ⁵⁵ [**no**³³ tuĩ⁵⁵]. [Bai]
 willow this CL grow LINK straight
 ‘This willow has grown straight.’

³⁶ This parallels the pattern found in creoles, which in purpose (and some other irrealis) clauses feature a complementizer derived from a verb of saying (*tãa* in the partly English-influenced Surinamese creole, Saramaccan) that necessarily combines with an infinitive marker (*fu* in Surinamese; see Veenstra 1996, Aboh 2006, Demonte and Fernández Soriano 2009):

(i) I taki **tãa** **fu** a naki di daga. [Saramaccan]
 2SG said COMP PART he hits DET dog
 ‘You told/asked him to hit the dog.’
 (Veenstra 1996:156)

³⁷ The numerals in this example indicate tones.

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- b. [zhuyao **de**] daolu [Mandarin]
 main LINK road
 ‘main road’
- c. Ni keyi [manman **de**] zou.
 2SG can slow LINK walk
 ‘You can walk slowly.’
- d. Wo-men [kexue **de**] yanjiu nei-ge wenti.
 1- PL science LINK research that-CL problem
 ‘We will research that problem scientifically.’
 (Philip 2012:33)

As they are generalized linkers, we might expect Bai *no*³³ and Mandarin *de* to be highly grammaticalized elements, significantly more so than familiar clausal complementizers, and also more so than clause-specific subordinating (SUB) heads of the kind initially proposed by Bhatt and Yoon (1992). Interestingly, Zhang (1999, 2012) proposes that Mandarin *de* should in fact be analyzed as an even more grammaticalized element, namely, as a nominalizing *n*; particles of this type will be discussed in section 4.3.

To conclude this section, let us briefly consider a final type of apparently FOFC-violating C-element: the sentence-final particles (SFPs) so abundantly attested in, among other languages, the Chinese varieties. Consider the following examples:

- (63) a. Ni-men zou **ba!** [Mandarin]
 2- PL go SFP (order)
 ‘You leave (now)!’
 (Huang, Li, and Li 2009:35)
- b. I ma bo huantui **ma honn?** [Taiwanese Southern Min]
 3 too NEG objection SFP SFP
 ‘(You know), he (or she) did not have any objection either, right?’
 (Hsieh and Sybesma 2007:7)
- c. gam³ ngok³ gau² **ge² haa²?** [Cantonese]
 so hard do SFP SFP
 ‘Why is it so hard, huh?’
 (Fang 2003:147)
- d. keoi⁵ lo² -zo² dai⁶-jat¹ ming⁴ **tim¹ ge³ laa³ wo³.**
 3 take-PERF first place SFP SFP SFP SFP
 ‘And she got first place too, you know.’
 (Matthews and Yip 1994:345)
- (64) a. ngo⁵ dim² dou¹ wui² bong¹ nei⁵ **gaa³!** [Cantonese]
 1 how all will help you SFP
 ‘I will surely help you under all circumstances (as you should know)!’

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- b. ngo⁵ dim² dou¹ wui² bong¹ nei⁵ **gaak**³.
1 how all will help you SFP
'I will surely help you under all circumstances (contrary to what you seem to think).'
(Fang 2003:60)

As the examples show, the SFPs, all of which are optional elements whose presence is not required to produce a grammatical structure, contribute speaker- and/or hearer-oriented information that is typically hard to pin down in precise terms. Analyses that have interpreted them as C-heads (see, e.g., Sybesma and Li 2007, Chan 2013, Lam 2014, Paul 2014, 2015, and Pan and Paul 2017 for discussion and references) thus seem very natural: in clausal tripartition terms, CP is the discourse domain. More recently, however, the arguments for distinguishing between the Rizzian articulated CP (Rizzi 1997 et seq.) and a higher, specifically Speech-Act-oriented domain have mounted (see the works already mentioned below (45); work like that of Frascarelli and Hinterhölzl (2007) and Frascarelli (2008) partially bridges these proposed domains). In the present context, therefore, the questions that arise are (i) whether attested SFPs belong to the CP-domain “proper” or whether they are in fact more peripheral, and (ii) to what extent these elements can be said to form part of the verbal extended projection—that is, can these elements be thought of as contributing projecting heads that integrate with the lower verbal functional structure? Prosodic evidence suggests that the Chinese particles, at least, *are* formally integrated since they are part of the same intonation unit as the main clause (see, e.g., Simpson and Wu 2002, Sybesma and Li 2007, Yap, Wang, and Lam 2010, Zhang 2014).

The discussion in this section has shown that final particles in the C-domain seem to share the properties that emerged from our consideration of auxiliary and negation particles in previous sections. First, these elements lack inflectional marking and may sometimes contrast with elements that exhibit this marking (Shupamem was one case in point). Second, they very frequently occur in systems that also include initial elements serving similar or related functions. Third, they frequently seem to be homophonous with other elements serving different functions. Fourth, they are often optional, thus not contributing centrally to the grammaticality of the structures they combine with, sometimes seemingly being “secondary” to an initial element in the system. Finally, they vary in the degree to which they have been grammaticalized, and some, particularly those exhibiting great positional freedom, seem amenable to analysis as adverbs.

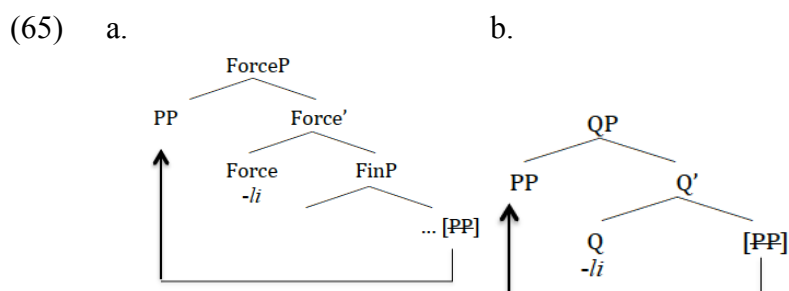
2.4. Final Particles in Nonclausal Domains

The discussion here will be briefer than what has gone before, as space considerations preclude similarly detailed discussion of all the attested nonclausal final-particle facts. My objective here will simply be to confirm (i) that final particles surface in head-initial nominal and adpositional structures, and (ii) that, as in the clausal domain, these particles seem to occur both XP-internally and at the outermost XP-periphery.

I have already mentioned in passing (i) that Q-particles may combine with subclausal constituents and (ii) that the elements serving as Q-particles may actually be focus, contrastive, or emphatic (i.e., information-structurally relevant) particles that also serve in noninterrogative contexts (recall the discussion of Quechua, Marshallese, and Supyire in section 2.3.1). Here, I note that VO languages do not appear to employ Q-particles in combination with *wh*-elements to anything like the extent that OV languages do (see, e.g., Cable 2010 and Slade 2011 on Tlingit and Sinhala, respectively). The Syntactic Structures of the World’s Languages (SSLW; <http://sswl.railsplayground.net>) database gives only 8 VO languages in which the “Q-marker follows narrow focus”: Chickasaw (Muskogean), Finnish

(Finno-Ugric), Kom (Niger-Congo), Malagasy (Malayo-Polynesian), Russian (Slavic), Tagalog (Austronesian), (Ancient) Tupí (Tupí-Guaraní), and Zamboanga Chabacano (a Spanish-based creole spoken in the Philippines). Of these, Finnish can be disregarded for current purposes, given its head-final nominals (Dal Pozzo 2007; see Holmberg 2014 for detailed discussion). The relevant Russian and Malagasy elements are particularly well-studied, so I will focus on these here.

Like Finnish *-ko*, Slavic *-li* can (in many languages) adjoin both to verbs and to XPs. Schwabe (2004) proposes that *-li* in Russian and Bosnian/Croatian/Serbian is the clitic spell-out of Force (i.e., a CP-related element), while *-li* in Bulgarian and Macedonian has two attachment options: (i) to V, and (ii) to an XP marked with a [focus] feature (see also Holmberg 2014 on Finnish *-ko*).³⁸ Crucially, then, the proposal is that what seems to be a shared lexical item is in fact not; while Russian and Bosnian/Croatian/Serbian have a *clausal* particle *-li* spelling out one of the heads of the CP-domain, Bulgarian and Macedonian have a non-CP-related *li* that adjoins to subclausal constituents of different kinds. The latter *-li* is of interest here since a subset of its XP-adjunction options produce final-over-initial structures, for example, [[_{PP} P [_{DP} D NP]]-*li*]. The contrast between the two types of *-li* is schematized in simplified form in (65).³⁹



As the diagrams show, Force-head *-li* (65a) will not produce FOFC violations, as it contributes to the verbal extended projection (being specified [+V] in BHR's terms), while the fronted XP is [-V]. (The case where the fronted element is V evidently does not produce a FOFC violation; therefore, we will leave it aside here. We will return to the case where VP fronts in section 4.1.) XP-adjoined *-li* can, however, create a FOFC-violating structure if its specification is [+N] and the XPs in its specifier are also [+N].⁴⁰ In interpretations of P that

³⁸ It is worth noting that some of the final Q-particles identified in *WALS* are in fact also final clitics. Fyem (Platoid, Niger-Congo) is a case in point:

(i) taa won aré= n= a? [Fyem]
 3SG.PERF wash clothes=DEF=Q
 'Did she wash the clothes?'
 (Nettle 1998:50)

³⁹ No significance should be attached to the Force-Fin selection relationship depicted in (65a); the structure of the Russian and Bosnian/Croatian/Serbian CP may well include additional articulated structure, but this is not our concern here. Similarly, the comp-to-spec movement in (65b) does not signify rejection of the arguments for antilocality (Abels 2003, 2012, Grohmann 2003), though see Ledgeway to appear for a proposal in terms of which antilocality is in fact a parameterizable principle.

⁴⁰ This configuration is, of course, the same as that usually assumed for English possessives—for example, *the [people down the road]'s magnolia tree*. We will return to this matter in section 4.1. On the assumption that possessors—and, more generally, elements that can be marked by the Saxon genitive in English—are first-merged within the thematic domain of the nominal (see, e.g., Alexiadou, Haegeman, and Stavrou 2007 for discussion), and that their surface location reflects a position in which they have subsequently been internally merged via A-movement, they do not violate FOFC. Only “roll-up” movements involving head-initial structure violate FOFC, and, in the case of

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view it as an extension of the nominal EP (see Asbury et al. 2008 and Cinque and Rizzi 2010 for discussion), this would also apply to PP, and not just to nominals.

Although *-li* is a polarity particle, fundamentally associated with *yes/no* questions, it may also surface with *wh*-elements in both Bulgarian and Bosnian/Croatian/Serbian:⁴¹

- (66) a. Kavko **li** nameri? [Bulgarian]
 what Q found.3SG
 ‘What, if she has found anything, has she found?’
- b. Sta **li** si mi to kupio? [Bosnian/Croatian/Serbian]
 what Q AUX.2SG me.DAT PART buy.PTCP
 ‘What, if you have bought anything for me, have you bought?’
 (Schwabe 2004:389)

As the translations show, *wh-li* gives rise to a very particular reading—one that overrules the existential presupposition initially introduced by the *wh*-interrogative (Schwabe 2004). As we will see, this type of reading is typical of languages whose *wh*-elements do not require a Q-particle for licensing purposes (contrast Tlingit, Sinhala, and Japanese, on which, see Cable 2010, Slade 2011; we will return to Malagasy below). Also typical of (65b)-type Q-particles (broadly construed; Finnish *-ko* is also a case in point) is that they do not seem to select for specific categories. Any category bearing [focus] may combine with *-ko* and Bulgarian/Macedonian *-li*, [focus] being potentially associated with an element embedded quite deeply within the *-ko/-li*-bearing XP; that is, it is not simply the case that *-ko/-li* select for a peripheral FocP associated with nonclausal XPs or verbs. We will return to this (non)selection point in section 4.3.

Malagasy *no* is another particle that seems to combine directly with *wh*-words. It forces the relevant *wh*-elements to undergo movement that would not otherwise take place, *wh*-in-situ being available for nonsubjects in the language (see Potsdam 2006:2158⁴²). As Potsdam

possessor-raising, it is only the (head-initial) specifier of the lower nP that is raised; the possessum remains in situ (cf. **the people down the road magnolia tree’s*).

⁴¹ Bošković (2001) observes that *wh-li* is the only XP-*li* option readily allowed by Bosnian/Croatian/Serbian native speakers; other options sound archaic. Interestingly, the Q-particle *-ko* can be combined with *wh*-words only in colloquial Finnish, producing emphatic focus:

- (i) Mi- stä- **kö** talo -sta hän tuli? [Finnish]
 which-ELA-Q house-ELA he came
 ‘WHICH house did he come from?’
 (Holmberg 2014:286)

As Holmberg (2014) observes, some of the core *wh*-words in Finnish seem to contain a cognate of *-ko*: *mikä* ‘what’, *kuka* ‘who’, and *kuinka* ‘how’ are all cases in point. Colloquial Finnish therefore appears to be “reusing” *-ko* in a way familiar from discussion of Jespersenian developments in other domains, notably negation (see, e.g., Jespersen 1917, Kiparsky and Condoravdi 2006, van Gelderen 2009, 2011, Willis, Lucas, and Breitbarth 2013, Meisner, Stark, and Völker 2014).

⁴² Potsdam (2006:2158) supplies the following examples:

- (i) a. Nividy **inona** ianao? [Malagasy]
 buy.ACT what 2SG.NOM
 ‘What did you buy?’
- b. Novidin’ **iza** ny omby?
 buy.PASS who the cow
 ‘Who was the cow bought by?’
- c. Nividy vary **taiza** ianao?
 buy.ACT rice where.PAST 2SG.NOM

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(2006:2159–2160) notes, *no* combines not only with (promoted-to-) subject *wh*-words (*pace*, among others, Keenan 1976, 1995, Pearson 2001, Paul 2002, Sabel 2002), but also with adverbial *wh*-words, which, unlike arguments, can be extracted regardless of the voice of the verb (68a–c) (being a focus marker, *no* also surfaces in clefts (Paul 2001), a significant fact, as we will see):

- (67) a. Iza **no** nivity ny akoho? [Malagasy]
 who FOC buy.ACT the chicken
 ‘Who bought the chicken?’ (✓ Agent-subject *wh*)
- b. Inona **no** novidin’ i Bao?
 what FOC buy.PASS Bao
 ‘What was bought by Bao?’ (✓ Patient-subject *wh*)
- c. *Inona **no** nivity i Bao?
 what FOC buy.ACT Bao
 ≠ ‘What did Bao buy?’ (✓ Patient nonsubject *wh*)
- d. *Iza **no** novidina ny akoho?
 who FOC buy.PASS the chicken
 ≠ ‘Who was the chicken bought by?’ (× Agent nonsubject *wh*)
 (Potsdam 2006:2159)
- (68) a. Taiza **no** nanafina ny lakileko ny zaza? [Malagasy]
 where FOC hide.ACT the key.1SG the child
 ‘Where did the child hide my key?’
- b. Taiza **no** nafenin’ ny zaza ny lakileko?
 where FOC hide.PASS the child the key.1SG
 ‘Where did the child hide my key?’
- c. taiza **no** nanafenan’ ny zaza ny lakileko?
 where FOC hide.CIRC the child the key.1SG
 ‘Where did the child hide my key?’
 (Potsdam 2006:2160)

It is possible but not necessary to circumvent what appears to be a *wh*-fronting FOFC violation (69a) by extraposing the PP (69b) (see Sheehan 2013a,b and Biberauer to appear b for discussion of a parallel pattern in OV languages featuring head-initial PPs):

- (69) a. [Iza tamin’ ireo boky ireo] **no** novakin- dRabe? [Malagasy]
 which PREP DEM book DEM FOC read.PASS-Rabe
 ‘Which of these books were read by Rabe?’
- b. [Iza] **no** novakin- dRab [tamin’ ireo boky ireo]?
 which FOC read.PASS-Rabe PREP DEM book DEM
 ‘Which of these books were read by Rabe?’
 (Potsdam 2006:2171)

‘Where did you buy rice?’

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Significantly, *no* can again be shown not to constitute a clausal Q-particle, but instead to combine directly with the XPs (here, *wh*-phrases) it appears with. Like Finnish *-ko*, too, it can in fact be shown to be a determiner (see again Holmberg 2014 on the Finnish analysis, which, barring this determiner-parallel, is rather different from the one that seems most plausible for Malagasy). As the facts pointing to this analysis effectively illustrate the care that needs to be taken to establish the structure underlying what superficially appears to be a final-over-initial string, we will look at them briefly here.

Malagasy *no*, like Finnish *-ko*, is part of a larger particle system. More specifically, Malagasy features a class of so-called *postpredicate particles* including the quantifiers *daholo* ‘all’ and *avy* ‘each’ and the exclamative *anie*, which consistently mark the right edge of the (fronted) VP and, more generally, pattern like VP-adverbs (Keenan 1976, 1995):

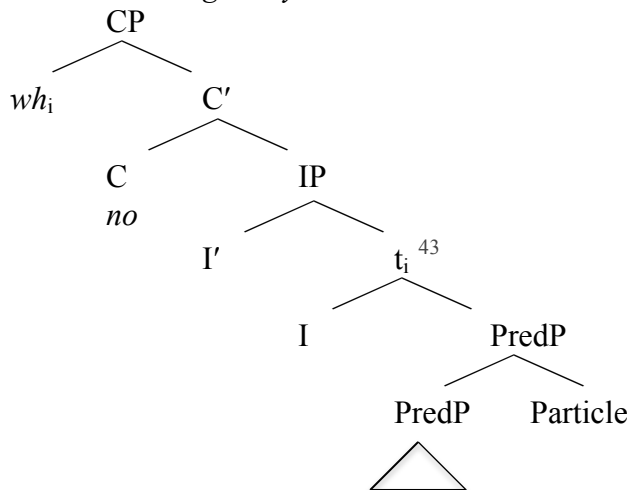
- (70) a. Manapaka bozaka (**anie**) Raso! [Malagasy]
cut.ACT grass EXCL Raso
‘Raso is really cutting the grass!’
- b. Mihomehy (**foana**) Raso.
laugh.ACT always Raso
‘Raso is always laughing.’
(Potsdam 2006:2163)

Crucially, in *wh*-questions, postpredicate particles obligatorily surface directly after the *wh*-word and before *no*:

- (71) a. Iza (**anie**) **no** manapaka bozaka (***anie**)? [Malagasy]
who EXCL FOC cut.ACT grass EXCL
‘Who is really cutting the grass?’
- b. Iza (**foana**) **no** mihomehy (***foana**)?
who always FOC laugh.ACT always
‘Who is always laughing?’
(Potsdam 2006:2163)

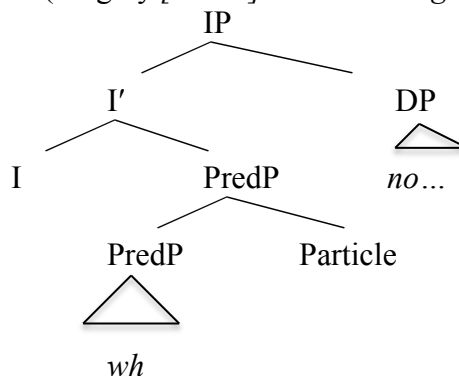
If Malagasy *wh*-structures are pseudoclefts, as they are in many other Austronesian languages, including Tagalog, Seediq (Aldridge 2002), and Palauan (Georgopoulos 1991), the data in (71) follow readily: because the *wh*-elements are not fronted XPs as illustrated in (72a) (as suggested by Sabel (2002, 2003), among others) but nonverbal predicates first-merged with the VP, the subject being a headless relative clause containing an operator (Op_j), as illustrated in (72b), we expect postpredicate particles to surface in the immediately post-*wh* position (72b) rather than clause-finally (72a):

(72) a. *Fronting analysis*



(Potsdam 2006:2161)

b. *Clefting analysis* (roughly [*It was*] *who that laughed?*)



(Potsdam 2006:2161)

In light of (72b), even phrasal *wh*-elements will not violate FOFC, as *no* and the *wh*-element do not form a constituent (we will return in section 4.4.2 to the matter of (69)-type structures, in which a head-initial phrase is dominated by a potentially head-final element within its extended projection). What these examples show, then, is (i) that care is required to determine whether a Q-particle (or related element) is directly associated with the clause or with a subclausal XP; (ii) that subclausal particles may combine with a range of X(P)-types, raising questions about their selectional requirements; and (iii) that subclausal particles may not be as directly connected with (apparently) fronted constituents as seems to be the case at first sight.

Before leaving Q-particles aside, let us briefly consider a FOFC-relevant type described by Bayer and Obenauer (2011) (see also Bayer and Trotzke 2015, Bayer 2016a,b, Bayer, Häussler, and Bader 2016):

(73) a. [Von wem **schon**] kann man das sagen?
 from whom MP can one that say
 ‘Of whom can one say that?! (Nobody!’

⁴³ I represent Spec,IP as Spec-final here, following the presentation in Potsdam 2006 and what was more generally assumed for VOS languages until the early 2000s (see the discussion in Carnie and Guilfoyle 2001, and see Carnie, Harley, and Dooley 2005 for convincing argumentation that these languages, too, feature initial specifiers). I adhere to the older convention simply for expository convenience, as the details of Spec,IP placement are not relevant to the discussion here.

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- b. [Für wen **nur**] hat Holland dieses Stück Kitsch gemacht?
for who FOC has Holland this piece kitsch made
'Who on earth did [Agnieszka] Holland make this piece of kitsch for?!'
(Bayer and Obenauer 2011:481)

Questions like these instantiate what Bayer and Obenauer (2011) call *special questions*, that is, questions that reflect certain speaker attitudes such as irritation or surprise (also see, e.g., Obenauer 2004; and see McCoy 2001 and Parrott 1997 on Russian *že*, which behaves in the same way as the German elements discussed here). In German, (eliminative) focus particles like *nur* 'only' and *bloß* 'only' (originally, 'naked') and modal particles like *denn* (originally, 'then') and *schon* (originally, 'already') surface in questions of this type. In examples like (74a,b), they can be shown to form a constituent with the *wh*-phrase, but they are also possible in the clause-medial position more generally associated with modal particles in German (see Struckmeier 2014 for discussion and references):⁴⁴

- (74) a. [Von wem] kann man das **schon** sagen?
from whom can one that MP say
'Of whom can one say that?! (Nobody!)'
(Bayer and Obenauer 2011:472)
- b. [Für wen] hat Holland **nur** dieses Stück Kitsch gemacht?⁴⁵
for who has Holland FOC this piece kitsch made
'Who on earth did [Agnieszka] Holland make this piece of kitsch for?!'
(Bayer and Obenauer 2011:481)

Both as part of the *wh*-XP and in clause-medial position, these particles may also stack, with the ordering of the particles within the stack being fixed:

- (75) a. [Warum **denn nur**] kann AMD ihre CPUs billiger anbieten als Intel???
why MP FOC can AMD its CPUs cheaper offer than Intel
'How on earth can AMD offer their CPUs cheaper than Intel (I am wondering)?'
(Source: <http://3dfusion.de/forum/archive/index.php/t-1152.html>)
- b. [Wie **denn bloß**] kann ich sie fangen?
how MP FOC can I her catch
'How on earth can I catch her (I am wondering)?'
(Source: <http://www.e-stories.de/gedichte-lesen.phtml?70420>)

These data thus once again raise the question of how many lexical items we are dealing with—underspecified elements with numerous selection options or distinct pairs of clausal

⁴⁴ Intriguingly, Antonelli (2015) shows that Late Latin fronted *wh*-elements other than *why* (which is plausibly first-merged within the CP-domain; see Rizzi 2001) typically cooccurred with connective particles like *enim* 'for', *ergo* 'therefore', *igitur* 'therefore', and *autem* 'but'. This calls to mind the behavior of *wh*-words in languages like Quechua, where *wh*-movement is obligatory when the *wh*-element is associated with certain focus and/or contrastive topic particles (recall the discussion earlier in this section).

⁴⁵ Without intonational disambiguation, this structure is ambiguous between a reading in which *nur* 'only' associates with *dieses Stück* 'this piece'—thus, 'For which person did Holland make only this single piece (as opposed to lots of pieces)?'—and the one indicated in the text.

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and subclausal elements with more restricted selection options?—and of how they integrate with the structures they appear in (the same question arises in relation to Russian *že*; see again McCoy 2001 and Parrott 2007 for discussion).

As we have seen, focus particles may optionally combine with *wh*-elements (including head-initial *wh*-phrases) in some languages to create apparently FOFC-violating structures. Additionally, focus particles may combine with focused XPs more generally, producing further apparently FOFC-violating structures:

(76) a. Ny mofo **no** novidin- dRasoa.⁴⁶ [Malagasy]
the bread FOC buy.PASS-Rasoa
'It was the bread that was bought by Rasoa.'
(Potsdam 2006:2169)

b. Ao ambanin' ny fandriana **no** nanafina ny lakile-ny zaza.⁴⁷
there under the bed FOC hide.ACT the key- the child
'It's under the bed that the child hid my key.'
(Potsdam 2004:247)

(77) a. Inti **muntu** me kubwa. [Kituba]
tree FOC PERF fall.INF
'It's the tree that has fallen.'
(Maniacky and Van der Wal 2015:3)

b. Ngái **moto** nazalí koloba. [Lingala]
1SG FOC 1SG.be.PERF 15.talk
'It's me who is talking.'

b'. Ngái **ndé** nazalí koloba.
1SG FOC 1SG.be.PERF 15.talk
'It's me who is talking (rather than someone else).'

b''. Ngái **ndé moto** nazalí koloba.
1SG FOC FOC 1SG.be.PERF 15.talk
'It's me who is talking (rather than someone else).'

(Maniacky and Van der Wal 2015:30–31)

The Kituba and Lingala examples illustrate a phenomenon also attested in other Bantu languages (particularly within Guthrie's (1948) B, C, and H classes), in terms of which a grammaticalized version of the noun meaning 'person' has become specialized as an exclusive and/or exhaustive-focus marker, which surfaces in nominal-final position (Bantu nominals are consistently head-initial). If this focus marker is indeed part of the nominal and not a clausal head (see Maniacky and Van der Wal 2015 for arguments that at least the Kituba and Lingala *moto* constructions involve a DP *moto*-constituent), and if it occupies a high position within the nominal extended projection, it will violate FOFC. Significantly, Lingala possesses a second postnominal (and therefore potentially FOFC-violating) focus marker, *ndé*. This element can be shown to be older than *moto* (Maniacky and Van der Wal 2015:31;

⁴⁶ On the determiner incorporation found in (76a,b), see Travis 2006).

⁴⁷ As noted in connection with (68), adjunct fronting does not require specific voice morphology on the verb; thus, (76b) would also be grammatical with passive or circumstantial voice marking on V.

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see also Epée 1976 on the same form in Duala) and, being combinable with focused XPs of all kinds (DPs, PPs, etc.), to have a wider distribution than *moto*. Serving the same function as *moto*—the marking of exclusive focus—it is interchangeable with *moto* (77b,b') and, more surprisingly, combinable with *moto* (77b''). In the latter case, speakers prefer the sequence *ndé moto*, as in (77b''), although the addition of *moto* apparently does not result in any change of meaning. What is important for our purposes is that this case once again involves a final particle that, like many of the clause-final particles considered in earlier sections, may cooccur with an element that one might have expected it to be in complementary distribution with, thus raising questions about the nature of both elements.

Apparently FOFC-violating topic particles can also be identified. What is very interesting here, however, is how difficult it is to establish whether postnominal topic particles in languages with head-initial nominals are in fact *clausal* or *subclausal* (i.e., directly topic-associated) heads.⁴⁸ Malagasy *dia* is a case in point. Consider first the data in (78):

- (78) a. Rasoa **dia** tokony manoroka an- dRabe. [Malagasy]
Rasoa TOP should kiss ACC-Rabe
'Rasoa, she should kiss Rabe.'
- b. Ny fiaramanidina **dia** (tena) hovidin' ny zaza.
the aeroplane TOP EMPH buy.PASS the child
'The aeroplane, the child will indeed buy it.'
(Potsdam 2006:2167)
- c. [Itỳ radara itỳ] **dia** [ny Rosiana] **no** nanao azy.
this radar this TOP DET Russian FOC PAST.AT.do 3.ACC
'As for this radar, it was the Russians who made it.'
(Keenan 1976:273)

None of these examples clearly signals whether *dia* is a clausal Topic head or a Topic head associated with the fronted Topic: *tena* in (78b) is a prepredicate particle (Potsdam 2006:2165) with properties resembling Laka's (1990) Pol and Klein's (1998, 2006) Assertion; that is, it is an element we would expect to follow material topicalized into the CP-domain. Similarly, given the pseudocleft analysis of Malagasy focus constructions noted in the discussion surrounding (72), there would be space for a Topic domain dominating the focused XP in (78c). Even Pearson's (2001:237) framing-demonstrative diagnostic, in terms of which identical demonstratives mark the left and right edge of the DP—thereby producing another superficially FOFC-violating (doubling) structure (see (81))—does not help, as we would expect a DP-associated topic particle to be external to the usual boundaries of the DP. Paul (2008) argues for a clausal analysis of *dia*, and this also appears to be the consensus view on Austronesian topic particles more generally.

Final demonstratives and specificity markers also surface in apparently FOFC-violating structures, as shown in (79)–(81):

⁴⁸ It is worth noting that languages well-known for their final topic particles—for example, the Sinitic and many West African languages—do not constitute challenges to FOFC, as these languages have head-final nominals. The consistently head-initial Mayan languages, in turn, do not seem to have final nominal-related particles.

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- (79) a. di titi **dida** [Berbice Dutch Creole]
the time that
'that time'
- b. di heɫ weki **di**
the whole week this
'this whole week'
(Kouwenberg 1993:156)
- (80) a. **este** libro [Colloquial Spanish]
this book
'this book'
- b. el libro **este**
the book this
'this book'
- c. No podré comer de la tarta **esa**.
NEG be.able eat.INF of the tart that
'I won't be able to eat (from) that cake.'
(Carla Bombi-Ferrer, pers. comm.)
- d. la televisión **esta** que tenemos
the television that which 1PL.have
'the television that we have'
(Alexander 2007:111)
- (81) a. **ity** boky **ity** [Malagasy]
this book this
'this book'
- b. **ity** boky mena **ity**
this book red this
'this red book'
- c. **ity** boky novakin'- ny mpianatra tany an- tokotany **ity**
this book PAST.AT.read-DET student PAST.there OBL-garden this
'this book which the student was reading in the garden'
- d. *ity boky **ity** novakin'- ny mpianatra tany an- tokotany
this book this PAST.AT.read-DET student PAST.there OBL-garden
(Pearson 2001:237)

Importantly, demonstratives are obligatorily final in Berbice Dutch, but only optionally so in colloquial Spanish (see (80a,b)) and Malagasy. In the case of Berbice Dutch and colloquial Spanish, final placement requires the presence of the initial determiner (the same is true in Celtic; see Guardiano 2010 and chapter 8). In the Spanish case, final demonstratives clearly play a speaker-oriented function, communicating that speakers believe themselves to be referring to hearer-old information from which they may be wanting to distance themselves (Bombi-Ferrer 2014). Crucially, this final demonstrative, unlike its initial counterpart, cannot

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be focused (Bombi-Ferrer 2014). Colloquial Spanish also differs notably from Malagasy in that the postnominal demonstrative must precede relative clauses, as in (80d), which is the order that is ungrammatical in Malagasy (see (81d)).

The final apparently FOFC-violating structure that we will briefly look at here involves postpositions in (circumpositional) PP structures of the West Germanic type, as in (82) (see Biberauer to appear b for more detailed discussion):

- (82) a. Die bottel dryf **onder** die brug **deur**. [Afrikaans]
the bottle float under the bridge through
'The bottle floats through underneath the bridge.'
- b. Hulle hardloop (**in**) die bos **in**.
they run in the bush in
'They run into the bush.'

Given that the postpositional elements consistently express directional meanings that seem to be universally associated with a higher hierarchical position than the locative meanings expressed by their prepositional counterparts (see Cinque and Rizzi 2010), it seems reasonable to assume that we are dealing with a final-over-initial structure here.

In sum, then, we have seen that there are many clausal and subclausal structures in which final particles seem to combine with head-initial structure in the manner proscribed by (5). As we will see in sections 3 and 4, consideration of the structures that might potentially underlie these superficially FOFC-violating structures renders this profusion readily understandable.

2.5. Borrowed Final Particles

Final discourse particles appear to be readily borrowable into VO languages. Consider the following examples from English contact varieties:

- (83) a. Have some more food **lah**. [Singaporean Colloquial English]
(Wee 2004:117)
- b. It doesn't matter when the first time I do Philosophy **le**¹, [Hong Kong English]
I met the same problem with you **gaa**³.
'It doesn't matter when I first did philosophy; when I did, I encountered the same problem as you did.'
(Gibbons 1987:83)

Further, as we have already seen in connection with Udmurt (section 2.3), it is also known that complementizers differing in headedness from those already in the system may be borrowed. Probably the most well-known borrowed complementizer is Persian *ke*, which has been borrowed into languages belonging to six different families: Indo-European (Asia Minor Greek), Indo-Aryan (e.g., Hindi-Urdu, Bengali; Meenakshi 1986, Bayer 1999, 2001), (northern) Dravidian (e.g., Brahui; Haig 2001), Turkic (e.g., Turkish), Kartvelian (e.g., Laz), and Nakh-Daghestanian (e.g., Lezgian). As noted earlier in connection with Hindi-Urdu (39b) and Udmurt (57), and as shown for Uzbek (Karluk, Turkic) in (84), borrowing of an initial complementizer always entails taking on the postverbal distribution of the borrowed complementizer:

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- (84) Men ishonman **ki** siz tilagingiz-ga yetasiz. [Uzbek]
 1SG believe.1SG that you desire- 2PL.POSS.DAT reach.2PL
 ‘I believe that you will reach [the object of] your desire.’
 (Bodrogligeti 2003:1222)

An in part similar pattern can be found in Jambi-Teochew, a strongly Malay-influenced variety of Southern Min spoken in Jambi City, Sumatra. Consider (85):

- (85) a. [_{RC} (**Yang**) pha? Aling **kai** nongkyã] khao. [Jambi-Teochew]
 that hit Aling that child cry
 ‘The child that Aling hit cried.’
 a’. *_{[RC} Nongkyã (**yang**) pha? Aling **kai**] khao.
 b. [Nongkyã **yang** pha? Aling (**kai**)] khao.
 child that hit Aling that cry
 ‘The child that Aling hit cried.’
 b’. *_{[Yang} pha? Aling (**kai**) nongkyã] khao.
 (Peng 2011:1)

Kai is the head-final Chinese relative complementizer, while *yang* is its head-initial Malay counterpart, which has been borrowed into the Jieyang variety of Teochew Chinese spoken in Jambi City (see Peng 2012 for more detailed discussion of this variety and related ones). As the examples show, Malay *yang* may optionally surface in prenominal relatives (85a). Similarly, Teochew *kai* may optionally surface in postnominal relatives (85b). What is not possible, however, is for a structure featuring *only* Teochew *kai* to be postnominal (85a') or, conversely, for one featuring *only yang* to be preverbal (85b'). To an extent, then, we see the pattern familiar from clausal complementation contexts: wherever only a single relative complementizer is present, pre- and postnominal placement is as predicted, a finally headed relative clause having to precede the head noun and an initially-headed one having to follow it. Precisely how the additional complementizer is integrated into the structure such that it does not disrupt the relationship between the head noun and the placement-determining complementizer is an unanswered question at this point, however, as is how a final element that would normally be analyzed as a C-head—*kai*—is able to combine with a head-initial clause without falling afoul of FOFC. The first question—the integration matter, which the discussion of Brazilian Portuguese *não* in section 2.2 has already shown to be relevant in the FOFC context—cannot be addressed here in any definitive way owing to the unavailability of the kind of data needed to establish an empirically motivated analysis (though see section 4.2.2 for a theoretically motivated speculation). The second—how head-final *kai* may combine with a head-final clause to create a relative—will receive attention in section 4.3 (see also note 84, as the same question arises in relation to *de*-relatives in Mandarin and other more familiar varieties).

3. FOFC-Compliant Final-Particle Structures

Section 2 has shown that there are a great many superficially FOFC-violating structures involving final particles. In some cases, it is possible to see quite readily why a seemingly problematic structure is not so, but there are also many cases where matters are not so clear. The objective of this short section is to set out the formal circumstances that might give rise to a superficially FOFC-violating structure—[[Head-Complement] ... Particle] (henceforth, *H-C ... Part*)—without FOFC actually being violated. As will become clear, the characterization

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of FOFC given in (5) leaves room for a number of formal scenarios that will produce superficially FOFC-violating structures that are in fact FOFC-compliant; and, strikingly, all of these seem to be attested.

(5) crucially excludes structures in which final heads belonging to a given extended projection (EP) dominate initial heads belonging to the same EP in the sense of Grimshaw (1991 et seq.). Appealing to formal categorial features, this amounts to saying that final heads with a given categorial specification (e.g., [+V] or [-V]) cannot dominate initial heads with the same categorial specification. This formulation of the condition means that the following formal configurations will not give rise to FOFC violations:

- (86) *FOFC-compliant H-C ... Part configurations*
- a. The particle heads a projection to which a *noncomplement* head-initial XP has A- or \bar{A} -moved.
 - b. The projection hosting the particle is *structurally lower* than the projection of the head-initial structure.
 - c. The particle is *categorially distinct* from the head-initial structure, bearing a *distinct categorial feature*.
 - d. The particle is *categorially distinct* from the head-initial structure in *lacking a categorial specification*. Here there are two possibilities:
 - i. It does bear one or more other formal features ([F]s), alongside semantic features ([S]s) (Chomsky 1995).
 - ii. It lacks [F]s altogether and is syntactically inert; it may or may not bear [S]s.
 - e. The particle is an *agreement-realizing* element not present in the Numeration as an element bearing an independent headedness specification; that is, it is the PF reflex of a narrow-syntax-internal Agree relation.

In the following section, I will show that each one of these structures exists, and, more specifically, that every one of the potentially FOFC-violating particle-containing structures discussed in section 2 appears to instantiate one of the above FOFC-compliant structures.

4. Reconsidering the Final-Particle Data

4.1. Final Particles in A- and \bar{A} -Movement Configurations

BHR's analysis of head-final order entails that it is necessarily the consequence of (leftward) movement. More specifically, head-final order is assumed to result from ("*roll-up*") *comp-to-spec* movement (*pace* Abels 2003, 2012, Grohmann 2003).⁴⁹ A FOFC violation, then, entails *comp-to-spec* movement of a head-initial XP, in other words, one that has not itself undergone internal *comp-to-spec* movement. This is crucially distinct from the *spec-to-spec*

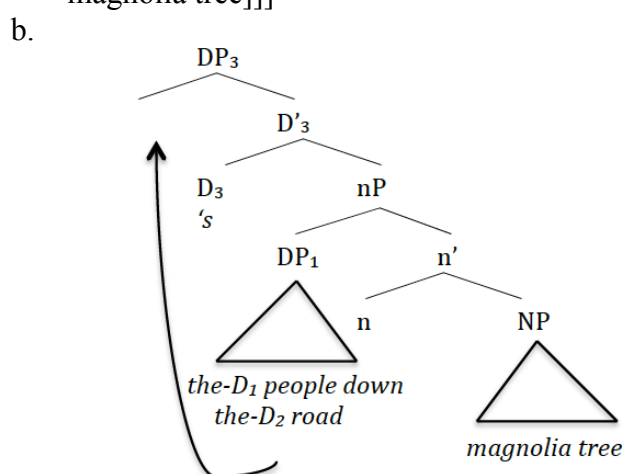
⁴⁹ The parentheses around "*roll-up*" are important here. As numerous authors point out (see, e.g., Baker 2005b, Cinque 2005b, Biberauer 2008, Hawkins 2008, Broekhuis 2011, Biberauer and Sheehan 2013, Biberauer and Roberts 2015b, Biberauer to appear b), "head-final"/OV languages vary in the rigidity of their head-finality requirement. Biberauer and Sheehan (2013) distinguish three types:

1. rigidly head-final languages like Japanese and Malayalam, which consistently require "*roll-up*," that is, *comp-to-spec* movement;
2. intermediate head-final languages like Dutch and German, which feature few head-final categories and consequently permit CP-extraposition and, optionally, PP-extraposition; and
3. minimally head-final languages like Vata, Lokaa, and the S-O-V-X languages discussed in Hawkins 2008 and Biberauer 2016a, which are only OV where O is a DP.

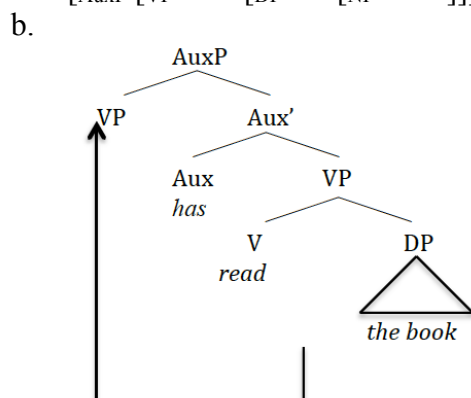
In all cases, OV order is generated by *comp-to-spec* movement of some kind; but this is only "*roll-up*" movement in the case of Type 1 languages.

movement involved in canonical A- and \bar{A} -movement, which cannot give rise to FOFC violations. This is an important outcome for the kind of “deep” universal approach to FOFC advocated by BHR, in terms of which FOFC bans the generation of final-over-initial structures during the syntactic derivation (see, e.g., Sheehan 2013a, Etxepare and Haddican 2014, and chapter 5 for “shallow” approaches that permit the generation of final-over-initial structures in the syntactic derivation but then “undo” these at PF). If the spec-to-spec movement resulting in (87) (repeated from note 41) were to “count” as a final-over-initial structure in the same way as the comp-to-spec movement generating (88)’s *V-O-Aux structure, we would not have any account of the difference in grammaticality between the two: in both cases, a head-initial XP (DP_1 and VP) has moved into the specifier of a YP (DP_3 and AuxP) whose head Y is spelled out to the right (i.e., finally) in relation to XP.

- (87) a. [DP_3 [DP_1 the- D_1 [NP people [PP down [DP_2 the- D_2 [NP road]]]]]] ’s- D_3 [NP n [NP magnolia tree]]]



- (88) a. [$AuxP$ [VP read [DP the [NP book]]]] has]



We would also not be able to account for \bar{A} -movements like VP- (or vP-)fronting in head-initial languages like Swedish and Sardinian, or, indeed, for VP- (or vP-)fronting in any language in which C is [+V], as assumed by Grimshaw (1991). As the examples in (89) show, this type of movement would always result in a FOFC-violating configuration if FOFC were simply a matter of a head-initial XP of a given type being spelled out (overtly or covertly) to the left of a head of the same type:⁵⁰

⁵⁰ If we assume the wider, non-EP-based definition of FOFC initially proposed by Holmberg (2000a) and upheld by Hawkins (2013), Sheehan (2013a, chapters 5–7, this volume), and Etxepare and

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- (89) a. [CP [VP **Ät pajerna**] såg-C [TP vi att han gjorde]]. [Swedish]
 ate pies.DET saw we that he did
 ‘Eat the pies we saw that he did.’
 (Anders Holmberg, pers. comm.)
- b. [CP [VP **Tunkatu su barkone**] C [TP pro asa-T]]. [Sardinian]
 shut the window have.2SG
 ‘It’s shut the window you have!’
 (Jones 1988:339)
- c. They said they would support the cause and [CP [VP **support** [DP **the cause**]] C
 [TP they did]].

That \bar{A} -type V-O-Aux of the kind illustrated in (89) is fundamentally different from “basic”/neutral V-O-Aux is strikingly illustrated by the contrast in colloquial German (90a,b). (The structural representations are simplified for expository convenience. This contrast is also readily replicated in Dutch and Afrikaans, both of which permit extraposition more readily than German.)

- (90) a. [CP [VP Gesprochen mit ihr] hat-C [TP er t_{hat} nicht mehr t_{VP}]]. [Colloquial German]
 spoken with her has he not
 more
 ‘As for speaking with her, he no longer did that.’
- b. *... dass er nicht mehr gesprochen mit ihr hat.
 that he not more spoken with her has
- c. ... dass er nicht mehr gesprochen hat mit ihr.
 that he no more spoken has with her
 ‘... that he didn’t talk to her anymore.’
 (Haider 2012:80)

Evidently, then, FOFC only applies to structures in which the specifier is occupied by the categorially identical head-initial XP that constitutes the complement of its head—that is, where the EP-sister of a head X has “rolled up” into its specifier. This means that none of the final Topic- and Focus-particle structures that can be shown to involve clausal Topic and Focus heads into which a subclausal XP (i.e., a clearly noncomplement XP) has raised are FOFC-violating; the same would be true for clausal Topic and Focus heads located in vP (see the work arising from Belletti 2004), and for clausal Q-particles that can be shown to attract interrogative elements into their specifier, and, more generally, left-peripheral, discourse-oriented particles attracting subclausal XPs to their specifier.

Before this section concludes, a comment on the Finnish case that formed the basis of Holmberg’s (2000a) postulation of the forerunner of FOFC—which did not make reference to EPs and therefore did not account for the acceptability of head-initial DPs and PPs—is in

Haddican (2014), the potential problem highlighted here becomes even more serious: Topic/Focus-C, Subject-T, and Object-v configurations in a language with head-initial nominals would, for example, all violate FOFC.

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order. Holmberg shows that Finnish, which is fundamentally a VO language, permits both VO and OV orders. The latter arise in cases where O is focused, and, in this case, final Aux is also possible. Crucially, though, *V-O-Aux is ruled out. Since VO orders are the neutral orders in Finnish, this instantiates the same pattern as that illustrated for German in (90b); that is, the two gaps appear to be parallel. We will return to the question of precisely what rules out neutral V-O-Aux in section 4.6.

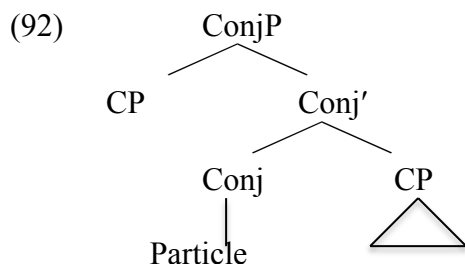
4.2. Final Particles Located below a Head-Initial XP

When the final particle is structurally *lower* than the head-initial XP, it will not violate FOFC, as this is in fact (a version of) the inverse-FOFC, initial-over-final structure. BHR highlight Germanic negation structures as one case of this type of superficially problematic but in fact FOFC-compliant structure. In (91), V and O have in fact undergone independent movement to positions higher than the low vP-internal domain associated with Germanic negation (see Haegeman 1995 for detailed discussion):

- (91) a. Du verstehst mich (einfach) **nicht**. [German]
you understand me simply not
'You (simply) don't understand me.'
- b. Jag såg den **inte**. [Swedish]
I saw it not
'I didn't see it.'
(Anders Holmberg, pers. comm.)

This structural-height factor also seems to be relevant outside Germanic—for example, in evaluating the clause-final negation markers found in numerous Bantu languages (Devos and van der Auwera 2013). On the standard assumption that Bantu verbs raise at least as far as the Asp-domain and possibly beyond (see, e.g., Demuth and Harford 1999, Seidl 2001, Baker 2005b, Henderson 2007, Zeller 2013), V-O-Neg structures with negative elements that can be shown to be structurally low in these languages will be FOFC-compliant in the same way as the examples in (91). Devos and van der Auwera (2013) cite numerous Bantu languages featuring an optionally or obligatorily concord-ing final negation element derived from 'nothing'-cognates (3 languages) and from a locative form (27 languages). As is clear from consideration of Jespersen Cycle-type developments crosslinguistically (see van Gelderen 2011 and Willis, Lucas, and Breitbarth 2013 for overview discussion) and from Poletto's (2008a,b) consideration of the etymology and formal characteristics of negation elements in Italian dialects specifically, the source of initially nonnegative elements determines the domain within which they will grammaticalize. For our purposes, this is important because it supports the idea that 'nothing'- and locative-derived concord markers are located within the vP-domain, which, in turn, means that V-O-Neg structures in the relevant (V-to-Asp-raising) Bantu languages do not challenge FOFC. The same argumentation carries over to the subset of Austronesian V-O-Neg languages that can be shown to feature both verb movement and low negation elements (Kabola, in which the final concord element, *nene*, alternates with the adverb meaning 'still, yet', which would be housed in a low Aspect head in Cinque's (1999) system, seems a likely candidate).

A different case involves Q-particles that can be shown to be lower than the clause they associate with (Aldridge 2011, Bailey 2012). As noted in section 2.3, the disjunction element is a very common source of Q-particles in the world's languages. Aldridge (2011) argues that the structure giving rise to disjunction Q-particles is that in (92):



Here, Q-finality is the consequence of the elision of the second CP. The structure is clearly FOFC-compliant. This type of analysis seems correct for languages in which a disjunction element has not fully grammaticalized to become the main or default Q-particle (see again Aldridge 2011 for detailed discussion of an example from the history of Chinese, which included a stage of this kind). On the analysis of disjunction-sourced Q-particles in languages like Bwe-Karen, Estonian, and Thai, where the disjunction element constitutes the neutral Q-particle, which also exhibits signs of grammaticalization, see section 4.4.

The centrality of structural height as a consideration in determining the availability of an H-C...Part structure is also strikingly illustrated in a C-oriented borrowing case study presented in Biberauer, Newton, and Sheehan 2009a,b and Biberauer, Sheehan, and Newton 2010. Consider table 2 and the data below ((94) is repeated from (39b,c)):

Table 2

Distribution of final complementizers in Indo-Aryan (Biberauer, Newton, and Sheehan 2008:11)

No final C	Final C from 'saying'	Final C from demonstrative
Hindi/Urdu, Panjabi, Sindhi, Kashmiri, Maithili, Kurmali	Sinhala, Dhivehi, Marathi, Nepali, Dakkhini Hindi, Assamese, Bangla, Oriya	Marathi, Gujarati

- (93) a. (**kyaa**) aap wahaaN aa- ee- Ngii? [Hindi-Urdu]
 Q you there coming-FUT-2PL
 'Are you coming there?'
 (Davison 2007:182)
- b. to kal parat aalaa **kaa(y)**? [Marathi]
 he yesterday back come.PAST.3SG.M Q
 'Did he come back yesterday?'
 (Davison 2007:182, citing Pandharipande 1997:8)
- (94) a. us- nee puuc-aa [**ki** [**kyaa** tum aa- oogee]]. [Hindi-Urdu]
 3SG-ERG ask- PERF SUB Q you come-FUT
 'He asked whether you will come.'
 (Davison 2007:183)
- b. [[to kal parat aalaa **kaa(y)**]
 he yesterday back come.PAST.3SG.M Q
mhaaNun/asa] raam malaa witSaarat hotaa.
 QUOT such Ram 1SG.DAT ask.PROG be.PAST.3SG.M
 'Ram was asking me whether/if he came back yesterday.'
 (Davison 2007:184, attributed to R. Pandharipande)

As table 2 shows, many Indo-Aryan languages have developed or borrowed a final complementizer. Strikingly, the languages that have not done so share a property that is absent from those that have: they have an initial Q-particle (described as initial Pol in the relevant papers; see also (39)⁵¹), whereas languages that have a final complementizer have final Q-particles. Regardless of whether, in the clausal case, this particle lexicalizes Int (Rizzi 2001) or Force (Rizzi 1997), it is clear that the kind of subordinating complementizer that has been borrowed or developed in the relevant languages would need to spell out a *higher* projection than the Q-particle—either Force (where Q is Int) or Bhatt and Yoon’s (1992) Sub (where Q is Force). The fact that languages with initial Q-particles have resisted borrowing a final complementizer can therefore be understood as a response to FOFC: acquirers cannot postulate an analysis that would require the integration of a final element into the EP of a projection containing a lower head-initial XP.

A further case where a potentially FOFC-violating structure turns out to be innocuous because it involves the inverse disharmonic order, with the final element dominated by an initial one, is found in the PP-domain in Gungbe. The relevant structure is illustrated in (95):

- (95) a. Mi fɔn hàdòkpóló sɔn zàn lɔ jí! [Gungbe]
2PL stand immediately P₁ bed DET P₂
‘Get out of the bed immediately!’
(Aboh 2010:229)
- b. **P₁P** (= direction/goal/path) > **P₂P** (= **AxPart**)
(Aboh 2010)
- c. **DirP** > **PathP** > **LocP** > **AxPartP** > **KP** > **DP**
(adapted from Svenonius 2006, 2010, Pretorius in preparation)

As Aboh (2010) demonstrates, the prepositional Ps (P₁) behave consistently differently from the postpositional Ps (P₂). The former evidently constitute a small closed class of five members all expressing direction/goal/path. All derive from verbs (possibly via serial constructions), seem to assign Case, and, rather unusually given the crosslinguistic trend, must necessarily be stranded. The latter are all derived from nouns and closely resemble the elements Jackendoff (1996) originally designated *axial parts*.⁵² There are about 30 of them, they do not assign Case, and they must be pied-piped. Following Svenonius’s (2006) characterization of Ax(ial)PartP as a nominal-peripheral (“light noun”) projection located below the P-layers expressing location- and directed-motion-related meanings, Gungbe circumpositions will be initial-over-final structures (95b,c), the finality of the high nominal layer being unproblematic in view of Gungbe’s more generally head-final nominal system (see also Aboh 2004).

⁵¹ For the idea that Q-particles may be viewed, alongside Neg(ative) and Aff(irmative), as a spell-out of Pol, see Biberauer 2013, 2015b, to appear a, Holmberg 2013, 2016, and the discussion in section 4.4.

⁵² Jackendoff clarifies the notion “axial part” as follows:

The “axial parts” of an object—its top, bottom, front, back, sides, and ends—behave grammatically like parts of the object, but, unlike standard parts such as a handle or a leg, they have no distinctive shape. Rather, they are *regions* of the object (or its boundary) *determined by their relation to the object’s axes*. The up-down axis determines top and bottom, the front-back axis determines front and back, and a complex set of criteria distinguishing horizontal axes determines sides and ends. (Jackendoff 1966:14, emphasis added)

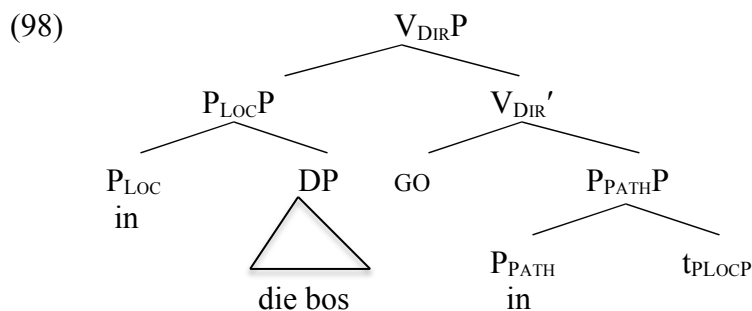
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At first sight, the West Germanic PP case introduced in section 2.4 is very different. Consider Afrikaans (96) (repeated from (82)):

- (96) a. Die bottel dryf **onder** die brug **deur**. [Afrikaans]
 the bottle float under the bridge through
 ‘The bottle floats through underneath the bridge.’
- b. Hulle hardloop (**in**) die bos **in**.
 they run in the bush in
 ‘They run into the bush.’

In this case, the prepositional P is clearly locative, while the postpositional P is directional. Viewed in terms of (95c), then, West Germanic circumpositions of this type appear to be FOFC-violating. In fact, however, the West Germanic PPs are unproblematic for reasons in part similar to those that hold for Gungbe. Crucial here is the fact that both *deurdryf* ‘drift through’ and *inhardloop* ‘run in’ exist as (directional) particle verbs in Afrikaans (see Pretorius in preparation for detailed discussion). Drawing on the further observation that both Dutch and Afrikaans have silent GO, which surfaces in structures like (97a,b) (see Van Riemsdijk 2002, Biberauer and Oosthuizen 2011), a (simplified) structure of the kind in (98) suggests itself to account for (82)/(96):

- (97) a. Hy is dorp toe [GEGAAN].⁵³ [Afrikaans]
 he is town to GO
 ‘He has gone to town.’
- b. Sy moet lughawe toe [GAAN].
 she must airport to GO
 ‘She must go to the airport.’



In (97), we see directionally interpreted structures that superficially lack a lexical verb. Van Riemsdijk (2002) provides convincing argumentation that this is only apparently the case and that a silent motion verb, GO, is in fact present in the structure. If this silent verb is also present in directional circumpositional structures like (82)/(96) and in directional postpositional structures more generally, we can understand why the “postpositions” in both

⁵³ Since Afrikaans differs from Dutch in lacking HAVE vs. BE auxiliary selection in compound tenses, at first sight it might seem implausible to assume the presence of Van Riemsdijk’s silent GO in structures like (97a), which contains a form of BE. However, given the systematic discrepancies between null and overt elements of “the same” kind (see, e.g., Nunes 2004, Kayne 2010a, Biggs 2014, Douglas 2015, 2016, Biberauer 2016a, to appear a) and the minimal specification associated with BE in Afrikaans, as in Dutch, this becomes less troubling.

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types of directional structures are not in fact postpositions at all. Consider (98) to see why this is so. This simplified structure follows Den Dikken (2010a,b) in assuming a PP-structure in which $P_{\text{LOC}}P$ is selected by $P_{\text{PATH}}P$, which is, in turn, potentially dominated by $P_{\text{DIR}}P$ (see also Koopman 2010 for a variant of this proposal). The presence of silent GO, however, raises the possibility of structures in which the directionality component is represented not by a full-fledged $P_{\text{DIR}}P$ but by a V that incorporates DIR , the silent $V_{\text{DIR}} \text{GO}$ —that is, a structure in which the PP-component is defective, with part of what PPs can contribute to directional meaning being contributed by the verbal entity with which they combine rather than by the PP itself.⁵⁴ Significantly in the current context, this is a structure in which the directional postposition is in fact lower than the locative preposition, with the two PP-components additionally no longer forming a contiguous PP (importantly, the premovement PathP-structure— $[_{\text{PATHP}} \textit{in} [_{\text{LOCP}} \textit{in} [_{\text{DP}} \textit{die bos}]]]$). Contrary to appearances, then, West Germanic-type circumpositional structures are doubly FOFC-compliant: they involve initial-over-final structures, and a categorially distinct element separates their potentially troublesome components, head-final $P_{\text{DIR}}P$ and head-initial P_{LOCP} .

A final, rather different illustration of the way in which structural-height considerations can allow us to understand the availability of apparently FOFC-violating structures comes from Cardinaletti's (2011) analysis of the behavior of Italian SFPs. Cardinaletti specifically considers Venetan modal particles like *poi* (originally, 'later') and *ciò* (originally, 'it/that'), which can surface not only finally, but also also clause-internally, and, in the case of *ciò*, initially. Consider the following data (see also Penello and Chinellato 2008):

- (99) a. Che beo el film, **ciò**! [Venetan]
 how nice the film CIÒ
 'What a nice movie (isn't it? I'm surprised)!'
 (Cardinaletti 2011:516)
- b. Parcossa, **ciò**, se comporte-o cosita?
 why CIÒ REFL behave-3SG so
 'Why does he behave like that?'
 (Cardinaletti 2011:517)
- c. **Ciò**, cossa i vol?
 CIÒ what 3PL want
 'Well, what do they want?'
- d. Cossa i vol, **ciò**?
 what 3PL want CIÒ
 'What do they want? (They shouldn't require anything ...)'
 (Cardinaletti 2011:519)

As (99c,d) clearly show, initial and final *ciò* introduce very different speaker perspectives. Further, Cardinaletti (2011:520) highlights the fact that SFPs are associated with the same intonation contour as right-dislocated constituents like that in (100b) (these examples are from Standard Italian, but the patterns are the same in Venetan):

⁵⁴ In Pretorius in preparation, these options are conceived of as the consequence of different "spanning" choices (see Svenonius 2011, 2016).

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- (100) a. Mi sembra strano che la macchina gliel-la presti. [Italian]
 to.me 3SG.seem strange that the car to.him-it 2SG.lend
 ‘It seems strange to me that you lend your car to him.’
- a’. Mi sembra strano [_{CP} che [_{FamTopicP} [_{DP} la macchina] FamTopic
 [_{IP} gliela presti ~~la macchina~~]]]
- b. Mi sembra strano che gliel-la presti, la macchina.
 to.me 3SG.seem strange that to.him-it 2SG.lend the car
- b’. Mi sembra strano [_{CP} che [_{TopicP} [_{IP} gliela presti la macchina] Topic
 [_{FamTopicP} [_{DP} la macchina] FamTopic [_{IP} ~~gliela presti la macchina~~]]]]]

Further, they behave like weak XPs, being uncoordinatable, unmodifiable, and not contrastively stressable, while nevertheless containing segments that can only occur in stressed syllables, with the result that they can bear word stress (see Cardinaletti and Starke 1999, Cardinaletti and Repetti 2008). Taken together, these facts lead Cardinaletti to conclude that Venetan modal SFPs are weak adverbs—that is, deficient XPs that necessarily occupy the specifier of a particular functional projection within the IP-domain. Importantly, then, Cardinaletti’s analysis entails that the relevant Italian SFPs are not merged within the CP-domain, despite their interaction with speaker-oriented meanings (see also section 4.4, and see, e.g., Bayer and Obenauer 2011, Batllori and Hernanz 2013, Biberauer 2013, 2016a, Kandybowicz 2013, Struckmeier 2014, and Biberauer and Roberts 2015c for further discussion of CP-oriented elements located within a lower clausal domain). These SFPs surface clause-finally as a consequence of further XP-movement around an IP-internal weak adverb, as schematized in (101) (note the parallel with the right-dislocation structure in (100b)):

- (101) a. È venuto, poi? [Venetan]
 3SG.have come POI
 ‘Has he arrived (I’m wondering)?’
 (Cardinaletti 2011:516)
- b. i. [_{YP} poi [_{Y’} Y [_{ZP} è venuto]]]
 where YP is within the IP-field
- ii. [_{XP} [_{ZP} è venuto] [_X X [_{YP} poi [_{Y’} Y [_{ZP} ~~è venuto~~]]]]]

This structure clearly does not violate FOFC. Moreover, while it is compatible with clause-internal uses of modal particles (see (99b)) and with right-dislocated elements that follow the final particle—as they indeed do—it requires us to assume that there is a fundamental difference between initial and final particles: as (99c) shows, initial particles precede elements that have moved into the CP-domain and therefore must be located within this domain. For colloquial Italian and varieties like Venetan, this seems correct, as Cardinaletti (2011:526–528) shows on the basis of semantic and morphological evidence. More generally, this proposal seems promising as an account of some of the final-auxiliary, final-negation, and final-Q-particle data discussed in sections 2.1–2.3. Where languages feature a large inventory of final elements marking aspect, tense, mood, negation, or interrogativity, particularly where these are viewed as “secondary” to initial elements drawn from a smaller inventory of elements expressing these notions, a weak-adverb analysis of the final particles seems particularly appealing. Consider again the discussion of Mumuye, Ma’di, Dholuo, Tenetehára, and the less grammaticalized auxiliary elements in Bwe-Karen, Lue, Cantonese, and Yixing in section 2.1; Ma’di in section 2.2; Lagwan, Mupun, Lele, Dholuo, Babungo, Mina, Zaar,

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Supyire, Fyem, Ogbrounagum, Tetun, and the Chinese and Karen languages in section 2.3; and at least German in section 2.4. Similarly, Malagasy's postpredicate particles (70) give the appearance of being weak adverbs, particularly when contrasted with its prepredicate particles (78b). We will return to the significance of this contrast between initial and final elements in section 4.4.1.

Here, we conclude that there are a variety of ways in which final particles can actually be lower than the initial XP they occur with, and also that we have empirical evidence that these possibilities are implemented.

4.3. Categorially Distinct Final Particles

If a final particle belongs to a different syntactic category than the initial XP, there will, again, be no FOFC violation. We have already seen that this consideration is relevant in understanding the Malagasy focus particle *no*, a nominal element that cannot therefore produce a FOFC-violating structure where it follows a fronted VP (see section 2.4). This scenario also arises quite frequently in the complementation context. Consider the Yom (Gur; Benin) data in (102):

- (102) a. ma ma dafaasə saŋər nɛɛ. [Yom]
 1SG know boys danced Nɛɛ
 ‘I know the boys danced.’
- b. ma ma ka dafaasə saŋər nɛɛ.
 1SG know COMP boys danced Nɛɛ
 ‘I know that boys danced.’
- c. Ma yer a cən ka gbəna nɛɛ.
 1SG saw 3SG go that sleep Nɛɛ
 ‘I saw a sleepwalker.’
 (Morgan 2012)

On the basis of (102a,b), it is tempting to conclude that *nɛɛ* is the obligatory complementizer in Yom, with initial *ka* being a secondary element. Consideration of (102c), however, reveals that *nɛɛ* is in fact a nominalizer (i.e., it is [-V]/[+N]), while its complements are verbal, an unproblematic situation as far as FOFC is concerned. The same analysis carries over to Shupamem (see the discussion around (55)–(56)). Importantly, it also seems to account for both of the languages that appear to run counter to the generalization that CPs with initial complementizers surface postverbally (and postnominally), namely, Harar Oromo and Old Akkadian (see Dryer 2009b, Biberauer and Sheehan 2012a, Philip 2012). Let us consider Harar Oromo first:

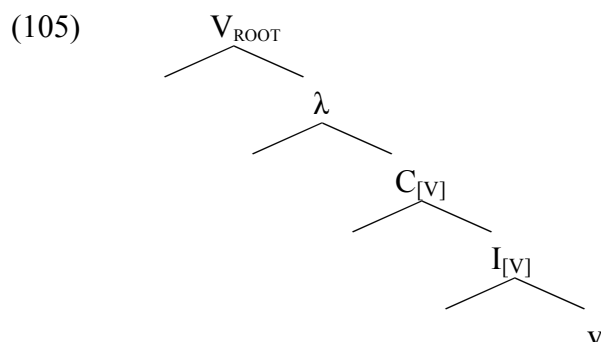
- (103) a. Innii [akka deem-u] good'-ám- é. [Harar Oromo]
 he COMP go- DEP order- PASS-PAST
 ‘He was ordered to go.’
 (Owens 1985:145)
- b. [Akka na árka-aní(=f)] d'uf- an.
 COMP me see-PL=LINK.DAT came-PL
 ‘They came to see me.’
 (Owens 1985:146)

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Here, we see that *akka* introduces preverbal complement clauses. Significantly, it is said in reference grammars to have a very wide distribution, being translatable as ‘according as, just as, like, how, manner, way, (in order) to/that, (the fact) that’ (see Hodson and Walker 1922 and Owens 1985, cited in Philip 2012:87). Owens (1985:114) refers to the clauses introduced by *akka* as “noun clauses,” a characterization that seems to be morphologically confirmed in cases like (103b), where dative marking is optionally possible, as shown. *Akka*, then, appears to be a [-V]/[+N] C-element. Consequently, Harar Oromo no more violates FOFC than Persian, where the nominalized nature of preverbal C-initial clauses is very transparent:⁵⁵

- (104) a. Man midānam (**ke**) gorbehā šir dust dārand. [Persian]
 1SG know COMP cats milk like have
 ‘I know that cats like milk.’
- b. Man [***(in) ke** gorbehā šir dust dārand ***(ra)**] midānam.
 1SG this COMP cats milk like have ACC know
 ‘I know that cats like milk.’
 (Lofti and Öhl 2004:1)

Franco (2012) argues that clausal complementation in fact *always* involves two elements, even though only one or even neither may be overt: a high nominal element, which he labels λ , and a lower verbal element that combines directly with the lower clause, that is, Grimshaw’s EP of V or CP.⁵⁶ This is schematized in (105):



Importantly, only the lower element is part of the EP of the embedded clause, while the higher element does not, in categorial terms, belong to either the embedded or the matrix XP; in Panagiotidis’s (2015) terms, the higher element would be a so-called SWITCH-element, that is,

⁵⁵ More generally, there is considerable crosslinguistic evidence that nominal features are added to elements that undergo fronting. Consider, for example, the nominalized forms that are a prerequisite for predicate doubling and VP-fronting in many languages (see, e.g., Aboh and Dyakonova 2009, Güldemann 2010, Buell 2012). If fronted VPs are always enclosed in “extra,” nonverbal structure facilitating \bar{A} -movement—as assumed, for example, in Biberauer and Roberts 2015b—we have an additional reason to understand why VP-fronting of head-initial VPs of the kind illustrated in (89) does not produce a FOFC violation.

⁵⁶ This proposal clearly echoes Rizzi’s (1997) Force-Fin take on complementation, but crucially differs from it in explicitly committing to the idea that only one of the complementizer positions is part of V’s EP. As we will see, it is also not clear that λ should be equated with Force, or, indeed, that complementation structures always take the specific bipartite form that Franco proposes. To the extent that Franco’s λ simply marks a relationship (subordination) that has already been marked by a lower element (by C_v), it acts as a linker in Philip’s (2012) sense. We will return to this point in section 4.4.

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one that changes the existing category of the element with which it combines. Franco's proposal successfully accounts for complementation and relativization patterns such as those observed in Shupamem (55)–(56) (on Udmurt, see section 4.4.2) and sheds very interesting light on the Vietnamese dual-complementizer structures discussed in section 2.3. Recall that Vietnamese permits structures in which two (declarative) complementizers cooccur ((106a,b) = (53b,c)):

- (106) a. Phải nói **rằng là** thế hệ trẻ của chúng ta [Vietnamese]
 MODAL say COMP COMP generation young of PL 3PRN
 rất tài năng.
 very talented
 'I have to say that our young generation is very talented.'
 (Duffield 2013a:142)
- b. *Phải nói **là rằng** thế hệ trẻ của chúng ta
 MODAL say COMP COMP generation young of PL 3PRN
 rất tài năng.
 very talented

Importantly, *là* also serves as the copula in Vietnamese, being in complementary distribution with the existential and assertion markers associated with the vP-domain (Duffield 2013a:141). It could thus instantiate Franco's C_V , with *rằng* constituting the SWITCH-element. Similarly, Chinese relative-marking *de*—a final marker, which dominates a head-initial clause, paralleling the use of Jambi-Teochew *kai* in (85)—has also been argued by Zhang (1999, 2012) to effectively serve as a SWITCH-element: in terms of Zhang's analysis, relative-marking *de* is an n-head, which would therefore instantiate Franco's higher λ and not constitute a challenge to FOFC (see also notes 83 and 84 on this proposal regarding n).

Now let us consider Old Akkadian. This originally SOV language featured an initial C, *kīma*—derived from a preposition *kī* with a fuzzy semantic range combined with an emphatic element, *ma*—that originated as an adverbial complementizer introducing (among others) comparative, purpose, and cause clauses. As documented in Deutscher's extensive work, *kīma*-clauses nearly always preceded the matrix V, also in cases where *kīma* apparently served to introduce complement clauses. Consider the following data:

- (107) a. [**kīma** tupp- ī annī-am tammur- **u**] [Old Akkadian]
 as.soon.as tablet-1SG.POSS DEM-ACC 2SG.M.see-SUB
 nēmetta-ka ana Bābili šubil- am.
 levy- 2SG.M.POSS to Babylon SG.M.send.IMP-VENT
 'As soon as you see this letter of mine, send your levy to me to Babylon.'
 (Deutscher 2009:63)
- b. [**kīma** udammiqak- kunūš- **i**] dummikā- nim.
 as 1SG.do.favors.PAST-to.you.PL-SUB do.favors.IMP.PL-to.me
 'As I have done you favors, do me favors.'
 (Deutscher 2000:40)
- c. [**kīma** še'- am lā imur- **u**] [atta tīde].
 COMP barley-ACC NEG.DEP 3SG.received-SUB 2SG.M-NOM 2M.SG-know
 'You know that he didn't receive the barley.'
 (Deutscher 2000:58)

As the examples show, *kīma* always cooccurs with subordination marking on the verb, either *-u* or *-(n)I*; this is C_V in Franco's terms. In fact, this marker surfaces in all subordinate clauses and, in older Akkadian, it served as the only subordination marker in relative and complement clauses (Deutscher 2000, 2001).⁵⁷ Significantly, the complement clause in (107c) is not in fact in immediately preverbal position; this is a(n SOV) clausal-fronting structure of the kind also discussed by Bayer (1999, 2001) in relation to Bengali, another language with both initial and final complementizers, and in which C-initial clauses can undergo topicalization-type fronting. A more accurate translation of (107c) might then be '(The fact) that he didn't receive the barley, you know' (the neutral complementation structure would lack *kīma*, relying exclusively on the verbal subordinator as outlined above). This is significant in light both of recent work on nominal complementation (see, e.g., Arsenijević 2009, Kayne 2009, 2010b) and Franco's (2012) proposal. More specifically, (107c)-type structures can be viewed as CPs associated with a silent light noun that takes the *kīma*-clause as its complement (see also note 58 in this connection). Deutscher (2006) shows that, during Akkadian's more general OV > VO shift, complement-clause-associated *kīma* underwent a grammaticalization process that entailed not only semantic but also morphophonological bleaching, ultimately producing initial *ki*, which consistently headed *postverbal* and thus FOFC-compliant complement clauses.⁵⁸ In Franco's terms, we can think of a more complex nominal domain at the top of fronted *kīma*-clauses having undergone formal reduction to leave only a light nominal, *ki* (see section 4.4 for a further possible interpretation of *ki*'s ultimate formal status). For our purposes, the key point is that Old Akkadian's preverbal head-initial CPs also do not seem to violate FOFC because there is a categorial distinction between the initial complementizer and both the selecting predicate and *kīma*'s complement. Again, then, a FOFC-compliant structure that gives rise to a superficially FOFC-violating structure is shown to exist.

4.4. Acategorial Final Particles

In the previous section, we discussed final particles whose categorial status is distinct from that of the head-initial XP they appear with. In this section, we will consider two further types of categorially distinct final particles, both of which count as categorially distinct by virtue of lacking a categorial specification, that is, by virtue of being acategorial. We will first discuss acategorial elements that do contain formal features ([F]s) and then take up acategorial elements that completely lack [F]s and are thus formally inert.

4.4.1. Acategorial Final Particles Bearing Noncategorial Formal Features

The Marshallese Q-particle *ke*, the Bulgarian and Macedonian Q-particle *-li*, and the German *wh*-final modal particles discussed in section 2.3 are all good examples of elements that appear to be categorially unspecified, yet bear noncategorial [F]s. In the former case, *-li* may adjoin to XPs of any category and to verbal heads without altering the categorial specification

⁵⁷ In the context of Franco's (2012) analysis, these clauses would still feature a null higher λ . Being nominal, its headedness would be immaterial to our concerns here.

⁵⁸ This brought factive complements into line with the other finite-complementation structures in Old Akkadian, namely, restrictive relative clauses. Like factive complements, relatives were initially only marked by means of the verbal subordination marker, meaning that they were prenominal. However, introduction of an initially agreeing demonstrative, which became nonagreeing *ša*, resulted in the rise of a consistently postnominal relative construction:

(i) eql- am [ša ... nītiq- u] lišqi'ū. [Old Akkadian]
field-ACC COMP 1PL.passed-SUB 3PL.should.water
'They should water the field that we passed.'
(Franco 2012:571)

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of the elements it attaches to: a *-li*-bearing nominal can be selected as an argument just like a *-li*-less nominal. Unless the required number of categorially distinct *-lis* is postulated, entailing considerable homophony, these elements must be acategorial; and the same is true for focus elements that combine with a wide range of XPs, like Lingala *ndé* discussed in section 2.4, and for all-purpose negators like English *not* and Moi (West Papuan) *dau*, illustrated in (108):

- (108) a. Nee Moi yi- sik **dau** y- e- sin- keelik. [Moi]
 person Moi 3PL.HUM-take NEG 3PL.HUM-POSS-knife-machete
 ‘The Moi people did not take their machetes (but they left them behind).’
- b. Nee Moi **dau** yi- sik y- e- sin- keelik.
 person Moi NEG 3PL.HUM-take 3PL.HUM-POSS-knife-machete
 ‘Not the Moi people (but some other people) took their machetes.’
- c. Nee Moi yi- sik y- e- sin- keelik **dau**.
 person Moi 3PL.HUM-take 3PL.HUM-POSS-knife-machete NEG
 ‘The Moi people did not take their machetes (but they took something else).’
 (Reesink 2002:255)

That these elements do, however, bear [F]s is clear from the distributional constraints that they are subject to. Recall, for example, that Marshallese *ke* is limited to clause-final position in negative structures (32b), despite its positional freedom in affirmative structures. As discussed in section 2.3, this points to the kind of intervention effect familiar from negative contexts more generally, and, hence, to the presence of [F]s. See Gagnon and Wellwood 2008 for an analysis of the Marshallese data that accordingly appeals to the features [focus] (on Neg(ation)) and [polarity] (on *ke*).

Significantly, Holmberg (2014) independently harnesses exactly the same features in his analysis of the distribution of Finnish *-ko*, which, as noted in section 2.3, behaves in a way strikingly similar to Bulgarian and Macedonian *-li* (Schwabe’s (2004) analysis is completely compatible with Holmberg’s Finnish analysis): in all cases, the Q-particle *-ko* must be assumed to bear both a [polarity] and a [focus] specification, allowing it to combine with [focus]-bearing elements, while interacting with the clausal Pol-head (see again Laka 1990). Lingala *ndé*, in turn, evidently requires at least a [focus] specification so that it can be probed by the relevant C-head and undergo movement to the left edge. The same is true for movement-inducing focus particles more generally, and, where in-situ intervention effects are found (e.g., from negation), also for in-situ focus particles.⁵⁹

German’s modal particles seem to require [F]s that allow them to interact with what we might think of as the Speech Act domain (see, e.g., Speas and Tenny 2003, Sigurðsson 2004, 2010, Speas 2004, Hill 2007, 2013a,b, Coniglio and Zegrean 2010, Giorgi 2010, Haegeman and Hill 2013, Haegeman 2014) or the Grounding and Response domains of, among others, Heim et al. (2014), Lam (2014), Heim (2016), Wiltschko and Heim (2016), Yang and Wiltschko (2016), and Wiltschko (to appear). As noted above, modal particles prototypically—that is, in their clausal as opposed to *wh*-related use—surface clause-internally, plausibly at the left edge of vP (see Bayer and Obenauer 2011, Cardinaletti 2011,

⁵⁹ I leave open the possibility that some focus particles may lack [F]s, being only semantically specified for focus (see Zeijlstra 2008, 2014, Biberauer 2011, 2015a, 2016b, and Wiltschko 2014 for general discussion of the difference and how to detect it).

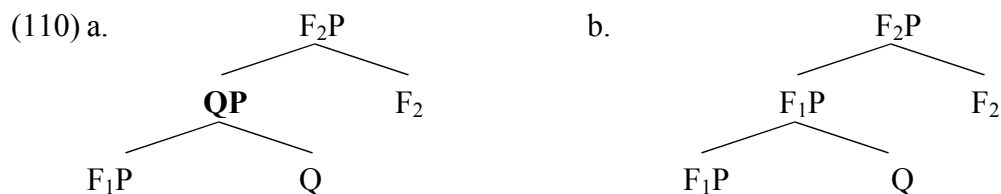
Struckmeier 2014 for discussion and references⁶⁰). However, they interact with the Speech Act-/Grounding-associated domain in ways that suggest the need to postulate [F]s. This will particularly be the case if proponents of the idea that a Grounding domain constitutes a distinct domain located above CP (i.e., a further phase) are correct: in this case, a composed Agree relation of the kind sometimes assumed in Minimalist approaches to binding (see, e.g., Reuland 2005a,b, 2011; see also, e.g., D’Alessandro and Roberts 2010 and Roberts 2010 for other applications) will be required to allow elements located at the vP-edge to value probes located in the two left-peripheral subdomains. The reasoning here is that the mismatch between the location of modal particles—outside the outermost discourse-related domain(s)—and their interpretive function—exclusively discourse-related—will result in the postulation of suitable [F]s (see Biberauer 2015a). I leave the details of this matter to future research; for present purposes, the key point is that these particles, like the Q-, negation, and focus particles discussed above, appear to be FOFC-compliant by virtue of lacking a categorial specification. In all cases, they combine with a wide range of elements, whose categorial status they do not alter; nevertheless, they do not entirely lack [F]s, as clearly shown by their interaction with other [F]-bearing elements in the system.

Before we turn to completely [F]-less particles, let us briefly consider further explanatory advantages of the type of analysis suggested above. In connection with Q-particles, Cable (2010) shows that the way in which these combine with their XP-hosts plays a role in determining their distribution. More specifically, he suggests that Q-particles that take their hosts as complements will, by virtue of the QP-Intervention Condition in (109), not be available in matrix contexts, while those combining via adjunction will, in principle, be possible in both matrix and embedded contexts.

(109) *QP-Intervention Condition*

A QP cannot intervene between a functional head F and a phrase selected by F.

The reasoning here is that a complement-taking Q-particle will project as part of a functional spine (i.e., an EP), with the result that a higher *functional* head will be unable to select its usual complement; *lexical* heads, by contrast, are unaffected by intervening QPs (see Cable 2010:57ff. for discussion, and see note 64 for an attempt at explaining this discrepancy, which Cable stipulates). By contrast, Q-particles that adjoin to their hosts will not affect the projecting functional structure, with the result that usual selection relations will not be disrupted. (110) schematizes the crucial difference (see Cable 2010:87):



Cable predicts that Q-complementation languages (the (110a)-type) will bar Q-particles from matrix contexts, as the QP-dominating F₂-head will not be able to select F₁P in the lower

⁶⁰ Some of these authors (see, e.g., Cardinaletti 2011) propose an IP-internal location for modal particles. Consideration of the arguments in favor of this location suggest the low IP-domain, which does not seem incompatible with alternative conceptualization as the upper end of the vP-domain. As we will see in the text, the latter perspective is particularly appealing, given recent discoveries about the apparent parallelisms between the peripheries of phase heads.

functional structure in this case. By contrast, (110b)-type structures will not pose this difficulty, with the result that we expect matrix Q-particles to be available. Cable's focus is on the contrast between (head-final) Tlingit and Sinhala (Q-complementation languages without matrix Q-particles) and (likewise head-final) Japanese and Korean (Q-adjunction languages with matrix and embedded Q-particles).

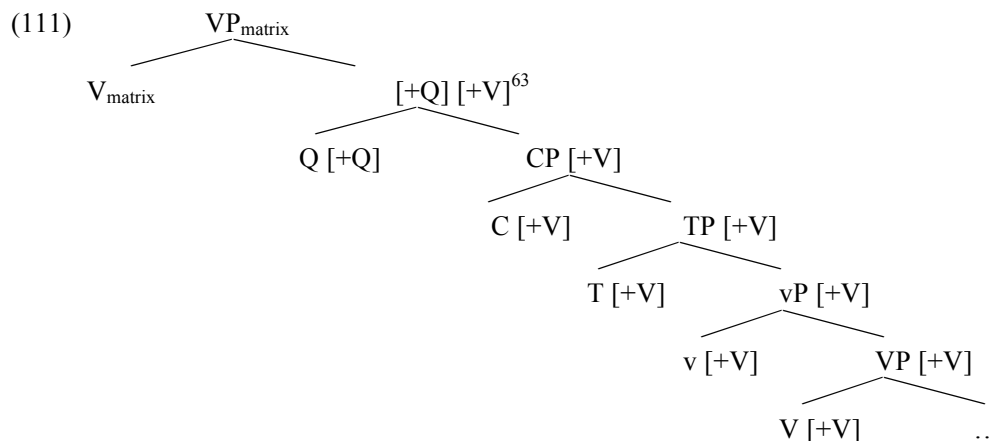
As the languages we have been concerned with systematically exhibit matrix Q-particles, these should, at first sight, all be Q-adjunction particles on Cable's analysis. This analysis would, of course, render them FOFC-compliant on essentially the grounds set out by Cardinaletti (2011). That is, the relevant particles could be weak adverbs—phrasal elements occupying a specifier or phrasal position, depending on one's theoretical assumptions. And this is certainly a possibility for some of the Q-particles in the relevant languages. Recall that many of the languages we considered have multiple Q-particles, some of which are very evidently less grammaticalized than the basic/neutral Q-particle; tag elements are a case in point (see below and section 4.2.2 for further discussion).⁶¹ For the grammaticalized particles, however, I would like to pursue a different analysis. Specifically, I would like to draw on the insights derived via the present FOFC-driven investigation of these particles to propose that these elements integrate via Q-complementation and that, in fact, they point to respects in which Cable's Q-particle typology can be further articulated.

Recall that, in terms of Cable's analysis, Q-complementation will be unproblematic wherever the Q does not have to be selected by a further *functional* head, that is, by another head within its EP. Selection by a *lexical* element aside, this condition is met where a Q-particle is the highest head merged with an EP, that is, where no further selecting functional head belonging to the same EP has to be merged. Where Q spells out Force, this condition will be met, at least in languages lacking a higher SAP (Grounding) phase—if this possibility exists—or where the SAP-elements are simply adjoined to the existing clausal structure and therefore do not need to select; if a Q-particle is able to spell out the highest SAP-head, Q-complementation should, likewise, be available. The scenario where Q spells out Force seems correct for Hindi-Urdu and Marathi: as noted in section 4.2, FOFC considerations lead to the conclusion that the Q-particle (Pol) in these languages is a Force head rather than Int. As we have also seen that this Q-particle can combine with Sub-instantiating complementizers (like *ki*), however, a question arises about its availability in embedded clauses (see (94)). On Franco's (2012) analysis, this is readily understood, as *ki*—the higher complementizer head, λ —is not part of the verbal EP, with the result that it will not be selecting in the same way as other clausal heads, which are all functional heads sharing a [+V] specification (see section 4.4.2 for a further possibility).

The CP-peripheral analysis of Q-particles also seems right for the Chinese varieties, for which Paul (2014, 2015) has independently shown that they are high C-heads (her C₂ or Force

⁶¹ To the extent that we might expect less grammaticalized elements to retain more of the structure of the elements they were originally grammaticalized from, it is reasonable to leave open the possibility that less grammaticalized particle elements may be phrasal rather than head categories. It is worth noting, though, that “more structure” need not mean “phrasal.” If Cardinaletti and Starke's (1999) strong-weak-clitic typology is interpreted, not in phrasal terms, as it typically is, but as indicative of the relative complexity of the feature structure within, respectively, strong, weak, and clitic *heads*, we can also understand their typology in head terms. The latter possibility may also be more compatible with the assumptions of bare phrase structure (Chomsky 1994), assuming the Lexicon to consist mostly—with the exception of entries like idioms—of heads, and it is certainly what would emerge on a spanning approach (see Svenonius 2011, 2016). From this perspective, too, it may be that Cardinaletti's (2011) proposals and those in this section are not fundamentally different.

C-heads).⁶² The structural height of these elements can then be understood as the reason why they, unlike the particles Cable considers, are unavailable in embedded clauses (see, e.g., Bailey 2012, Haegeman 2014, and Paul 2014 for reasoning along these lines). A further benefit of this type of analysis is that we can understand the phenomena documented by Zhang (2014): although Chinese Q-particles are typically described as being optional, suggesting the feasibility of an adjunction analysis, Zhang shows that there is always some manifestation of the presence of Q—lexical or prosodic—in neutral interrogatives. This is precisely what we would predict if Q projects as depicted in (110a). As Wiltschko (2014) argues, projecting features (her *head features*) are necessarily ascribed a value, even when there is no overt lexical evidence of their presence. By contrast, nonprojecting features (her *modifying features*) do not exhibit this behavior; they are associated with optional elements, whose presence or absence does not impinge on the grammaticality of the structure in which they occur. What I propose for grammaticalized Q-particles and other grammaticalized particles exhibiting the acategorial but [F]-sensitive properties discussed in this section is the kind of structure illustrated for Q-particles in (111) ([+Q] here signifies the formal specification associated with the Q-particle, which is assumed to project onto the clausal spine, while *CP*, *TP*, *vP*, and *VP* are all to be understood as cover terms for potentially more elaborate fields; see Biberauer and Roberts 2015a,c for discussion and references):



⁶² Higher speaker/hearer-related elements (expressing notions like surprise, annoyance, exaggeration, and warning) are possible in Chinese varieties, as Paul (2014) shows. These, however, have the appearance of nonintegrated, adjoined elements (see Biberauer and Hu 2014, Heim et al. 2014; see also the discussion of Brazilian Portuguese *não* in section 2.2).

⁶³ Note that the projection of [+Q] here does not create any complementation difficulties, as the matrix predicate is a lexical category, which is therefore exempt from Cable’s (2010) QP-Intervention Condition (109). In the specific case of Q-particles, it is also possible to imagine that a matrix predicate taking a Q-particle-containing complement will be selecting for an interrogative, so the Q-specification encountered on the matrix predicate’s complement, alongside [+V] and other projecting features, will be appropriate to the predicate’s selection requirements. Where [focus]- or [topic]-bearing particles project, one might imagine a complication, as [focus] and [topic] are not selected-for [F]s. But [focus]- and [topic]-marked constituents are most commonly subclausal, and we know that verbs also do not c-select for DPs and that non-*wh*-selecting predicates do not select for [wh]-DP/PP objects of the kind they will combine with in *wh*-interrogatives; in both cases, selection is usually thought to be for N or a nominal more generally, that is, for the categorial specification emanating from the base of the EP and represented along the EP-spine (see, e.g., Baltin 1989, Payne 1993, Williams 2003, Sportiche 2005, Bruening 2009, Fowlie 2014; and see Bruening, Dinh, and Kim 2015 for discussion). To the extent that cross-categorial (i.e., inter-EP) selection can be shown to be more “myopic” than intracategorial (or EP-internal) selection, we may have an independent motivation for the discrepancy between lexical and functional selection encoded in the QP-Intervention Condition.

Here, the [F] on the acategorial particle projects, in the manner we assume for heads merged with phrasal structures more generally (see below, the discussion in section 4.4.2, and note 87), with the result that it is genuinely contributing to the clausal spine in [F] terms and can thus be said to be taking a *complement*. Where the particle is a Q-particle as in (111), then, it is accurate to apply Cable's Q-complementation classification to the resulting structure. As we will see in section 4.4.2, [F]-less acategorial particles cannot integrate with the clausal EP in this way, as they are syntactically inert and must therefore merge as adjuncts; [F]-less acategorial Q-particles—which also includes tag markers like English *hey*, *huh* and Canadian *eh* (see Wiltschko and Heim 2016)—therefore give rise to Q-adjunction structures like those in (110b), modulo the headedness of the clausal spine. Importantly, the [+V]-property, signaling that the clausal spine is an EP of V, will also project on the feature projection mechanism assumed here, which is essentially that argued for by Neeleman and Van de Koot (2004), with the additional, though rather natural, assumption that categorial features have a special status in defining EPs.⁶⁴ This structure does not violate FOFC, however, since it is clear that [+V] is not projecting from the Q-particle, a head that does not bear this feature; the same will apply uncontroversially to the [F]-less particles to be discussed below, as the combination of a syntactically inert element and an [F]-bearing one will necessarily result in the projection of the relevant [F](s).

What this discussion has shown, then, is that superficially FOFC-violating data have the potential to lead us to a more fine-grained understanding not only of the makeup of EPs, but also of matters such as the considerations determining whether a given projection and/or [F] will be visible to a higher head. If we are to preclude the need for undue postulation of lexical homophony where focus, negation, interrogative, topic, and similar particles are concerned, while still accounting for the absence of category-changing effects when these elements combine with their diverse XP-hosts, *and* for the fact that these elements appear to enter into long-distance Agree relations, it must be the case that they are acategorial, but nevertheless [F]-bearing. In other words, the particles discussed in this section and others sharing their properties are underspecified elements lacking a categorial specification. This means that a single lexeme can, in each case, be stored in the Lexicon and that a single element can combine with XPs of different kinds without altering the categorial specification of those XPs, while the fact that it features noncategorial [F]s makes it visible for syntactic operations like Agree.

4.4.2. Acategorial Final Particles Lacking Formal Features

Assuming selection—both the functional type just discussed, and the lexical type that has dominated generative discussion of so-called *c(ategorial)-selection*—to turn on the presence of [F]s, acategorial particles completely lacking [F]s cannot be selected, nor can they intervene for selection (see (109) again). Some of the apparently FOFC-violating structures considered in section 2 seem to involve exponents of elements of this type, and they will be our focus in the immediately following discussion.

Particles in systems that, upon closer inspection, turn out to feature multiple instances of apparent homophony are cases in point. Duffield (2007, 2013a, 2014a,b, 2015) provides

⁶⁴ If [F]s are hierarchically organized, categorial features could, for example, be at the top of each [F] stack, a location that might be viewed as following from the early acquisitional stage at which these categories are identified and acquired. Alternatively, their prominence relative to other [F]s could simply follow from these features' having the distinction of being the only ones that are present from the very bottom of the EP—in other words, from another relational calculation of prominence, which would be very much in keeping with Minimalist thinking (consider also bare phrase structure (Chomsky 1994), for example).

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illuminating discussions of the way in which Vietnamese represents a system of this type, and similar observations can be made about other East Asian languages. We have already considered the Vietnamese modal *được* (discussion surrounding (15); see also Lao *daj* (16)) and *là* (discussion surrounding (53)), both of which represent elements that may surface in a range of clausal positions, also available to other elements in the system, with their meaning/function depending on their position.

Let us look at *được* in more detail. As Duffield (2015) shows, this element is not alone in being able to surface, with interpretive implications, in different clausal positions; the modals *nên* ‘should’ and *phải* ‘must’ exhibit partly overlapping behavior:

- (112) a. Họ **nên** làm việc lớn. [Vietnamese]
PRN should do job big
‘They should do great things.’
- b. Cô ấy **được** kiếm việc.
PRN DEM GET seek job
‘She is/was allowed to look for a job.’
- c. Cô ấy **phải** kiếm việc.
PRN DEM must seek job
‘She must look for a job.’
(Duffield 2015:20) Deontic (permission)
- (113) a. Họ làm **nên** việc lớn.
PRN do should job big
‘They did (made) great things.’
- b. Cô ấy kiếm **được** việc.
PRN DEM seek GET job
‘She found a job.’
- c. Cô ấy kiếm **phải** việc.
PRN DEM seek must job
‘She found a job.’
(Duffield 2015:20) Aspectual (accomplishment)

Here, we see that preverbal modals systematically receive a deontic interpretation (see also (15a)), while postverbal modals consistently receive a completive aspectual interpretation, often likened to Travis’s (2010) “inner aspect.” Unlike *được*, preverbal *nên* ‘should’ and *phải* ‘must’ may also be interpreted epistemically, meaning that (112a) and (112c) are in fact ambiguous, unlike (112b), a point to which we will return. As Duffield (2015:20) observes, one could, on a standard lexicalist approach, “assign different lexical features to the homophones of each modal element” to ensure that each element surfaces in the observed position;⁶⁵ this would, however, be “missing a crucial generalization about the complete class of modal auxiliaries, namely, that specific modal meanings are completely predictable from the structural context in which they appear. It could be argued that this is exactly the kind of

⁶⁵ The “lexical features” Duffield (2015) refers to evidently include the [F]s under discussion here; that is, ‘features of items stored in the Lexicon’ is the intended meaning, entailing all of the phonological, semantic, and formal features discussed in Chomsky 1995 et seq.

predictable information that the lexicon should be free of” (Duffield 2015:20).⁶⁶ Duffield therefore proposes that Vietnamese and, more generally, East Asian items exhibiting this type of distribution should be analyzed as underspecified elements, lacking the formal featural specifications that would tie them to specific functional positions, for example, v, Asp, T, or Fin; instead, a rich (universally given) functional structure should be assumed to which these underspecified lexical items can be adjoined, and in combination with which they can be (compositionally) interpreted (see also Lam 2016).⁶⁷ In other words, the elements participating in what appears to be system-defining homophony of the kind seen not only in Vietnamese but also in many of the East Asian and African languages discussed in earlier sections do not themselves project to form part of an EP. The FOFC-relevant consequence of this is that superficially FOFC-violating elements that can be shown to be underspecified—by virtue of their apparent multifunctionality (see also Wiltschko 2014)—and not to contribute to an EP do not in fact violate FOFC (this was also the conclusion we reached for the [F]-bearing acategorial particles in section 4.4.1, as these particles, crucially, do not have a categorial feature to project). What is not yet clear, however, is how underspecified elements come to be *final* in the relevant structures. This is the matter to which we now turn.

Recall that *được*, uniquely, surfaces clause-finally when it is interpreted epistemically, as opposed to deontically (112) or aspectually (113). As noted in section 2.1, the same pattern is observed for the ‘get/obtain’ verb in many other East Asian languages. Not observed so far, but a point that will become significant here, is that this specialized regional use of ‘get’ is also associated with an abilitative meaning.⁶⁸ The full paradigm from (15), indicating all the meanings that are in play, is repeated here:

- (114) a. Ông Quang **được** mua cái nhà. [Vietnamese]
 PRN Quang CAN buy CL house
 ‘Quang was allowed to buy a house.’ Deontic (permission)
- b. Ông Quang mua **được** cái nhà.
 PRN Quang buy CAN CL house
 ‘Quang was able to buy a house.’ Aspectual (accomplishment)
- c. Ông Quang mua cái nhà **được**.
 PRN Quang buy CL house CAN
 ‘Quang may possibly buy a house/Quang is able to buy a house.’
 Abilitative/Epistemic (alethic)
- (Duffield 2001:101–102, 2013a:128)

⁶⁶ In the context of the emergentist approach to formal features and categories proposed by Biberauer (2011 et seq.) and Biberauer and Roberts (2015a,c, to appear), going the lexicalist route would fall afoul of both of the third-factor-imposed acquisition biases, Input Generalization (“Maximize the use of available [F]s,” generalized from Roberts 2007b) and Feature Economy (“Postulate as few features as possible to account for the input,” generalized from Roberts and Roussou 2003; see also van Gelderen 2004). In other words, this type of formal characterization of the relevant elements would not be acquisitionally plausible. See also note 67.

⁶⁷ It does not in fact seem necessary to assume a rich, universally given functional structure for an underspecification approach of the kind Duffield envisages to work. See, among others, Biberauer 2011, 2015a,b, 2016b, Biberauer and Hu 2014, Cowper and Currie Hall 2014, Ramchand and Svenonius 2014, Wiltschko 2014, and Biberauer and Roberts 2015a,c for discussion of how non-UG-given (emergent) functional hierarchies may arise and supply the necessary spine for underspecified elements to attach to.

⁶⁸ See Lam 2016 for some diachronic speculations, and Enfield 2003 on contact considerations.

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That the specific modal meaning of *được* is, indeed “completely predictable from [its] structural context,” and, moreover, that its behavior and that of other Vietnamese modals mirrors what is observed in other languages is demonstrated very clearly by the following example:

- (115) Cô ấy **nên** *được* kiểm việc. [Vietnamese]
 PRN DEM should obtain find job
 ‘She should be allowed to find a job.’ Epistemic interpretation
 of *nên*

Here we have cooccurring modal elements, *nên* and *được*, with the former, crucially, taking on an epistemic reading. Whereas *nên* can be interpreted both epistemically and deontically in single-modal structures like (112a), it is necessarily interpreted epistemically in double-modal structures like (115). As (116a–c) illustrate, this is an effect that is familiar from languages like English, where “the same” modals can express both deontic and epistemic meanings:

- (116) a. She **may/should/ought to** look for a job (now that she has a work permit).
 Ambiguous deontic/epistemic
 b. She **may** *have to* look for a job (now that she has a work permit).
 Only epistemic reading
 c. She **should/ought to** *be able to* find a job (now that she has a work permit).
 Epistemic reading strongly preferred

In (116a), where *may/should/ought to* select a lexical verb (*look for*), they may be interpreted either deontically or epistemically; in (116b,c), where they precede another modal element, they must be interpreted epistemically, with the lower element receiving a deontic interpretation. This is what we expect if Vietnamese, like English, respects the functional sequence mapped out by Cinque (1999): $\text{Mod}_{\text{Epistemic}}$ is higher than $\text{Mod}_{\text{Necessity}}$. Since Vietnamese is consistently head-initial in the clause (Duffield 2001, 2007, 2013b) and epistemically used modals also surface in initial position, as shown in multiple-modal-containing (112), it is not feasible to postulate a head-final Epist(emic)P—a welcome outcome from the FOFC perspective as EpistP would presumably be part of the EP of the verb.

One possibility, given the height of this head— $\text{Mod}_{\text{Epist}}$ is very high in Cinque’s (1999) functional hierarchy (see also below)—and also taking into account Vietnamese’s status as a topic-prominent language, which systematically requires topic movement into the left periphery (see Paul and Whitman to appear for overview discussion), would be to analyze final *được* as a weak adverb, along the lines suggested by Cardinaletti (2011). In terms of this type of analysis, *được* would occupy a lower specifier than the fronted Topic, which would itself have to be fronted from within a fronted non-Topic XP, in the manner typically assumed in remnant movement analyses (see, e.g., Grewendorf 2015). The difficulty in the bare phrase structure context would be clarifying how it is possible for *được* not to head-adjoin or incorporate (in)to EpistP, as it presumably does in cases where it is spelled out head-initially, but instead to merge as the specifier of EpistP. The technicalities of this option may prove challenging, so I leave it aside here.

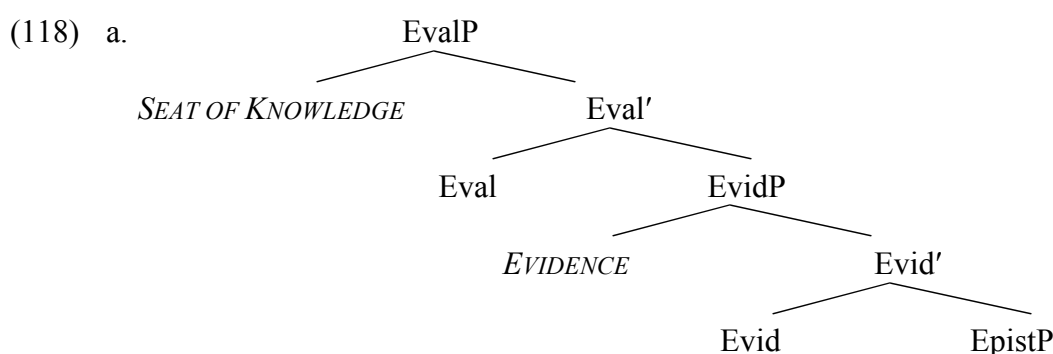
A more appealing option, which also facilitates insight into the behavior of final particles more generally, would be to capitalize on the location of EpistP. Given recent advances in our understanding of the way in which speaker-/hearer-oriented perspectives are grammaticalized (see the Speech-Act-related references given earlier), it seems plausible to

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expand the traditional clausal tripartition (see Grohmann 2003 and subsequent literature) along the lines depicted in (117) (the label *SAP* derives from Speas and Tenny 2003, Speas 2004):

(117) [_{SAP} [_{CP} [_{IP} [_{VP} ...

Here, *vP* represents the thematic domain, *IP* what Wiltschko (2014) designates the anchoring domain (often, but not exclusively, instantiated by TenseP), *CP* the content-oriented discourse domain, and *SAP* the speaker-oriented discourse domain, whose internal structure does not concern us here (see the ongoing work of Wiltschko and colleagues for detailed consideration). For Speas and Tenny (2003, 2004), EpistP is the sister of Evid(ential)P, itself the sister of Eval(uative)P, two clearly speaker-oriented projections (see (118a)); these fit into Cinque's (1999) hierarchy as indicated in (118b):



b. [_{Mood_{Sentence Type}} frankly [_{Mood_{Evaluative}} luckily [_{Mood_{Evidential}} allegedly
 [_{Mood_{Epistemic}} probably [_{T_{Past}} once [_{T_{Future}} then ...

Although $\text{Mood}_{\text{Sentence Type}}$ at first sight suggests something like Rizzi's (1997 et seq.) ForceP, which would imply a CP-internal location for the SAP-projections, contra what is depicted in (117), the diagnostic adverbs associated with this projection, like those associated with $\text{Mood}_{\text{Evaluative}}$ and $\text{Mood}_{\text{Evidential}}$, rather clearly fit with the types of speaker-oriented meaning that has now convincingly been shown to *dominate* CP (see again the work by Wiltschko and colleagues).⁶⁹ $\text{Mood}_{\text{Epistemic}}$ again clearly encodes speaker-perspective (epistemological certainty), but it is also known to be part of what is encoded in complementizers, suggesting that it may usefully be thought of as a phase edge element not dissimilar to Rizzi's (1997) FinP. For our purposes, the key point is that the projection associated with epistemicity (EpistP) is plausibly located at the edge of a phasal domain. Drawing on Wiltschko's (2014 et seq.) ideas regarding the interpretation of the lower phase head (*v*) as being connected to event-related point of view, a similar argument could be made for the abilitative functional head—plausibly, Cinque's $\text{Mod}_{\text{Volition}}$ —the second functional head with which *διῶρε* is associated.

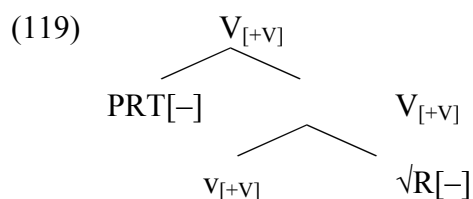
This is significant in the context of a problem that we have not considered until now: namely, how acategorical elements that are completely devoid of [F]s are merged into a

⁶⁹ That these adverbs are possible in certain *that*-clauses (e.g., *I think that, frankly, you should just care less about what other people think*) does not undermine the proposal that the SAP-related projections are located above the CP-domain: selected clauses that exhibit so-called *embedded main-clause phenomena* are known to be larger than those that do not, effectively instantiating a complete root clause, which, of course, has a full SAP (see, e.g., Heycock 2005, Aelbrecht, Haegeman, and Nye 2012, and Haegeman 2012 for recent discussion of embedded main-clause phenomena).

derivation. Assuming Merge to operate on the basis of [F]s (see, e.g., Pesetsky and Torrego 2006, 2007, Wurmbrand 2014), it might initially seem that [F]-less elements would be unmergeable. Assuming the existence of lexical arrays (LAs), however, one solution would be for such elements to be merged once all elements that can be merged on the basis of their [F]s have been merged. This predicts that elements of this type will always be spelled out at the *peripheries* of phasal domains—and therefore serve as useful acquisition cues, something that would be particularly important if the dynamic approach to phases turns out to be correct (see, e.g., Bobaljik and Wurmbrand 2013, Harwood 2013, 2015, Bošković 2014, and see the overview discussion in Citko 2014).

But how does this account for the observed Vietnamese facts? Let us first consider epistemically interpreted *đượ*. Recall that epistemic *đượ* surfaces clause-finally (15b)/(114c), while other epistemic modals surface initially (115), and that *đượ* additionally surfaces both pre- and postverbally ((15a)/(112b)/(115) and (15c)/(113b)/(114b), respectively). Since Marantz 2001, there has been some consensus that both “words” and XPs may define LAs. Thus, for example, the components of V—a root and a verbalizing *v*, say—constitute an LA, in the same way that the components of the vP-domain do (see also Marantz 2008). Building on this idea, I propose that [F]-less—and, in fact, acategorial, more generally (see below)—elements may form part of both “word-” and phrase-level LAs. Where they are part of word-level LAs, they could be the last element to be merged from at least two different types of word-defining LA: (i) an LA containing a root and a categorizer alongside the particle (this holds in the case of postverbal particles like those in (15b) and (113), delivering aspectual interpretations; see Song 2016 for an analysis of “inner aspect” compatible with this idea) or (ii) an LA featuring a functional head (e.g., Mood or Epist; see again Duffield’s (2015:18) partial cartography of Vietnamese) and the particle.

Let us first consider (i), the case of immediately postverbal (15b)/(113)/(114b)-type particles. As noted above, these are part of LAs containing a root, a verbalizer, and a particle. If the root has a minimal featural specification, as assumed by Harley (2014), among others, the root and the verbalizer will merge first, leaving the featureless particle to be merged last, that is, at the edge of the structure produced by this LA. This is illustrated in (119), where *v* is the verbalizer, and \sqrt{R} and PRT are [F]-less elements:

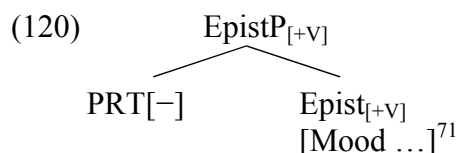


If both the root and the particle are featureless (see e.g., De Belder and Van Craenenbroeck 2014, 2015), either could in principle be first-merged with the verbalizer, creating V; in this case, we might appeal to Chomsky’s (1995 et seq.) convergence-as-gibberish proposal where the particle is incorrectly merged first, thus permitting this option in principle, but ruling it out as a derivation that will give rise to the interpretations at issue here. Alternatively, it could just be the case that it is not possible to merge a completely [F]-less particle from a word-level array, so that the complication highlighted here is avoided. This may be correct if we consider phenomena such as verb focus, which in many focus-particle-containing systems seems to require a novel mechanism such as predicate doubling (see Aboh 2004 for discussion in relation to the Gbe languages). I leave the details of this matter to future research, assuming

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featureless roots for expository purposes.⁷⁰ What is clear from (119) is that [F]-less particles, if they *are* able to combine with categorized lexical heads, will do so as adjuncts.

(ii), the case where an [F]-less particle is part of an LA alongside a functional head Epist, is straightforward: the functional head will be [F]-bearing, presumably including a [+V] specification, while the particle is [F]-less, giving an adjunction structure as in (120):



But how does linearization proceed? Here, the acategorical nature of the particles under discussion in this section and the previous one comes into play. Recall that these elements are identified as acategorical on the basis of (i) their superficially promiscuous selection behavior—they may combine with a range of XPs—and (ii) the fact that they evidently do not alter the category of the element they combine with. Taking categorial specification to mean the kind of specification that is able to define EPs and thus to involve [+/-V] specifications, particles can be said to lack this specification, whereas the elements they combine with—like the verbal categories in (119) and (120)—possess it. Capitalizing on the fact that basic VO/OV word order is acquired very early (see, e.g., Wexler 1998, Tsimpli 2014), potentially on the basis of prosodic cues that have already been registered before birth,⁷² it is plausible to assume that headedness information is an intrinsic part of “what it means to be a verb/noun.” In the context of (119) and (120), the [+V] specification associated with the heads the particle merges with thus includes the information that V is head-initial—in BHR’s terms, it lacks the head-finality-creating movement diacritic $\hat{}$. We therefore expect it to precede its complement, which, in both cases, results in the particle being spelled out finally. Where a particle combines with an overtly spelled-out verb, as in (119), it will surface postverbally, thus accounting for the postverbal position of *đurɔc* in (15c)/(113b)/(114b). Where it combines with a null head like Epist in (120), it will again be spelled out after this null head; since Epist is null, though, we have the impression of head-initiality, as seen in (15a)/(112b)/(114a).

This leaves only one further case, the one that is our central concern: clause-final and apparently FOFC-violating *đurɔc*. As noted above, this modal exhibits the same behavior as ‘get’-derived epistemic modals in the East Asian region more generally, being amenable to

⁷⁰ As the structure in (119) shows, [F]-less particles are formally identical to roots. This calls to mind Zwart’s (2009a) proposal that head-finality in a head-initial language is “lexical.” As the discussion in this chapter shows, this is partially correct: superficially FOFC-violating structures do often draw on root-like [F]-less lexical elements, and on lexical items lacking the specification associated with “full” functional categories. However, other facts are in play as well (see the discussion in sections 4.1–4.3, 4.5), and it is also anything but clear that head-finality generally is always “lexical” in Zwart’s sense (see Biberauer and Sheehan 2013, Biberauer and Roberts 2015b).

⁷¹ The bracketing here is intended to indicate that the projecting Epist functional head will bear [F]s over and above the [+V]-feature it contributes to the EP. Following Neeleman and Van de Koot (2004), among others, it may well be that *all* [F]s project along the EP. For our purposes, though, the only crucial EP-contained feature is the categorial one, which is argued to be directly implicated in FOFC (see (5)).

⁷² See much work by Jacques Mehler, Marina Nespors, Judit Gervain, and colleagues: Mehler et al. 1996, Nazzi, Bertoni, and Mehler 1998, Christophe, Mehler, and Sebastián-Gallés 2001, Christophe et al. 2003, Nespors, Peña, and Mehler 2003, Gervain et al. 2008, Toro et al. 2008, Gervain and Mehler 2011, Gervain and Werker 2013.

both an epistemic and an abilitative reading (see again (15c)/(114c)). Accepting the earlier argument that functional heads associated with epistemic and abilitative interpretations— $\text{Mood}_{\text{Epistemic}}$ and $\text{Mood}_{\text{Volitional}}$ in Cinquean terms—are merged at the edge of phasal domains, it is possible to see how the proposal regarding the linearization of head-adjoined *đurɔc* may carry across to the case under consideration here. More specifically, if the relevant functional heads are the last [F]-bearing *heads* to be merged from their LA, we expect acategorial *đurɔc* to be merged as soon as any further elements in the relevant LA specifically selected by $\text{Mood}_{\text{Epistemic}}$ or $\text{Mood}_{\text{Volitional}}$ have been merged, that is, at the edge of the respective phasal domains. Final linearization then follows if acategorial particles are linearized, as they were in the head adjunction scenarios depicted in (119) and (120), on the basis of the headedness specification of the last-merged head, here $\text{Mood}_{\text{Epistemic}}$ or $\text{Mood}_{\text{Volitional}}$, which are both, as [+V]-bearing elements, head-initial. This linearization proposal is one that allows the grammar to make maximal use of minimal means (see Biberauer 2011 et seq.): it incorporates ordering information, which is available to the child from the earliest acquisition stages, into the formal specification of lexical categories, uses this categorial specification to define EPs—[+V]/[−V] are therefore effectively cover terms—and further exploits the information available via the EP in cases where an independent linearization algorithm (e.g., the Linear Correspondence Axiom; Kayne 1994) cannot apply.⁷³ Abilitative *đurɔc* is therefore final because it is last-merged from the clause’s lower phasal domain, and epistemic *đurɔc* because it is last-merged from the clause’s higher phasal domain. As there is no head-final structure in the syntax, neither case violates FOFC. And the same is true for acategorial particles—those lacking an EP-specification—more generally.

What is predicted here, then, is that acategorial particles in head-initial systems will always be spelled out finally—either in relation to given heads (V, and null or overt functional heads) or in relation to phasal domains (vP, CP, nP, DP, etc.): the last-merged categorially specified (and thus EP-defining) head, whose categorial specification will be visible on the head or maximal projection with which the particle combines, will dictate this. These particles, then, never project (i.e., they never contribute to EPs) and therefore do not challenge FOFC. Importantly, initial particles in head-initial systems may be nonprojecting (see the discussion of the preverbal uses of *đurɔc* above), but the way in which they combine with the functional head in relation to which they are interpreted differs from the way in which final particles in head-initial systems combine with these heads: the former combine directly with the functional head in question, whereas the latter combine with its maximal projection.⁷⁴

The proposals made here, then, may also facilitate insight into Cardinaletti’s (2011) discussion of the discrepancy between initial and final uses of what superficially appear to be “the same” particles in final and initial position. Likewise, the analysis proposed here predicts these elements to be formally quite different. Initial modals are part of a complex head containing [F]s in addition to any they may themselves bear (see (120)). The same is true of postverbal particles, which form a complex head including at least V’s [+V]-feature (see

⁷³ Any specifiers merged with the last-merged functional head will, as usual, be spelled out to the left of this head, as a consequence of the Linear Correspondence Axiom (see Biberauer, Roberts, and Sheehan 2014 on the plausibly functional motivation for the precedence clause of this axiom).

⁷⁴ This proposal calls to mind Cecchetto’s (2013:71) speculation that particles, like lexical heads, differ from functional heads within an EP in not needing to “see” (probe) the formal features of any specific head, but that they instead “only look at the [X]P label with no need to access the features of the [X] head.” As with my proposal and that of Zwart (2009a)—see note 70—a (partial) parallel between particles and lexical (as opposed to functional) elements emerges. As noted in the text, this parallel is also interesting in light of Cable’s (2010) distinction between lexical and functional heads in the context of the QP-Intervention Condition (see (109) and surrounding discussion).

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(119)). XP-/clause-final particles, by contrast, do not combine directly with a functional head and are therefore [F]-deficient compared with initial and content-word-associated particles. This mirrors Cardinaletti's proposal in that it predicts that initial particles will look more like "normal" (i.e., projecting) functional heads, while final particles will look different, lacking both a direct connection to the EP (cf. Cardinaletti's spec-analysis) and [F]s (a point Cardinaletti does not specifically address). The proposals initially seem different regarding their expectations about the distributional properties of the two particle types: for Cardinaletti, initial particles are higher than their phonologically identical final forms, and there is no necessary connection to phasal domains; under the proposal made here, initial elements are predicted to surface anywhere where there is evidence of a functional head,⁷⁵ while final elements are predicted to occur only at phase edges. Both particle types, then, serve as diagnostics for formal structure, namely, the presence of functional heads (see also note 76) and the locus of phase edges. Despite the initial incompatibility between these predictions, there may be ways to unify them. If we adopt phase-sliding (Gallego 2006, 2010, Den Dikken 2007), the two approaches might, however, not be so distinct: in that case, the IP-domain with which Cardinaletti associates the weak adverbs in Italian might constitute the expanded vP-phase edge.⁷⁶ If a unification is possible—clearly a topic for future research—the distinct weak-adverb type of FOFC-compatibility argument presented in section 4.2 may be dispensable, potentially a desirable outcome, given that it requires an independent motivation for remnant movement past the specifier bearing the weak adverb.⁷⁷

The present proposal, then, makes a number of specific predictions about initial vs. final particles. We have already noted that the former combine directly with functional heads, whereas the latter combine with a maximal projection, rendering final particles in head-initial languages defective in relevant senses with respect to their head-initial counterparts (see also note 75). Furthermore, we may, in head-initial languages, observe initial particles that do *not* give evidence of acategorical behavior (e.g., apparently promiscuous selection behavior, and lack of effect on the categorial specification of the element they combine with) and that are evidently highly grammaticalized in the sense of Roberts and Roussou (2003); these plausibly constitute projecting functional heads, an option that is never available to final particles, if the definition of FOFC given in (5) is on the right track.⁷⁸ Final particles in head-final languages,

⁷⁵ In the context of the emergent system proposed in Biberauer 2015a and Biberauer and Roberts 2015a,c, where languages do not share a universally given inventory of functional heads (*pace* Cinque 1999 et seq., Chomsky 2001), the contrast between phonologically initial and final elements with systematically different interpretations would, in head-initial languages of the kind under discussion here, itself constitute a vital cue to the existence of a functional head. In other words, particle placement can serve as a diagnostic for the existence of an EP-defining functional head. See sections 4.4.2, 4.6, and 5 for further discussion of the diagnostic value of final particles in head-initial systems.

⁷⁶ This would also allow a potentially very interesting unification with analyses of German modal particles that locate them at the vP-edge (see Struckmeier 2014) and, more generally, with the idea that phase edges generally are associated with discourse- and possibly also speaker-related information (see, e.g., Poletto 2012, Biberauer 2013, Cognola 2013, Kandybowicz 2013, Biberauer and Roberts 2015c, Wiltschko to appear).

⁷⁷ A further difference between the approach being considered here and Cardinaletti's (2011) proposal, of course, rests on the phrasal status of the particle. For Cardinaletti, weak adverbs are deficient XPs, whereas the proposal here is that they are heads. In the context of a Marantz (2001)-type approach to "words," however, in terms of which heads are also phrasal at the earliest stages of structure-building, it is not clear that this discrepancy needs to be of any significance; in fact, the lack of categorial specification may contribute very directly to the absence of formal structure that Cardinaletti attributes to weak adverbs.

⁷⁸ Importantly, if the present discussion is on the right track, nonprojection need not be a definitive property of elements designated *particles* in the literature (see, e.g., Duffield 1995, Toivonen 2003,

by contrast, may be either projecting or nonprojecting. Interestingly, this mirrors the conclusion Cable (2010) reaches on the basis of his consideration of final Q-particles in head-final languages (see again the QP-Intervention Condition in (109) and surrounding discussion).

One question we have not yet addressed is how particle clusters such as those illustrated in (63)–(64), which frequently seem to involve acategorial particles of the kind considered in this section and the previous one, can be accounted for. On the account constructed so far, we expect that acategorial particles will be linearized in accordance with their hierarchical positions, with XP-final particles surfacing phase-peripherally because they were last out of the LA to which they belong. At first sight, this proposal would seem to rule out or at least impose very tight constraints on particle clustering. One phenomenon we might not expect, for example, would be the appearance of selectional relationships between multiple particles within a cluster in a given structure. But particles have been said to be subject to strict ordering relations cluster-internally (see Paul 2014, 2015, Erlewine to appear a,b; also see Pan 2016 for recent discussion and references). Consider, for example, (121):

- (121) a Tā bù chōuyān **le** **ma**? [Mandarin]
 she/he NEG smoke PERF Q
 ‘Does she/he no longer smoke?’
 (Paul 2015:264)
- a’. *Tā bù chōuyān **ma le**?
- b. Jin lái **ba** **ou**!
 enter come IMP gentle warning⁷⁹
 ‘Hurry, come in!’
 (Paul 2015:253)
- b’. *Jin lái **ou ba**!

Paul (2014, 2015) classifies all of the SFPs illustrated in (120) as C-elements. If these particles are indeed all associated with the CP-phase, the analysis we have been considering in this section clearly faces a challenge. Significantly, however, an existing tradition, which Paul picks up on and formalizes, distinguishes three subtypes of SFP: low C (C₁), Force (C₂), and Attitude (C₃) particles (see table 3). Against the background of our earlier discussion of the formalization of Speech Act meanings, this more fine-grained classification suggests how we might understand the ordering restriction exemplified in (121b/b’) without directly having to appeal to selection. In terms of the earlier discussion, it is plausible to view the Attitude and Clause Type SFPs as being associated with different phasal domains, namely, the SAP- and CP-domains depicted in (117) and repeated here:

Svenonius 2008). As Cardinaletti (2011) also suggests, particles seem to vary in their degree of defectiveness. What is crucial for the discussion here is that *final* particles are never fully projecting (i.e., categorial-feature-projecting) elements.

⁷⁹ The glossing here follows the characterization in Paul 2014:78.

Table 3
Typology of Mandarin sentence-final particles

SFP ₁ (Low)	SFP ₂ (Clause Type)	SFP ₃ (Attitude)
<i>le</i> – currently relevant state	<i>ma</i> – interrogative	<i>ou</i> – gentle warning
<i>láizhe</i> – prior knowledge	<i>ba</i> – imperative	(<i>y</i>) <i>a</i> – astonishment
<i>éryǐ</i> – only	<i>ne</i> – follow-up question	<i>ne</i> – exaggeration
...

(122) [_{SAP} [_{CP} [_{IP} [_{vP} ...

If *ou* is last out of the SAP-defining LA and *ba* is last out of the Clause Type-defining LA, we can understand the ordering restriction illustrated in (120b/b'). *Ba* must precede *ou*, as it is merged first with the clausal EP, a head-initial structure; since *ba* does not project, head-initial [+V] will continue to project, thereby accounting for the absolutely final placement of *ou* once it is merged upon completion of the CP-phase.

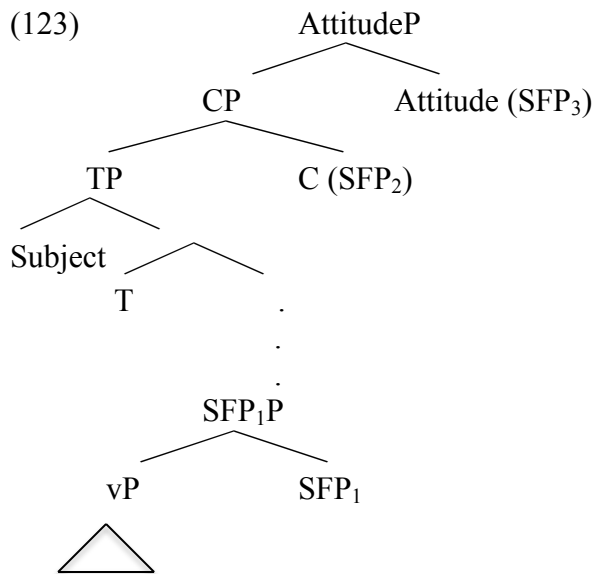
Table 3 does not, however, allow us to understand the ordering restrictions in (121a/a'): here, two SFP types that Paul (2014, 2015) analyzes as belonging to the CP-domain cooccur in a fixed order, with SFP₁ preceding SFP₂. Closer consideration of the elements Paul classifies as low-C SFPs (SFP₁s), combined with what we have learned about the speaker/hearer relevance of phase edges (recall note 77, Wiltschko's (2014) interpretation of vP as the locus of event-related point of view, etc.), points to a route via which this complication may be circumvented: if SFP₁ elements can be shown to instantiate perspective-related elements associated with the edge of the lower clausal phase (vP), the order is as expected. Significantly, Erlewine (to appear a) argues precisely that sentence-final *le*, the element at issue here,⁸⁰ and also *éryǐ* 'only' and SFP₁ elements more generally are merged at the vP-edge. He provides detailed scope-based argumentation, showing that the observed scope interactions between *le* and *éryǐ* on the one hand and elements that are uncontroversially located in the IP-domain on the other are as expected if the former are in fact merged at the edge of vP. This leads him to the following reclassification of the SFPs initially considered by Paul (2014, 2015):⁸¹

⁸⁰ In addition to sentence-final *le*, Mandarin has what is usually described as perfective verbal-suffix *le* (see, e.g., Soh and Gao 2006). The two *les* are illustrated in (ia,b):

- (i) a. Tāmen dàoda-**le** shān- dǐng. [Mandarin]
 he.PL reach- PERF mountain-top
 'He reached the top of the mountain.'
 b. Tāmen dàoda-**le** shān- dǐng **le**.
 he.PL reach- PERF mountain-top LE
 'They reached the top of the mountain (which they hadn't done before, contrary to what one might expect).'
 (Soh 2009:625)

Le, then, appears to be amenable to an analysis somewhat paralleling what was suggested for Vietnamese *đượ*: it appears to be underspecified, with its placement depending on whether it combines with V (to deliver the 'complete-consumption' (Freddy Hu, pers. comm.) inner-aspect meaning in (ia); see (119)) or with vP (to deliver the point-of-view, current-relevance interpretation added by sentence-final *le* in (ib)).

⁸¹ For Erlewine, the conclusion that SFPs are found at the edge of both the vP- and CP-phases serves as further motivation for pursuing Richards's (2016) Contiguity-based analysis of FOFC, in terms of which this condition applies within the domain of the phase, but not across entire EPs, as proposed



(adapted from Erlewine to appear a:31)

The examples we have considered here, then, do not fall afoul of the non-selection-based analysis of final particles argued for in this section: in each case, the elements of the final cluster derive from different LAs, leading us to expect that they will be linearized in accordance with the sequence in which these LAs feed into the derivation. This approach clearly makes some strong predictions, which initial investigations suggest are correct. As already noted, the current proposal predicts that particles exhibiting strict cluster-internal ordering effects will derive from different LAs. In the case we have considered, there are potentially four distinct phasal domains (V, vP, CP, and SAP), meaning that we may (in the

here (see Biberauer, Holmberg & Roberts 2008a,b for an early attempt at formulating FOFC in phase-based terms). For Richards and Erlewine, the occurrence of final elements at the edges of head-initial phases reflects the fact that these edge elements will never be sent to spell-out and linearized at the same time as the head-initial elements within the phasal domain, meaning—in highly simplified terms—that the usual selection-based Contiguity requirement does not hold. This approach therefore makes the same prediction as the present analysis regarding the significance of phase edges: the key distributional aspect of final-particle behavior that also emerges from the present account is captured. Richards’s analysis, however, has nothing to say about the striking fact that superficially FOFC-violating elements so consistently give evidence of defectivity (e.g., in being frequent in systems like those in East Asia with system-defining homophony, and in systems where the final element at first serves “the same” function as one or more head-initial elements, in being omissible in ways that meet Wiltschko’s (2014) nonprojection tests, etc.). All of these consistent properties would have to be accidental on Richards’s analysis. In fact, in specifying phase heads as the elements that may superficially violate FOFC (modulo the effects of head movement, which are assumed to trigger “phase-sliding/extension” effects of the kind proposed in Gallego 2006, 2010, Den Dikken 2007, and Gallego and Uriagereka 2007; see also Trinh 2014), one might be led to the opposite expectation regarding the nature of the elements that could potentially constitute apparent FOFC violators: phase heads are typically regarded as privileged heads, which dictate the properties of elements in their domain, with some work additionally distinguishing between weak/defective and strong/nondefective phases (see Chomsky 2000 for the original proposal, and Gallego 2012 and Citko 2014 for overview discussion). Given the kinds of behavior discussed in this chapter, we might conclude that apparently FOFC-violating particles are simply weak/defective phase heads, but this would, on most definitions of *weak phase head*, undermine Richards’s central predictions, as weak phase heads do not define their own phasal domains.

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absence of postverbal objects) expect up to four final particles in Sinitic SFP clusters, with the ordering reflecting the Merge order of the relevant domains: $V > vP > CP > SAP$. It is therefore not necessary for these particles to select each other or for them to be the spell-out of hierarchically organized heads in a tightly constrained functional sequence, as is commonly argued.

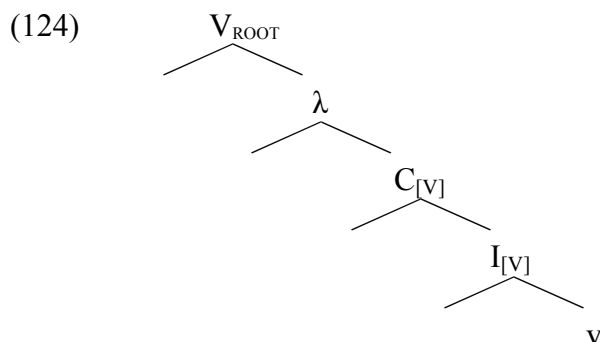
Further, the current proposal predicts that particles deriving from the same LA and competing for combination with the same functional head will not be able to cooccur, the usual complementary-distribution prediction, which is, of course, not unique to the present analysis. A prediction that is unique to this analysis is that acategorial particles deriving from the same LA will exhibit some ordering flexibility, leading to potentially quite small, but nevertheless scope-related interpretive differences. Taking into account that acategorial particles seem to vary as to whether they are completely [F]-less or bear a minimal [F]-specification, another possibility is that the latter acategorial type will be merged prior to the former type. I leave these and other matters to future research.

In the most general terms, then, the analysis of acategorial particles sketched here leads us to expect (apparently homophonous) multifunctional particles of this sort—and, by analogy, possibly others (see Biberauer 2015a, 2016a,b, to appear a on the effect of Input Generalization in this regard)—to be located in two distinct kinds of positions: (i) at word- and XP-level phase edges, and (ii) adjoined to independently available functional heads. Only the former will give rise—at PF—to head-finality in systems of the type we are concerned with here. In other words, we expect acategorial particles specifically to be phase-peripheral (as we will see in section 4.6, a peripherality prediction also arises in relation to the categorially distinct final particles discussed in section 4.3).

Strikingly, the peripherality prediction associated with these elements appears to fit well with some well- and lesser-known particle distributions. We have already seen the case of Mandarin and related Sinitic varieties, and also of Vietnamese, suggesting that final clausal particles in the East Asian region more generally may be amenable to the kind of analysis proposed here. Some of the predicate-final particles in Malagasy (see section 2.4) may also be vP-peripheral, if these turn out not to be adverbs, and the same applies to the inventory of particles in Niuean (Starks and Massam 2015). In the more general Polynesian and VOS/VSO context, Holmer's (2005) typological observation that final particles in V-initial languages appear to be confined to Niuean-type predicate-fronting—as opposed to Celtic-type verb-raising—languages may also be interesting, but I leave this to future research.

Looking beyond the verbal domain, similar peripheral possibilities are predicted and seemingly attested in nonclausal phasal domains, the demonstrative and PP-doubling structures in (79)–(81) and (82), respectively, being cases in point. Importantly, the XP-peripheral linkers discussed by Philip (2012) are not necessarily best analyzed as acategorial elements, although some of them may be. As noted in section 4.3, Zhang (1999) argues convincingly that Mandarin relative-marking *de* is best analyzed as (a predicative) *n*.⁸² Further, we have noted in connection with clausal complementation that the higher λ -element assumed by Franco (2012) (see (105), which constitutes a linker for Philip, may likewise sometimes be *n* (on why nominal linkers should nevertheless surface peripherally, see section 4.6). Franco's complementation structure (105) is repeated here for ease of reference as (124):

⁸² Recall that nominals in Mandarin are head-final; therefore, nothing special needs to be said to account for *de*'s head-finality. The fact that *de* is nominal does, however, allow us to understand why it does not create FOFC violations wherever it combines with a head-initial clause to form a relative clause (see the discussion in section 4.3). See note 83 on the likely predicative nature of *n*.



λ , then, may be nominal. Where a complementation marker is not sensitive to the nature of the complement introduced, an acategorical analysis does seem plausible, however, meaning that Franco's λ may not always be nominal, as he suggests; more-grammaticalized linkers may in fact be acategorical.⁸³ As noted in section 2.3, this may possibly also be the right analysis for Udmurt's (originally verbal and thus, in Franco's terms, C_V -instantiating) *shuysa*, which is now compatible with finite and nonfinite structures of all types. This element will therefore again not violate FOFC, even when combined with head-initial structures, as it does not bear the [+V]-feature it would initially have had (the prediction is, of course, that *shuysa* would have lost its [+V]-specification before VO ordering became possible in the relevant clausal complements, a prediction that seems to be correct). *Shto* may be either Franco's λ and thus nominal or, like *shuysa*, an acategorical element. In either case, being head-initial, it constitutes an unproblematic borrowing, the key point of interest here being its peripherality.⁸⁴

To conclude this section, we will consider in more detail the relevance of (featurally underspecified) acategorical elements to our understanding of apparently FOFC-violating structures involving a borrowed or other "imported" element (see section 2.5). To the extent that the borrowing of clause-/XP-peripheral elements involves speakers taking over an element from another language *without an [F]-specification* and merging it into an existing [F]-based structure, the type of particle-final structure illustrated in (83), repeated here as (125), emerges as a very natural one in the context of the present analysis: as [F]-less elements, these borrowings must necessarily be merged phase-peripherally.

- (125) a. Have some more food **lah**. [Singaporean Colloquial English]
(Wee 2004:117)

⁸³ Where a Sub-head seems to be acategorical, it may, of course, still be associated with a silent noun. Note, however, that Jenks (2011) proposes that nominal complementation and, more generally, linking markers should be predicative, a proposal that is, in principle, compatible with Zhang's (1999) n-analysis of *de* and also compatible with Franco's (2012) proposals on the assumption that λ is a predicate n. An n- rather than D-nominal would also open up the way to understanding why complement clauses are not generally islands for extraction (see Biberauer and Sheehan 2012a for discussion of some relevant cases).

⁸⁴ A similar case is the German-influenced Romance variety Cimbrian, which has borrowed the complementizer *az* (> German *dass*) and uses it alongside native *che* to mark complement clauses. As Grewendorf and Poletto (2009) and Bidese, Padovan, and Tomaselli (2012) show, *az* occupies a position above Force (the locus of *che*), with the result that it may effectively take matrix-style CPs as its complement. Again, then, we have borrowing of an element that is added on top of an existing structure as an extra layer, rather than being incorporated as a further member of an existing class of complementizer elements.

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- b. It doesn't matter when the first time I do philosophy **le**¹, [Hong Kong English]
I met the same problem with you **gaa**³.
'It doesn't matter when I first did philosophy; when I did, I encountered the same
problem as you did.'
(Gibbons 1987:83)

If this is indeed what Singaporean and Hong Kong speakers are doing, these structures also clearly do not involve a FOFC violation. As we have just seen, Chinese SFPs appear at least to some extent to be acategorial and hence to lack [F]s, in which case borrowing of such elements—which already exhibit the placement properties typical of [F]-less elements—is predicted to be readily possible. On the analysis proposed above, the same would be true, language-internally, for the Italian final particles (see (99)), which have effectively been “internally borrowed” from another domain, and also, arguably, for cases like Brazilian Portuguese's own case of “internal borrowing,” its clause-final harnessing of the anaphoric negator *não* illustrated in (26B''): as we saw in section 2.2, this element does not appear to be integrated with the verbal EP.

The case of Jambi-Teochew may possibly also involve underspecified complementizer elements of the kind under discussion here. Consider again (85), repeated here as (126):

- (126) a. [_{RC} (**Yang**) pha? Aling **kai** nongkyã] khao. [Jambi-Teochew]
that hit Aling that child cry
'The child that Aling hit cried.'
a'. *_{[RC} Nongkyã (**yang**) pha? Aling **kai**] khao.

b. [Nongkyã **yang** pha? Aling (**kai**)] khao.
child that hit Aling that cry
'The child that Aling hit cried.'
b'. *_{[Yang} pha? Aling (**kai**) nongkyã] khao.
(Peng 2011:1)

Recall that the Chinese complementizer *kai* is described as being the Teochew counterpart of the Mandarin relative marker *de*. If this is correct, and if Zhang's (1999, 2012) analysis of Mandarin relative-marking *de* as n is correct, as we have been assuming (see section 4.3), *kai* should also be n. In this case, it could be Franco's higher complementizer-head, λ , and we would have an explanation for why the structures in (85)/(126) do not violate FOFC (see again the discussion in section 4.3). What would not be explained, however, is how borrowed initial *yang* is additionally possible in Jambi-Teochew relative clause structures already containing *kai*. The discussion so far has suggested that borrowed elements are frequently—possibly always?—integrated into syntactic structures via phase edges, that is, as peripheral elements in the phasal context (see also Biberauer 2016a, to appear a). If *yang* were to be the spell-out of Franco's lower C_V complementizer position, Jambi-Teochew would constitute a counterexample to this hypothetical generalization. However, if *yang* behaves like other borrowed elements discussed in this section, being borrowed without [F]s and thus necessarily having to be the last element out of its LA, two possible scenarios suggest themselves.

On the first scenario, *yang* is part of the “standard” CP LA, meaning that it will be the last element merged from that array. In this case, crucially, it will already be part of the derivation when *kai*—which, recall, serves as a SWITCH-element in the sense of Panagiotidis (2015) and thus plausibly defines a (trivial) nominal LA—is merged. This derivation would deliver (85a)/(126a): the relative clause is headed by *kai*, as usual, and consequently exhibits

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the pre(head) nominal placement standardly observed with *kai* in all Teochew varieties. This structure is schematized in (127):

- (127) [_{NP[-V]} [_{CP[+V]} **Yang** pha? Aling] **kai**] nongkyã khao.
that hit Aling that child cry
where CP is [+V] under the influence of the EP extending from *pha?*, *yang* itself being acategorical

On the second scenario, *kai* does not define a trivial nominal LA, as it did in the case just discussed; instead, *kai* and *yang* are both part of an LA that also includes the clausal CP constructed in earlier derivational steps. This proposal amounts to what Johnson (2003) calls *Renumeration* and Zwart (2011a,b, 2015) calls a *layered derivation*—that is, the idea that LAs consist of both simple and complex elements, the latter the output of earlier (LA-defined) derivational steps. In this case, *kai*, being formally specified as (head-final) [-V]/[+N], is the first element to be merged with the already constructed output of the earlier CP-derivation. *Yang*, as an [F]-less element, is again last out of this nominal array. As it is [F]-less, it is linearized in accordance with the headedness specification of its [-V]/[+N] sister, meaning that it will be linearized initially, as observed. Evidently, this is sufficient to dictate the placement of the head noun, which necessarily surfaces before the relative clause in the resulting structure, (85b)/(126b). The resulting structure is schematized in (128):

- (128) Nongkyã [_{NP[-V]} **yang** [_{NP[-V]} [_{CP[+V]} pha? Aling] **kai**]] khao.
child that hit Aling that cry
where nP is [-V] under the influence of *kai*, which initially nominalized the clause that is relativized

Precisely why (128) should require postnominal placement, despite the featural specification of the relative clause, is unclear on the present proposal, a matter I leave to future research. What is hopefully clear is that the theoretical assumptions made here in order to account for the distribution of acategorical vs. categorially specified particles and for their innocuousness in the FOFC context also appear to go some way in helping us to understand the contact-induced patterns in Jambi-Teochew.

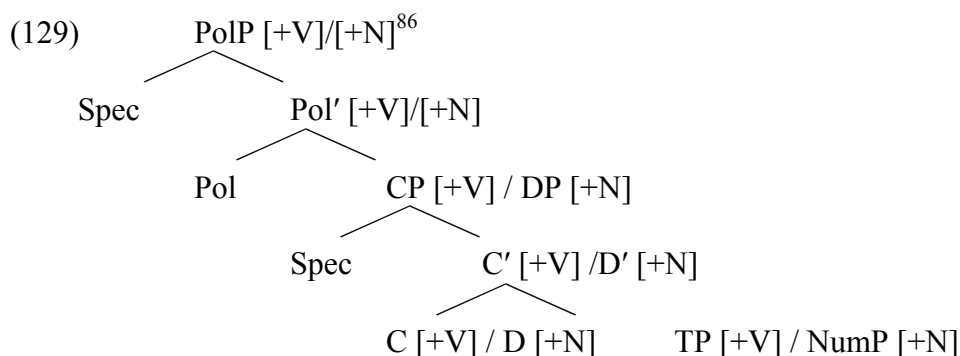
More generally, what section 4.4 as a whole has shown is that there are two respects in which acategorical final particles in head-initial systems are benign in the FOFC context. First, they seem quite uncontroversially to lack the formal categorial specification that would compromise the EP component of the condition in (5). Second, and slightly more controversially, it is also not so clear that structures containing these elements entail a *syntax-internal* structure that can straightforwardly be characterized as final-over-initial: if acategorical particles are (derivatively) linearized at PF, as suggested in this section, the final component of these structures arguably arises too late for it to impinge on FOFC.

4.5. Agreement-Realizing (“Late”) Final Particles

In this section, we consider a final scenario in which a superficially FOFC-violating structure is in fact FOFC-compatible: that in which the final particle is an agreement-realizing element inserted at PF, in other words, where it is the PF reflex of a narrow-syntax-internal Agree relation. As with the acategorical particles we considered in the previous section, this scenario therefore involves an apparently FOFC-violating sequence that is not present in the syntax and only arises at PF. It is different from the cases we just considered, however, in that the ultimately final particle is not present in the Numeration and, thus, in any LA; this contrasts with the case of acategorical final Q-, focus, and other particles, which *are* assumed to be part

of the initial Numeration. What is at stake here, then, is a distinction between elements that are merged in the syntax (“deep” elements) and those that are present as a consequence of spell-out (“surface/late” elements).⁸⁵

Let us take the Afrikaans concord element, *nie*₂, by way of illustration. As the data in section 2.2 ((25) and (27)–(28); see also note 25) clearly show, this element must be acategorical, as it is able to combine with XPs of various kinds without altering their categorial specification. In Biberauer 2008 et seq., it has been analyzed as the spell-out of a negatively valued acategorical Pol-head, located at the periphery of the XPs it combines with, as illustrated in (129):



Here, the idea is that Numerations that will give rise to *nie*₂ will contain the acategorical Pol-head, bearing an unvalued Pol-attribute, [Pol:___]. In the presence of negative elements, which are assumed to bear a negatively valued Pol-feature [Pol:Neg], this Pol-head is then valued [Neg] under Agree. At the point of spell-out, Vocabulary Insertion takes place and [Pol:Neg] is spelled out as *nie*₂. This element then ends up in clause-/phrase-final position for the same reason as the acategorical particles discussed in section 4.2.2, namely, that it is located at the outermost periphery of a phasal domain and lacks [F]s, with the result that it is linearized finally under the influence of the consistently head-initial categorial specifications of the elements it combines with.⁸⁷

⁸⁵ This “deep/surface” distinction undermines Berwick and Chomsky’s (2011) proposal that “syntactic” variation must necessarily be located at PF, in other words, that syntactic variation is “surface/late” variation.

⁸⁶ Recall that the categorial specification of the XP with which Pol merges (CP or DP) will project its categorial specification up the EP. That Pol itself is not projecting the EP-defining feature will be clear, as Pol has no categorial specification to project. In cases where the headedness of a categorially specified head is the opposite of the headedness of the XP with which it combines, it will project as usual, thus altering the headedness of the structure.

⁸⁷ By contrast, *nie*₁, the real negator in Afrikaans, which is located clause-medially (low in the vP-domain) and also initially in negated subclausal constituents, may be spelled out superficially initially by virtue of its having adjoined to Neg in a word-level derivation, along the lines outlined for Vietnamese *đừng* in section 4.2.2 (see (120) in particular). Alternatively, since Afrikaans does not feature the level of systematic (in part, class-defining) homophony that Vietnamese and East Asian languages do, it may simply be the case that the “real” negator *nie*₁ is in fact a different lexical item; the alternative perspectives are presented in Biberauer 2008, 2009 and Biberauer and Zeijlstra 2011, 2012a,b. What is clear here is that the number of items involved in apparent homophony in a system will matter in determining how acquirers analyze its formal properties (cf. Yang’s (2016) Tolerance Principle, which entails a “tipping point” determining whether acquirers will learn individual items or seek to establish a generalization, something that can clearly change over time).

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Cases like (27), repeated as (130), in which *nie*₂ is spelled out despite the absence of a formal [Neg]-specification in its c-command domain, serve as further evidence that this element is not one that is initially present in the Numeration:

- (130) a. Hy vertrek **sonder** dat ek agterkom (**nie**₂). [Afrikaans]
 he leaves without that I realize POL
 ‘He leaves without me realizing it.’
- b. Hy kon **nouliks** staan (**nie**₂).
 he could barely stand POL
 ‘He could barely stand.’

Here, *nie*₂ appears to be licensed by nonveridical rather than specifically antiveridical operators (see Giannakidou 2005, 2011 on veridicality more generally). If one accepts the principle that spell-out always targets lexical items bearing at least the features present on a syntactic head and possibly a minimally extended set—the Superset Principle of Nanosyntax (Caha 2009), given in (131)—we can understand how a negatively specified Pol-head may be spelled out as the closest match (see Boef 2012) for a Pol-head of the kind that we might associate with structures containing nonnegative, nonveridical elements:

(131) *The Superset Principle*

Insert a tree in the Lexicon for a (sub)tree in the syntax if the tree in the Lexicon matches all the features of the (sub)tree in the syntax. Do not insert a tree from the Lexicon if it does not contain all the features in the syntax. When lexical items compete for insertion, insert the tree with the least unused features. (Caha 2009:55)

*Nie*₂ aside, Afrikaans has no other dedicated lexical items spelling out nonveridical Pol-heads, meaning that *nie*₂ will be the closest match for nonveridically specified Pol.⁸⁸

Brazilian Portuguese, likewise introduced in section 2.2, also seems to give a particularly clear indication of the need to distinguish an agreement spell-out element—in this case, *não*₂—and an element that is already present in the narrow syntax—here, *não*₃. Consider the data in (132)–(133) ((133b,c) pick up on part of example (26), discussed in section 2.2):

- (132) a. Ele **não**₁ comprou a casa (**não**₂). [Brazilian Portuguese]
 he not bought the house POL
 ‘He has not/NOT bought the house.’

⁸⁸ As shown in Biberauer 2016a, the interrogative complementizer *of* ‘if’ in most varieties of Modern Afrikaans is a C- and not a Pol-head. There are speakers—seemingly only strongly monolingual ones, whose numbers are dwindling—who permit embedded V2 structures of the kind illustrated in (i):

- (i) [_{PolP} [_{CP} Ek weet *nie*₁ [_{PolP} **of** [_{CP} **sal** daar werk vir my wees]]] [Afrikaans]
 I know not if shall there work for me be
*nie*₂.
 POL
 ‘I don’t know if there will be work for me.’
 [Contrast English: **I don’t know if will there be work for me.*]
 (Feinauer 1989:30)

Even in varieties where *of* has been reanalyzed as Pol, it is presumably still specified for subordination, however, meaning that *of* does not constitute a suitable spell-out for nonveridical main-clause [Pol].

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- b. Ele comprou a casa **nã_o₃**.
 he bought the house POL
 ‘He has not bought the house, contrary to what you were just saying.’
 (Biberauer and Cyrino 2009:2)
- (133) a. Minha tia disse que ele ***(nã_o₁)** comprou uma casa [Brazilian Portuguese]
 my aunt said that he not bought a house
(nã_o₂).
 POL
 ‘My aunt said that he didn’t buy a house.’
- b. Ele **nã_o** tem *um tostão furado* **(nã_o₂!)**.
 he not has a coin holed POL
 ‘He doesn’t have a red cent.’ (i.e., he is poor)
- c. Ele tem *um tostão furado* **nã_o₃!** Um intero.
 he has a coin holed POL a whole
 ‘*He is poor.’ vs. ‘He doesn’t have a red cent; he has a blue one.’ (literal meaning)
 (Biberauer and Cyrino 2009:16)

If *nã_o* is an underspecified element of the kind discussed in section 4.4, we can understand the three *nã_os* illustrated above as follows:

1. *Nã_o₁* is the result of underspecified *nã_o* being part of a word-level LA along with the (clause-internal) Neg-head; combined with this head, it is interpreted as sentential-negation-marking ‘not’.
2. *Nã_o₃* is the result of underspecified *nã_o* being part of the highest clause-level LA—that is, the highest phase, designated *SAP* in (122). Merged at the edge of this LA, it is interpreted as an anaphoric negator, which therefore cannot license NPIs—contrast **I have a red cent, no* with *I don’t have a red cent*; hence (133c).⁸⁹
3. *Nã_o₂* differs from *nã_o₁* and *nã_o₃* in that it is the result of [Pol:___] (i.e., unvalued Pol) being part of a clause-level LA (e.g., CP), where it is valued [Neg] on the basis of a [Neg]-bearing element in the lower clausal domain, for example, *nã_o+Neg (=nã_o₁)*. This [Pol:Neg] is then spelled out as *nã_o₂* at PF.

Nã_o₂, then, like Afrikaans *nie₂*, is the reflex of an Agree relation, whereas *nã_o₁* and *nã_o₃* are the outcome of LAs containing underspecified *nã_o* from the outset. In other words, *nã_o₁* is a “deep” negation element; *nã_o₂* is a “surface/late” negation element; and *nã_o₃* is a “deep” negation element.

Further, this agreement-spell-out approach also offers an attractive way of making sense of the obvious connection between Ma’di’s affirmative, negative, and Q-particles (recall the discussion in sections 2.2–2.3): the striking parallels between these elements and also their harmlessness in the FOFC context immediately become comprehensible if we view them as alternative spell-outs of an initially unvalued Pol-head, all of which are subsequently linearized at PF. In some cases, the same may be true for Q-particles that are formally identical to negation elements. More generally, the approach also offers a tempting possibility

⁸⁹ The cases where the anaphoric negator surfaces clause-initially rather than clause-finally—a less emphatic structure—may involve *nã_o* merging directly with a CP-internal head like Topic or Focus; that is, *nã_o* in this case may initially be part of a word-level LA, after which it is renumerated in Johnson’s (2003) sense, becoming part of the CP LA.

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for understanding what one might think of as “generalized Jespersen” doubling structures involving a structurally high element—that is, those featuring a “real” element along with an agreeing/concording one, where the latter dominates the former and therefore potentially creates a challenge to FOFC. Simpson and Wu (2002), for example, discuss (i) definiteness agreement between Mandarin *de* and the demonstrative, a discussion that could potentially also carry over to the Malagasy “framing demonstrative” construction (see (81)); (ii) a discontinuous aspect construction involving preverbal progressive-marking *zai* and an additional (superficially FOFC-violating) VP-final aspect-marker, *ne*; and (iii) modal-final structures of the kind we have considered a different analysis for in the Vietnamese context (see (15c) and the discussion of clause-final *được* in section 4.2.2).

4.6. Interim Conclusions and Some Implications

This section has shown that the five major ways in which superficially FOFC-violating but nevertheless FOFC-compliant structures may be generated, listed in (86) and repeated here, all seem to be attested:

(134) *FOFC-compliant H-C...Part configurations*

- a. The particle heads a projection to which a *noncomplement* head-initial XP has A- or \bar{A} -moved.
- b. The projection hosting the particle is *structurally lower* than the projection of the head-initial structure.
- c. The particle is *categorially distinct* from the head-initial structure, bearing a *distinct categorial feature*.
- d. The particle is *categorially distinct* from the head-initial structure in *lacking a categorial specification*. Here there are two possibilities:
 - i. It does bear one or more other formal features ([F]s), alongside semantic features ([S]s) (Chomsky 1995).
 - ii. It lacks [F]s altogether and is syntactically inert; it may or may not bear [S]s.
- e. The particle is an *agreement-realizing* element not present in the Numeration as an element bearing an independent headedness specification; that is, it is the PF reflex of a narrow-syntax-internal Agree relation.

In addition, it may be possible that some apparently FOFC-violating structures involve weak adverbs, merged in lower specifiers (Cardinaletti 2011), and that some, like the West Germanic circumpositions discussed in (95)–(98), involve nonovert structure that means that the overtly realized structure is in fact discontinuous. The fact that there is such a range of mechanisms via which elements that do not form part of a given head-initial EP can surface finally in relation to it allows us to understand why H-C...Part structures should be as frequent as they are. Crucially, it is precisely maintaining (5) as an exceptionless “deep” condition on the kinds of structure that may be created in the narrow syntax that allows us to formulate the kinds of circumstances under which we would expect FOFC-respecting surface violations. Far from suggesting that this word order condition is tendential, the existence of so many particle-containing apparent counterexamples is precisely what one would expect, given the nature of the condition.

Further, the particle patterns discussed in this chapter do not receive a natural explanation under the alternative accounts of FOFC that have been proposed in the literature. Neither processing-/parsing- nor diachronically oriented accounts offer any insight into the attestation discrepancy between final-over-initial structures where the final and initial elements are part of the same EP (seemingly unattested) and final-over-initial structures where the final element does not contribute to the EP (copiously attested, as shown in this

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chapter) (see Hawkins 2013, Philip 2013, and Mobbs 2015 for parsing accounts, and Whitman 2013 for a diachronically oriented account). On “late” PF-oriented accounts like Sheehan’s (2013a,b), final-over-initial structures are impossible to linearize owing to the complications that complex specifiers introduce at the linearization stage (see also Uriagereka 1999); hence, these structures may only be generated in the syntax if (i) this structure is “repaired” via extraposition at PF (this reduces the specifier’s complexity) or (ii) the initial structure has already been spelled out (atomized), with the result that the linearization challenge posed by complex specifiers is eliminated. In the present context, extraposition is not a pattern we systematically see with final-particle-containing structures: it is clearly unproblematic for particles that combine with head-initial structures to surface finally. This leaves the atomization possibility, which is also what Sheehan (2013b) speculatively proposes to deal with this case. As she notes, however, this option predicts that final-particle-containing head-initial structures will be islands from which it is not possible to extract. This prediction is somewhat hard to test, but there are some indications that it is too strong, as there are final-particle-containing structures from which extraction is entirely unproblematic.⁹⁰ Afrikaans negative clauses are a case in point, as (simplified) (135) shows (overstrike indicates the haplology that targets the second of two adjacent *nies* in Afrikaans; see Biberauer 2008):

- (135) [_{PolP} [_{CP} Wie het sy nie gedink [_{PolP} [_{CP} t_{wie} gaan nie daar [Afrikaans]
 who has she NEG thought go NEG there
 wees] nie₂]] ~~nie₂~~]?
 be POL POL
 ‘Who didn’t she think would not be coming?’

The problems with Richards’s (2016) part syntax–part PF approach, which assumes that FOFC only applies internally to phasal spell-out domains (defined in terms of the Phase Impenetrability Condition first proposed in Chomsky 2000), were already highlighted in note 82. Essentially, this approach gets the positioning of final particles in head-initial systems right (see also Erlewine to appear a,b), but appears to make the wrong predictions about the (non)defectivity of the elements that may surface finally: (strong) phase heads would not be expected to be formally defective in the ways that final particles in head-initial systems seem to be. Taking everything in this paragraph into account, then, the initially rather unlikely-seeming conclusion would seem justified that attested H-C...Part structures, far from undermining the generalization in BHR 2014, constitute a strong argument precisely *for* the “deep” interpretation of FOFC expressed in (5).

More specifically, taking the interpretation of FOFC in (5) as the point of departure appears to account successfully for the chief characteristics of the data presented in section 2, namely:

1. Final particles are typically defective in some sense, lacking inflection otherwise seen in the system and so on. This follows if they are the spell-out of formally defective heads/XPs that do not integrate with the EP in the manner of nondefective, EP-projecting elements (see also point 3 and section 5 on the correlation between lack of inflection and nonprojection/lack of [F]s).
2. Final particles often occur in systems with head-initial manifestations of “the same” grammatical category, the head-initial element being the obligatory one,

⁹⁰ This is, of course, also true for the head-initial nominals that surface preverbally in West Germanic. These entail a complex specifier on the Kaynean analysis Sheehan (2013a,b) assumes, leading us to expect that it should not be possible to extract from preverbal nominals, an option that is, however, available.

the inflecting one, the one transferred in code-switching, and so on. To children seeking to analyze their input in a maximally economical way, drawing on Input Generalization and Feature Economy (see note 67), these properties signal the fact that the head-initial element, which is harmonic with the rest of the head-initial system, is the EP-projecting head, and that the final particle is to be distinguished from it in formal terms.

3. Final particles are often homophonous with elements surfacing in different positions and possibly even serving at first sight very different functions. This follows if the units of language (see Wiltschko 2014) spelled out as final particles are underspecified elements that do not themselves contribute to the projection of an EP, instead merging with a projecting head that also serves to modulate the interpretation of the underspecified particle in predictable ways, that is, in accordance with the hierarchical position in the structure where it is merged. Importantly, the fact that languages with system-defining homophony are, to the best of my knowledge, highly analytical systems like the relevant East Asian languages also follows from the proposals in section 4.4. This is very clear for the syntactically inert particles discussed in section 4.4.2: an element without [F]s cannot enter an Agree relation with other elements in a given syntactic structure. For the acategorial yet [F]-bearing particles in section 4.4.1, we again do not expect to see inflection, as these elements may in fact be single-featured,⁹¹ with the result that they can at most exhibit agreement reflecting the feature they encode, [focus], [topic], or [negative] agreement, for example.
4. Final particles are, in cases where we are genuinely dealing with a final-over-initial structure (i.e., not those discussed in sections 4.1–4.2), X(P)-peripheral elements with an apparent tendency to occur at phase edges. In the case of the categorially specified, categorially distinct particles discussed in section 4.3, they are necessarily peripheral because recategorizers must merge at the top edge of the XP they are recategorizing. Were the resulting recategorized XP to switch category again, the new recategorizer would, likewise, have to merge at the edge of the existing XP. As we will see in section 5, there is in fact a constraint on recategorization that exhibits the same general character as FOFC and prohibits multiple switches within a given structure. The rationale underlying the peripherality of [F]-less acategorial particles has been set out in section 4.4.2: these elements must be last out of their LA by virtue of their unselectability and inability to select. [F]-bearing acategorial particles, on the other hand, could potentially be merged in a more internal position, given that they have an [F] to project, but the particles we have identified do all seem to belong to naturally peripheral categories (Focus, Topic, Q, Negation, etc.), and it may be that their peripherality follows from a selection logic in terms of which categorially specified elements must select other categorially specified elements, leaving the acategorial [F]-bearing elements to last. This would certainly follow in terms of the Phrasal Coherence constraint that seems to apply in human language, which we will briefly consider in section 5. In general, though, the present investigation of final particles does suggest that these elements are prototypically phase-peripheral. As the relevant particles also include a great

⁹¹ In the present system, these particles correspond to spell-outs of the single-featured heads assumed in Nanosyntax (see Starke 2009), spanning exactly one head (see Svenonius 2011, 2016). They realize heads bearing maximally scattered features in the sense of Giorgi and Pianesi (1997).

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many spoken-language elements, this may be a very useful acquisition cue, signaling phase boundaries to acquirers.

5. VO languages with final nominal particles will have final nominals more generally. This seems correct for all the languages discussed in section 4.3.
6. Acategorial particles merged with head-initial phrases will surface finally, while those merged with head-final phrases will surface initially. The German modal particles illustrated in (74)–(75) exemplify the correctness of this prediction.
7. Acategorial particles merged from word-level arrays—whether combining with roots (119) or with already-categorized functional heads (120)—will surface to the right of overtly realized heads in head-initial systems. Verbal *le*, which surfaces between V and the object, looks like a case in point; see the Yixing variant in (14a). In head-final systems, by contrast, these elements will surface to the left.
8. Finally, adopting an EP-based perspective on FOFC allows us to describe the difference between A- and \bar{A} -moved superficially final-over-initial strings, which are evidently possible, and the basic linearization type, which is clearly not (see section 4.1). FOFC only applies to structures in which the specifier is occupied by the categorially identical head-initial XP that constitutes the complement of its head, that is, where the EP-sister of a head X has “rolled up” into its specifier. Where spec-to-spec movement has generated a structure in which a specifier is occupied by a head-initial XP of the same category as the head that has projected the specifier—an apparent final-over-initial structure—no FOFC violation results. Consecutively merged heads belonging to the same EP must therefore either exhibit the same headedness (initial or final), or, if the lower head is final, requiring comp-to-spec movement, the higher head could lack this movement; but comp-to-spec movement can never start EP-medially. A form of contiguity effect, affecting consecutive EP-projecting heads, therefore seems to be in play.⁹²

Building on this last point, I would like to conclude this section by sketching the extent to which the particle-derived insights into FOFC considered in this chapter might explain why such structures are underivable.

Consider, first, VO languages that lack V-movement, that is, languages where V remains in situ in V.⁹³ Maintaining our assumptions about phasal spell-out—namely, that the complement of a phase head is sent to spell-out upon exhaustion of the LA associated with that phase head, in accordance with the Phase Impenetrability Condition (Chomsky 2000; see Richards 2004 for discussion)—we then expect V and O to be sent to spell-out upon completion of the vP phase. After this point, the VO constituent will only be available for combined movement and VP-level agreement. V and O may not be independently probed; the resulting structure is an island.⁹⁴ To generate a V-O-Aux or V-O-C structure in a language of

⁹² It should be clear from the formulation here, which references the EP rather than phasal domains, that the kind of contiguity I envisage should not be equated with that formulated in Richards 2016. See note 81.

⁹³ At first sight, this might seem contrary to Chomsky 2001, which is often interpreted as suggesting that V-to-v movement is universal to ensure categorization of V (i.e., V is in fact an acategorial root). Considerable subsequent research has clearly shown, however, that verbalizing v should be distinguished from external-argument-introducing v (see, e.g., De Belder and Van Craenenbroeck 2014, 2015, Harley 2014, Myler 2014).

⁹⁴ The latter consideration suggests that this type of derivation will be impossible in ergative languages, a number of which are VOS (see, e.g., Aldridge 2004, Deal 2016).

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this type, one would need to front the VP to the phase edge. Given the apparently emerging consensus that phase edges are discourse-sensitive domains (see, e.g., the references in note 77), we might expect that this type of (atomized) VO fronting would be discourse-marked rather than neutral. In other words, this would be the type of structure that we would usually characterize as \bar{A} -moved—that is, a type of structure that is not subject to FOFC, as argued in section 4.1 (see in particular the discussion around (90), which illustrates the difference between a permitted \bar{A} -structure and a banned neutral V-O-Aux structure in German). On this view, then, generating discourse-neutral V-O-Aux is independently ruled out, which therefore also accounts for the Finnish patterns initially highlighted by Holmberg (2000a).⁹⁶

On an alternative perspective, where invariant obligatory movements of the same element are necessarily discourse-neutral (see, e.g., Biberauer 2016c), consistent movement of a VO constituent to a phase edge could produce a discourse-neutral VOS structure. Crucially, though, clausal heads in the higher phase (T, C, etc.) would not be able to interact with V (or O) via head-head (or head-DP) probing; both elements would only be accessible via the featural specification associated with the label of the dominating VP. This is how particle heads are assumed to interact with lower heads in the EP with which they combine (see again the discussion in section 4.2.2 and note 75; see also Biberauer and Roberts 2010, where, following Massam 2001 et seq., it is proposed that this type of derivation is found in VOS languages of the Niuean type). Assuming the existence of languages of this type, then, they would not be predicted to violate FOFC: they would necessarily be particle-containing systems of the type discussed in this chapter.⁹⁵

Next let us consider VO systems in which V raises. In these systems, V will never, in neutral structures, be sent to spell-out at the same time as O: O will be sent to spell-out upon completion of the vP-phase, while the height of V-movement will determine when it is sent to spell-out. For low-movement systems in which V moves only to v, V-O-Aux would therefore not be possible in systems where auxiliaries are v's (a plausible analysis of auxiliaries in argument-sensitive auxiliary-selection systems, and also for aspectual auxiliaries, among many others). By contrast, a structure that would be possible is V-Aux-O, which is indeed attested in many languages, including the well-studied Germanic languages (see BHR 2014 for discussion and references). For higher auxiliaries—for example, those in T—V-to-T movement would again deliver V-Aux-O order. But if V remains in v and vP raises to Spec,TP, V-O-Aux could result. Crucially, this would be V-O-Aux in which T is able to probe V-v in the usual manner, with vP-raising to Spec,TP—that is, the head-initial counterpart of the derivation that Biberauer and Roberts (2005 et seq.) propose for head-final Germanic. This structure could, then, raise to Spec,CP, giving a V-O-C structure. Just combining our particle-derived insights with a phasal spell-out system, then, will accurately account for the nonoccurrence of a great many potentially FOFC-violating structures; but it cannot account for the absence of these structures in short V-raising languages, as demonstrated here. Given the number of accurate predictions our assumptions have delivered, it seems worth considering whether this type of structure may be possible after all, but, in the manner of the H-C...Part structures that have been the focus of this chapter, nevertheless still not violate FOFC. I will conclude this section by considering a possibility that is also very much in

Strikingly, a V-O-Aux structure derived via VP-fronting to the phase edge would also not involve comp-to-spec-type roll-up if an external argument is merged in the lower specifier of vP: roll-up of the kind that produces a FOFC-violating structure would require the complement of v—the VO VP—to move into v's innermost (derivationally first) specifier; movement from v's complement to a more peripheral specifier cannot be roll-up.

⁹⁵ Worth noting here is that these V-O-Aux/V-O-C systems would meet Sheehan's (2013a) islandhood requirement on the head-initial constituent in particle-containing structures.

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keeping with the striking patterns to be discussed in section 5 and that makes an empirical prediction that appears to be borne out.

I start with this chapter's central insight that particles that can be shown to genuinely dominate initial XPs can also be shown not to combine with these XPs in the way that EP-defining heads do (see sections 4.3–4.5): they do not project onto the EP that they would need to be part of to violate FOFC. Why would this be so? The answer I will propose here takes acquisition as its point of departure. From an acquisitional perspective, the “specialness” of outlier-final elements in the head-initial systems to which they belong would be expected to be very striking. As noted in section 4.4.2, word order is a property children are sensitive to from very early on, plausibly because the basic headedness properties of their language have effectively been fixed from birth, making subsequent zeroing in on the ordering properties associated with different syntactic elements a more tractable task (see again the research by Mehler, Gervain, Nespor, and colleagues, note 73). In section 4.2.2, I proposed that headedness information—arguably the earliest formal property acquired by children and thus the first formal means at their disposal to begin construction of the syntactic system (see also Tsimpli 2013, 2014)—is an intrinsic part of “what it means to be a verb/noun.”⁹⁶

Verb vs. noun, in turn, is the central notion underlying the postulation of an “extended projection.” As the term suggests, these are necessarily extensions of a particular projecting element, the element in question being assumed to be at the bottom of the EP, that is, the noun or the verb and, by extension, other genuinely lexical (content) categories that can be identified for the system in question (these may or may not include P and A, a matter I leave aside here; but see, e.g., Baker 2003a and S. Chung 2012 for discussion). Since we have been assuming that the formally represented features of lexical items project along the EP, head-finality (V^{\wedge}) will project along the EP of a clausal spine extending from a head-final lexical verb, while head-initiality (V) will do likewise in the case of a system in which lexical verbs are initial.⁹⁷ Since being part of the EP of a lexical category means sharing its categorial

⁹⁶ In the context of a more general framework where Maximize Minimal Means is a third-factor acquisition bias, it is natural to expect every bit of regular and thus predictable information in the system to be harnessed in this way. See Biberauer 2015a, 2016a,b for detailed discussion of the various kinds of departures from arbitrary and thus unpredictable patterning—classic Saussurean arbitrariness—that acquirers may utilize as cues to the formal structuring of the system they are acquiring.

⁹⁷ As noted by BHR (2014) and Biberauer, Roberts, and Sheehan (2014) (see also section 4.4.2), there seem to be good reasons for assuming that head-finality is formally marked, while head-initiality is not: the FOFC skewing observed in the empirical domain gives one indication of this, and identifying the head-finality-marking property with the diacritic that triggers the leftward movement that appears to be universal in human languages (see, e.g., Kayne 1994, 2013, Abels and Neeleman 2009, 2012, Haider 2012) allows us to unify word order and movement and avoid the introduction of a linearization-specific diacritic (see Biberauer et al. 2010a and Biberauer, Roberts, and Sheehan 2014 for discussion). The unification entailed here is, of course, desirable from the perspective of a Minimalist program, attempting to establish how minimal the formal means required to regulate syntactic structure are (see note 96). Head-initiality/-finality could, in principle, have been marked by individual diacritics signaling initiality and finality (see Biberauer and Sheehan 2012a, Sheehan 2013a, and chapters 4 and 10 for discussion). This is, however, clearly less parsimonious than harnessing a diacritic that already seems to be independently required and is therefore available to be more maximally utilized. Naturally, it would be even more parsimonious to dispense with the diacritic altogether, something that is attempted in Biberauer and Roberts 2015b.

A point worth noting here is that the unification under discussion assumes that \wedge is associated with heads to signal leftward phrasal movement. It could, of course, also be

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property (which, as just argued, includes the relevant headedness information), we can define a natural class of verbal (and, likewise, nominal) elements: those bearing [V[^]] or [V] in the verbal case, and [N[^]] and [N] in the nominal case.

Accepting this to be the case, a final T-element clearly cannot be part of the EP of a VO language (i.e., [V]).⁹⁸ This conclusion seems correct for the particle T-elements and more generally the auxiliary elements considered in this chapter: these elements provided varying types of evidence indicating that they are not normally projecting elements, notably lacking agreement and tense, mood, aspect inflection—basically, any indication of being specifically finite elements—and sometimes

associated with a head to signal that it will attract the (EP-internal) head that it selects to head-adjoin to it—essentially the proposal made in Haider 2012 and all the work leading up to this volume (see also chapter 4 for discussion). In view of the very striking harmonic contiguity patterns to be discussed in section 5, however, I reject this possibility: if head-initiality were to be the marked option, the lexical elements at the bottom of EPs would always be unmarked, regardless of the headedness of the system, meaning that it would not be possible to state a “harmony” pattern that appears to start from (i.e., include) the lexical head in the way that appears to be necessary. For proponents of the view that head movement is postsyntactic, this option would also not exist for independent reasons, and, likewise, for proponents of the view that head movement does not require a diacritic (e.g., Roberts 2010a). The issue does not arise in the context of the proposals in Biberauer and Roberts 2015b.

⁹⁸ Neither, of course, can an initial T-element or any other clausal head in the context of an OV language. This might at first sight seem to be problematic, as the West Germanic languages, for example, all feature at least initial C (since auxiliaries surface finally, it is reasonable to assume that T at least bears [^]). Closer consideration, however, reveals that viewing West Germanic C as a head that is not *intrinsically* verbal—and thus [V[^]]—is potentially useful. Consider, for example, the fact that West Germanic C—like C in V2 languages more generally—has long been acknowledged to be a “hybrid” category, associated both with verbal/clausal and with nominal properties (see Vikner 1995 for overview discussion of this idea). If C itself is underspecified with respect to verbal/nominal specification—that is, in the context of the present proposal, if it is *not* itself specified [V[^]]—we can understand the nature of this hybridity similarly to the way we made sense of the behavior of acategorical elements in section 4.4. In other words, when the finite verb raises to C in West Germanic, its [V[^]] feature will project to CP, making the projection as a whole [V[^]]—and thus incapable of serving nominal functions like subjecthood, a well-known fact about V2 clauses. Likewise, when a subordinating complementizer merges with C, its nominal specification will project to CP, accounting for the fact that *dass/dat*-clauses in West Germanic are well-formed subjects. As C itself is null, just as the Epist head in Vietnamese (120) is null, the finite verb’s [V[^]] requirement will be satisfied by spell-out to the right of the null C; there is no prediction that the finite verb will be spelled out in final position.

Looking beyond Germanic, work considering the fine-grained structure of C also suggests that unambiguous classification as verbal or nominal is too simplistic (see, e.g., Franco 2012, which has informed some of the discussion here). To the extent that C is (the cover term for) a category that (at least in part) interacts with clausal heads that are verbal, we expect it to be a head that may obtain verbal properties. Note also that what is being said here about West Germanic C does not rule out the possibility of languages in which C is intrinsically verbal ([V]-marked): languages in which C exhibits the same headedness as the lexical verb could all in principle be intrinsically [V]-marked, and it is striking that many final heads in head-final languages derive from verbs (e.g., *say* and its counterparts; Udmurt *shuysa*, discussed in section 2.3, is a case in point). Similarly, many initial Cs in head-final languages derive from operators (see Bayer 1999, 2001). Evidently, then, the question of the formal makeup of Cs is a complex one, deserving (continued) closer study—among other reasons, so that the precise nature of the ban on final complementizers in VO languages and the obligatoriness of CP-extraposition in OV languages can be properly understood.

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contrasting positionally with elements that are evidently the primary auxiliary elements in the relevant language (by virtue, for example, of being inflected in contrast to the uninflected final element, or being obligatory in contrast to the optional final particle, or being used exclusively in code-switching, and so on).

For the kind of derivable V-O-Aux system under discussion here—a V-to-v raising system with a final auxiliary—we might, then, predict similar properties; the only difference between this type and the type that has been the focus of most of our discussion would be the V-to-v raising component. Additionally, though, a language that gives its acquirers clear evidence of V-to-v raising might also be expected to be inflectionally richer than one in which v-elements are (final) particles. This brings to mind nonanalytic final-particle-containing VO languages of the kind illustrated in section 1 on the basis of Cappadocian Greek, for example. Consider again the example presented in (1b):

- (136) Ego psis dio avga iton. [Cappadocian Greek]
1SG bake.1SG.PERF two eggs PAST (= 3SG.IMPERF.BE)
'I had baked two eggs.'
(Español-Echevarría 1994:1)

As noted at the outset, the final auxiliary in this variety, and in all the other contact varieties in the region, systematically fails to inflect: it is always the same third-person singular imperfect past form that surfaces in this position. At the same time, the lexical verb bears all the tense and agreement morphology that we would expect to find on a finite verb in this language. This pattern repeats through the contact Greek varieties in the region, and a very similar pattern also seems to have arisen in copula contexts in Sason Arabic (Akkuş and Benmamoun 2016) and a number of other peripheral Arabic varieties that have been in contact with head-final systems and variously harnessed third-person forms of 'be' and pronouns to spell out the previously null copula. If the discussion here is on the right track, then, the fact that there is (on the assumptions entertained here) a derivation that can give rise to V-O-Aux structures in languages with V-to-v raising may be a further boon deriving from the EP-oriented characterization of FOFC argued for in this chapter: it allows us to deepen our understanding of the typology of VO languages and to understand the (limited) circumstances under which final elements can be part of inflecting systems. The EP-oriented characterization of FOFC in (5), then, is not undermined by the possibility we have considered here; this will only be the case if an inflecting VO system with a final auxiliary that inflects in the normal manner is uncovered. And that, to date, has not been the case.

5. Conclusion: What Particles Tell Us about the Nature of FOFC

Given the unclarity surrounding the notion "particle" in generative syntax, as in linguistics more generally, the initial purpose of this chapter was to give an overview of the types of particle-containing structures that appear to challenge FOFC. The discussion has revealed that apparently FOFC-violating [[Head-Complement]...Particle] structures are very common, particularly in analytic languages of the sort that are less common in Europe. In fact, many of these languages feature multiple superficially FOFC-violating elements in distinct domains (consider, for example, Dryer's (2009b) observation about the way in which V-O-Neg, V-O-Q, and, to some extent, V-O-Aux cluster together in West African languages). Some of these

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phenomena (e.g., the very well-known V-O-Q- and, more generally, V-O-C-related particle data from Mandarin and Cantonese) have led researchers to conclude that FOFC is in fact a statistical tendency rather than an absolute universal (see, e.g., Whitman 2013, Paul 2014, 2015, Pan and Paul 2017). What the second half of this chapter has sought to show, however, is that this conclusion would result in some extremely rewarding questions not being asked. More specifically, sections 3 and 4 have demonstrated that pursuing the idea that FOFC is a “deep” syntactic universal—a hierarchical universal, in Whitman’s (2008) terms—banning a particular configuration from narrow syntax is a very useful heuristic for developing insight, both into the (diverse) nature(s) of particle elements themselves and into the syntax of a range of, for the most part, understudied constructions. As with other surface-defined phenomena (SVO, SOV, null subjects, etc.), closer investigation has shown that Head-Comp...Part structures are underlyingly quite varied and that there is no meaningful sense in which such structures are structurally “the same.” They do, however, share one property: on closer investigation, none of them seem to violate FOFC. Head-Comp...Part structures are common because there are so many harmless structural configurations that can give rise to a surface FOFC violation; they are not common because they signal the nonuniversality of FOFC or because the formulation of this condition given in (5) requires rethinking. The discussion in this chapter has supplied further evidence that EPs are central to the definition of FOFC; it has also supplied evidence that [F]-oriented consideration of the data is crucial in furthering our understanding both of FOFC and of matters of more general generative interest, such as how functional categories are detected and correctly identified, what domains constitute phasal domains, and what empirical phenomena enable acquirers to identify them.

Strikingly, however, we have also seen that considering the relevant phenomena in exclusively featural (syntactic) terms is insufficient: syntax-PF mapping considerations also come into play. This is important, given the current debate regarding the nature of FOFC. What particle-final structures seem to show is that discussion about whether FOFC is a “deep” syntactic *or* a surfacy PF phenomenon is misfocused; instead, it appears that FOFC is fundamentally an observation about the (permissible) makeup of EPs, conceived of, significantly, within a phasal approach to syntactic derivation, and that this has certain necessary consequences at PF. A “blind” PF approach to FOFC, in terms of which all heads (defective and otherwise) are equal and it is the output (i.e., the final string) that counts, would evidently undermine the insights FOFC has to offer in nontrivial ways.

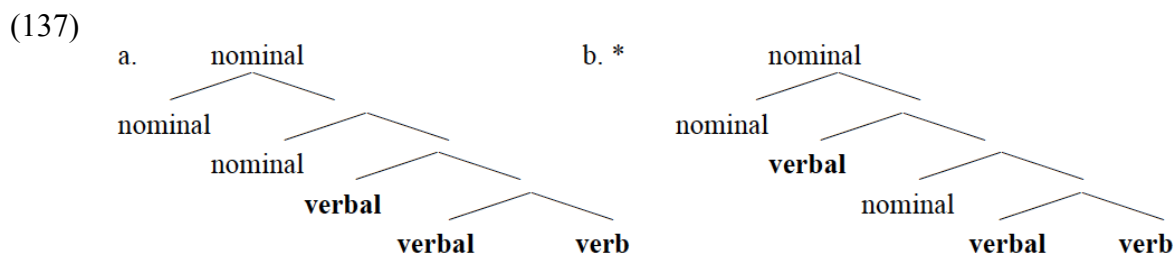
To conclude this chapter, I will broaden the perspective by considering FOFC against the background of a small selection of at first sight unrelated linguistic phenomena that I will argue are, in fact, shaped by the same factors as FOFC. Viewed in very general terms, FOFC is clearly a harmony effect, applying to contiguous stretches of an EP, with the bottom of the EP having a privileged status in determining higher options. More specifically, FOFC requires that (i) head-finality must start at the bottom of an EP, and (ii) once a head-final sequence has “stopped,” it cannot restart within the same EP. A remarkably similar contiguity effect emerges in the domain of categorization. As Panagiotidis (2015) points out, building on work by Bresnan (1997), Borsley and Kornfilt (2000), Malouf (2000), and Ackema and Neeleman (2004), among others (see also Baker 2005a), verbalization and nominalization are subject to the constraint of Phrasal Coherence, illustrated in (137).⁹⁹

⁹⁹ For Baker (2005a), (137) falls out from his (2003a) Reference-Predication Constraint:

(i) *The Reference-Predication Constraint*

No syntactic node can have both a specifier and a referential index.

For Baker (2003a), specifier projection is definitive of verbs (i.e., the “meaning” of Chomsky’s (1970) [+V]), while the ability to bear a referential index is definitive of nouns (i.e., the “meaning” of [+N]).



As (137) shows, an EP that starts off verbal can be recategorized, but recategorization is subject to the condition that it cannot subsequently be “undone” and “redone.” Just as in the case of FOFC, then, no “on-off” patterns are permitted; in the words of Panagiotidis (2015:137–138), “the nominal and the verbal chunk in a mixed projection are distinct...; crucially, *they never intersperse* [emphasis original],” and “...in mixed projections there must always exist a cut-off point where verbal/clausal characteristics end and nominal ones begin” (see also Bresnan 1997, Malouf 2000, Ackema and Neeleman 2004:174, Baker 2005a). Further, crosslinguistic investigation of mixed-category projections has uncovered that these always involve structures with the external distribution of a nominal. In other words, EPs can start off either nominal or verbal, but the option of becoming mixed only exists for EPs that started off verbal. Again, this exactly parallels what we have seen for FOFC: the heads defining an EP can be either final or initial to begin with, but the option of changing the headedness of an EP only exists if it started out head-final.

Similarly, Pesetsky (2013) points to a constraint on agreement that exhibits what appears to be a remarkably parallel kind of contiguity effect. First, he observes that it is possible for Russian nominals to switch gender nominal-internally: a given nominal may start out masculine, but become feminine at a given point in its functional structure. The switch can be shown to be possible at varying heights within the nominal structure, although the very lowest adjectives are not able to make this switch. Importantly, Pesetsky shows that once the gender switch has taken place (i.e., once the initially masculine nominal is feminine), all higher DP-internal agreement *and* all external agreement must be feminine. The reverse switch—feminine to masculine—is not possible. A Russian nominal may therefore be consistently masculine or consistently feminine, but if there is a gender change at any point in the nominal structure, it has to be masculine to feminine. Masculine thus parallels head-finality and verbality in the earlier linearization and categorization examples, while feminine patterns with head-initiality and nominality.

An essentially identical pattern emerges in Lebanese Arabic (see Ouwayda 2012, 2014). Here, the options are for a nominal to be consistently singular or consistently plural throughout, or for it to start off singular but then become plural at varying points in the higher functional structure. Again, low adjectives fall below the threshold; again, once the conversion has taken place, all higher agreement and all external agreement must be plural; and, again, the switch may be from singular to plural, but never the reverse. Singular number therefore patterns with head-finality, verbality, and masculine gender in the earlier linearization, categorization, and agreement examples, and plural number with head-initiality, nominality, and feminine gender.

Finally, Puškar (2015) shows that the same kind of consideration holds in the determination of grammatical vs. semantic agreement in Bosnian/Croatian/Serbian: semantic agreement is possible at the bottom of a nominal, but once grammatical agreement has started, it must continue. In Bosnian/Croatian/Serbian, then, nominals may either exhibit consistent semantic agreement, consistent grammatical agreement, or mixed agreement, in terms of which semantic agreement becomes grammatical at some point in the functional nominal structure. In this language, then, semantic agreement patterns with head-finality, verbality, masculine gender, and singular number in the earlier linearization, categorization, and

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agreement examples, while grammatical agreement patterns with head-initiality, nominality, feminine gender, and plural number.

Taking just the first two cases into account, Pesetsky (2013) argues that there must be a threshold below which a null feminizing or pluralizing morpheme (\mathcal{K} and #, respectively) cannot be merged, but above which it can be merged, at any stage, after which no return to the earlier gender or number is possible. The same analysis seems extendable to Puškar's (2015) data, and Panagiotidis (2015) in fact explicitly proposes a null SWITCH-element that produces the recategorizations observed in the categorization domain (see also Ackema and Neeleman 2004 on the obligatory nullness of this element). In each case, then, a specific null morpheme is assumed to mark the crossover point. An alternative, capitalizing on recent insights into the dynamic nature of phasal domains (see, e.g., Bobaljik and Wurmbrand 2012, Bošković 2014, Harwood 2013, 2015) and seeking to bring FOFC into the picture—a null-morpheme-based analysis does not seem obviously illuminating in this latter case—might be to ascribe all the crossover options discussed here to phase dynamics: switches can potentially be made at all the phase-internal points where a phase could in principle be well-formed, even if it has not reached its maximal extent (i.e., if the LA in question happens not to contain items spelling out the highest edge of the relevant domain). On this view, then, switches of the kind discussed here would serve as indicators of the internal makeup of phasal domains, something that ever more research seems to suggest is likely to be subject to language-specific variation; and final particles, being peripheral elements as argued above, would likewise serve as phase edge markers. The usefulness of a signal of this type will become clear in what is to follow. For the moment, the key point is not precisely what underlies the observed pattern, but the fact that we have a recurring pattern of the kind that we do, one that appears to extend the spirit underlying FOFC into other domains. In every case, we see contiguous harmony effects, precluding “on-off” patterns.

And the recurring pattern does not end there. Hierarchy effects such as those relating to the Animacy Hierarchy (Silverstein 1976), the Case Hierarchy (Caha 2009), the Auxiliary Hierarchy (Sorace 2004), the Agreement Accessibility Hierarchy (Bobaljik 2008), and the *ABA syncretism patterns highlighted by nanosyntacticians (see, e.g., Caha 2009) all seem to represent further instances of harmonic contiguity effects in human language. In other words, all the “splits” attested in human languages also seem to be subject to the constraint that a split will divide a given contiguous domain into harmonic subsections; the prediction is therefore that, as with FOFC, what we will not see once we have investigated the relevant phenomena carefully are “on-off” effects. Looking beyond splits, long-established formal principles like the Ban on Improper Movement (Chomsky 1973, May 1979) and Li's (1990) Generalization—in terms of which a lexical head cannot move into a functional head, followed by incorporation into another lexical head—have the same core character: movement operations can be differentiated into various types, depending on their formal properties, with the types having to take place in a designated sequence (A before \bar{A} in the former case, and lexical-into-functional incorporation before functional-into-functional incorporation in the latter); once a switch has taken place from one type to the next, it is not “reversible.” That a question of harmonic contiguity is at stake becomes clear if we consider the fact that the movement types discussed here map onto the clausal (and nominal) hierarchy in a very systematic way: in relation to the Ban on Improper Movement, clausal A-movement targets what we might designate the vP- and TP-domains, while clausal \bar{A} -movement targets the higher CP-domain; for Li's Generalization, it is clear that lexical incorporation will target the bottom of an EP, while functional incorporation must target higher heads. Violations of the Ban on Improper Movement and Li's Generalization, then, entail structures in which a “lower” movement type has followed a “higher” one—in other words, the kind of reversal pattern that is also barred in the FOFC and other harmonic contiguity contexts discussed

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above. As Williams (2003) and Abels (2008) point out, independently and on the basis of very different empirical considerations, the Ban on Improper Movement can in fact be made both more fine-grained (see Abels's UCOOL in (138)) and generalized (see Williams's Generalized Ban on Improper Movement, and Abels's derivational counterpart):

(138) *The Universal Constraint on Operational Ordering in Language (UCOOL)*
 $\theta > A\text{-movement} > \bar{A}\text{-/Operator movement}$

For our purposes, the key point is that the FOFC-type harmonic contiguity pattern, in terms of which contiguous sections of a given formally defined domain must be treated identically and changes are only possible at designated points where the lower structure is of the right type, seems to be a very general one in human language. In fact, the picture that has emerged from the discussion in this section calls to mind the fractal patterns that have been observed elsewhere in nature, for example, in snowflakes, proteins, and DNA. The key property of fractals is their repeating pattern, which emerges in the same form at different levels of magnification (scale); here, the repeatedly emerging basic pattern seems to be one that recurs in different aspects of morphosyntactic organization, requiring that structure be built and operated on in such a way that "higher" structure builds on/references "lower" structure, switches between "higher" and "lower" structure being possible, but not reversible: once "higher" structure is in place, no return is possible, within the same domain, to "lower" structure. The question, of course, is why patterns of this kind should recur as they seem to. This, and some of the related questions highlighted by the investigation of FOFC and particles reported in this chapter, is the topic of ongoing research.

References

- Abels, Klaus (2003). *Successive Cyclicity, Anti-locality, and Adposition Stranding*. Ph.D. dissertation: University of Connecticut (Storrs).
- Abels, Klaus (2008). Towards a restrictive theory of (remnant) movement. *Linguistic Variation Yearbook* 7: 52-120.
- Abels, Klaus (2012a). *Phases. An Essay on Cyclicity in Syntax*. Berlin: Mouton de Gruyter.
- Abels, Klaus (2012b). On 2-3-1. Unpublished ms: UCL.
- Abels, Klaus & Ad Neeleman (2009). Universal 20 without the LCA. In: José M. Brucart, Anna Gavarró and Jaume Solà (eds). *Merging Features*. Oxford: Oxford University Press, 60-80.
- Abels, Klaus & Ad Neeleman (2012). Linear Asymmetries and the LCA. *Syntax* 15(1): 25-74.
- Aboh, Enoch (2004). *The Morphosyntax of Complement-Head Sequences*. Oxford: Oxford University Press.
- Aboh, Enoch (2006). Complementiation in Saramaccan and Gungbe: the case of C-type modal particles. *Natural Language and Linguistic Theory* 24(1): 1-55.
- Aboh, Enoch (2010). The P-route. In: Guglielmo Cinque & Luigi Rizzi (eds). *Mapping Spatial PPs. The Cartography of Syntactic Structures* Vol. 6. New York: Oxford University Press, 225-260.
- Aboh, Enoch & Maria Dyakonova (2009). Predicate doubling and chains. *Lingua* 119: 1035-1065.
- Ackema, Peter & Ad Neeleman (2004). *Beyond Morphology: Interface Conditions on Word Formation*. Oxford: Oxford University Press.
- Aelbrecht, Lobke, Liliane Haegeman & Rachel Nye (2012). *Main Clause Phenomena. New Horizons*. Amsterdam: Benjamins.

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- Akkuş, Faruk & Elabbas Benmamoun (2016). Clause structure in contact contexts: the case of Sason Arabic. In: Youssef Haddad & Eric Potsdam (eds). *Perspectives on Arabic Linguistics XXVIII Papers from the Annual Symposium on Arabic Linguistics, Gainesville, Florida, 2014*. Amsterdam: Benjamins, 153-172.
- Aldridge, Edith (2002). Nominalization and *wh*-movement in Seediq and Tagalog. *Language and Linguistics* 3: 393-427.
- Aldridge, Edith (2004). *Ergativity and Word Order in Austronesian Languages*. Ph.D. dissertation: Cornell University.
- Aldridge, Edith (2011). Neg-to-Q: the historical origin and development of question particles in Chinese. *The Linguistic Review* 28(4): 411-447.
- Alektoridis, Anastasios S. (1883). Λεξιλόγιον τοῦ ἐν Φερτακαίνοις τῆς Καππαδοκίας γλωσσικοῦ ἰδιώματος. *Deltion Istorikis Ethnologikis Etaireias* 1, 480-508.
- Alexander, David (2007). *The Spanish Postnominal Demonstrative in Synchrony and Diachrony*. Ph.D. dissertation: Ohio State University.
- Alexiadou, Artemis, Liliane Haegeman & Melita Stavrou (2007). *Noun Phrase in the Generative Perspective*. Berlin: Mouton de Gruyter.
- Anderson, Gregory (2005). *Auxiliary Verb Constructions*. Oxford: Oxford University Press.
- Anderson, Gregory (2011). Auxiliary verb constructions in the languages of Africa. *Studies in African Linguistics* 40(1/2): 1-409.
- Antonelli, André (2015). Roots of V to C movement in Romance: investigating Late Latin Grammar. Paper presented at the Traces of History Workshop (Oslo). (<http://www.hf.uio.no/ilos/english/research/projects/traces-of-history/abstracts/antonelli.pdf>; last accessed 3 July 2016)
- Archelaos, I. Sarantidis (1899). *Ἡ Σινασός, ἥτοι θέσις, ἱστορία, ἠθικὴ καὶ διανοητικὴ κατάστασις, ἥθη, ἔθιμα καὶ γλῶσσα τῆς ἐν Καππαδοκίᾳ κωμοπόλεως Σινασοῦ. Ἐν ἐπιμέτρῳ δὲ καὶ σύντομος περιγραφή τῶν ἐν ταῖς ἐπαρχίαις Καισαρείας καὶ Ἰκονίου Ἑλληνικῶν Κοινοτήτων ὡς καὶ τῶν ἐν αὐταῖς σφριζομένων ἑλληνικῶν διαλέκτων ἐν σχέσει πρὸς τὴν ἐν Σινασῶ λαλουμένην*. Athens: Ioannis Nikolaidis.
- Arsenijević, Boban (2009). Clausal complementation as relativization. *Lingua* 119: 39-50.
- Asbury, Anna, Jakub Dotlačil, Berit Gehrke & Rick Nouwen (2008). *Syntax and Semantics of Spatial P*. Amsterdam: Benjamins.
- van der Auwera, Johan, Peter Kehayov & Alice Vittrant (2009). Acquisitive modals. In: Lotte Hogeweg, Helen de Hoop & Andrej Malchukov (eds). *Cross-linguistic Semantics of Tense, Aspect, and Modality*. Amsterdam: Benjamins, 271-302.
- Bailey, Laura (2012). *The Syntax of Question Particles*. Ph.D. dissertation: University of Newcastle.
- Baker, Mark (2003a). *Lexical Categories*. Cambridge: Cambridge University Press.
- Baker, Mark (2005a). On Verb-initial and Verb-final word order in Lokaa. *Journal of African Languages and Linguistics* 26: 125-164.
- Baker, Mark (2005b). On gerunds and the theory of categories. Unpublished ms: Rutgers.
- Baker, Mark (2008). The macroparameter in a microparametric world. In: Theresa Biberauer (ed.). *The Limits of Syntactic Variation*. Amsterdam: Benjamins, 351-374.

- To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.
- Baltin, Mark (1989). Heads and projections. In: Mark Baltin & Anthony Kroch (eds). *Alternative Conceptions of Phrase Structure*. Chicago: University of Chicago Press, 1-16.
- Batlloori, Montserrat and Maria-Lluïsa Hernanz (2013). Emphatic polarity particles in Spanish and Catalan. *Lingua* 128: 9-30.
- Bayer, Josef (1999). Final complementizers in hybrid languages. *Journal of Linguistics* 35(2): 233-271.
- Bayer, Josef (2001). Two grammars in one: sentential complements and complementizers in Bengali and other South Asian languages. In: Peri Bhashkararao & Karumuri Venkata Subbarao (eds). *The Yearbook of South Asian Languages and Linguistics 2001*. New Delhi & Thousand Oaks: SAGE, 11-36.
- Bayer, Josef (2016a). Criterial freezing in the syntax of particles. Unpublished ms: University of Konstanz.
- Bayer, Josef (2016b). Why doubling discourse particles? Unpublished ms: University of Konstanz.
- Bayer, Josef, Jana Häusler & Markus Bader (to appear). A new diagnostic for cyclic wh-movement. Discourse particles in German questions. To appear in *Linguistic Inquiry*.
- Bayer, Josef & Hans-Georg Obenauer (2011). Discourse particles, clause structure, and question types. *The Linguistic Review* 28(4): 449-491.
- Bayer, Josef & Andreas Trotzke (2015). The derivation and interpretation of left peripheral discourse particles. In: Josef Bayer, Roland Hinterhölzl & Andreas Trotzke (eds). *Discourse-oriented Syntax*. Amsterdam: Benjamins, 13-40.
- Beck, Sigrid (1996a). *Wh-constructions and transparent Logical Form*. Ph.D. dissertation: Tübingen University.
- Beck, Sigrid (1996b). Quantified Structures as Barriers for LF-movement. *Natural Language Semantics* 4: 1-56.
- Beck, Sigrid (2006). Intervention effects follow from focus interpretation. *Natural Language Semantics* 14: 1-56.
- Beck, Sigrid & Shin-Sook Kim (1997). On *wh*- and operator scope in Korean. *Journal of East Asian Linguistics* 6: 339-384.
- Bell, Arthur (2004a). How N-words move: bipartite negation and ‘Split-NegP’. In: Anne Breitbarth & Henk van Riemsdijk (eds). *Triggers*. Berlin: Mouton de Gruyter, 77-114.
- Bell, Arthur (2004b). *Bipartite Negation and the Fine Structure of the Negative Phrase*. Ph.D. dissertation: Cornell.
- Belletti, Adriana (2004). Aspects of the Low IP Area. In: Luigi Rizzi (ed.). *The Structure of CP and IP*. Oxford: Oxford University Press, 16-51.
- Berwick, Robert (1985). *The Acquisition of Syntactic Knowledge*. Cambridge, MA: MIT Press.
- Berwick, Bob & Noam Chomsky (2011). The Biolinguistic Program: the current state of its evolution and development. In: Anna Maria DiSciullo & Cedric Boeckx (eds). *The Biolinguistic Enterprise: New Perspectives on the Evolution and Nature of the Human Language Faculty*. Cambridge, MA.: MIT Press, 19-41.
- Besnier, Niko (2000). *Tuvaluan, a Polynesian Language of the Central Pacific*. London: Routledge.
- Bhatt, Rakesh & James Yoon (1992). On the composition of COMP and parameters of V2. In: Dawn Bates (ed.). *Proceedings of WCCFL 10*. Stanford: Stanford Linguistic Association, 41-52.

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- Biberauer, Theresa (2008). Doubling and omission: insights from Afrikaans negation. In: Sjef Barbiers, Margreet van der Ham, Olaf Koenenman & Marika Lekakou (eds.). *Microvariations in Syntactic Doubling*. Bingley: Emerald, 103-140.
- Biberauer, Theresa (2009). Jespersen off course? The case of contemporary Afrikaans negation. In: Elly van Gelderen (ed.). *Cyclical Change*. Amsterdam: John Benjamins, 91-130.
- Biberauer, Theresa (2011). In defence of lexico-centric parametric variation: two 3rd factor-constrained case studies. Paper presented at the Workshop on Formal Grammar and Syntactic Variation: Rethinking Parameters (Madrid).
- Biberauer, Theresa (2012). Competing reinforcements: when languages opt out of Jespersen's Cycle. In: Ans van Kemenade & Nynke de Haas (eds). *Historical Linguistics 2009: Selected papers from the 19th International Conference on Historical Linguistics, Nijmegen, 10-14 August 2009*. Amsterdam: Benjamins, 1-30.
- Biberauer, Theresa (2013). Predicate doubling in (Germanic) contact varieties: Introducing the case of Afrikaans. Paper presented at the 27th Comparative Germanic Linguistics Conference (Yale).
- Biberauer, Theresa (2014) Optional V2 in Modern Afrikaans: probing a Germanic peculiarity. To appear in: Bettelou Los & Pieter de Haan (eds). *Verb-Second Languages: Essays in honour of Ans van Kemenade*. Amsterdam: John Benjamins.
- Biberauer, Theresa (2015a). Macro- and microvariation: an emergentist perspective. Paper presented at the Formal Approaches to Morphosyntactic Variation conference (Vitoria)
- Biberauer, Theresa (2015b). *Nie sommer nie*: sociohistorical and formal comparative considerations in the rise and maintenance of the modern Afrikaans negation system. In: Theresa Biberauer & Johan Oosthuizen (eds). *Studies opgedra aan Hans den Besten: Suider-Afrikaanse perspektiewe/Studies dedicated to Hans den Besten: Southern African perspectives*. Stellenbosch: Sunmedia, 129-175.
- Biberauer, Theresa (2016a). Probing the nature of the Final-over-Final Constraint: the perspective from adpositions. To appear in: Laura Bailey & Michelle Sheehan (eds). *Order and Structure in Syntax*. Place: Language Science Press.
- Biberauer, Theresa (2016b). Contact and acquirers: the "exotic" factors that have shaped Afrikaans V2. Paper presented at the 1st Workshop on the Determinants of Diachronic Stability (Ghent)
- Biberauer, Theresa (2016c). Going beyond the Input: Three Factors and variation, change and stability. Paper presented at Formal Approaches to Variation 3 (New York)
- Biberauer, Theresa & Sonia Cyrino (2009). Negative developments in Afrikaans and Brazilian Portuguese. Paper presented at the 19th Colloquium on Generative Grammar (CGG) conference (Vitoria)
- Biberauer, Theresa, Liliane Haegeman & Ans van Kemenade (2014). Putting our heads together: towards a syntax of particles. *Studia Linguistica* 68(1): 1-15.
- Biberauer, Theresa, Anders Holmberg & Ian Roberts (2014). A syntactic universal and its consequences. *Linguistic Inquiry* 45(2): 169-225.
- Biberauer, Theresa & Xuhui Hu (2014). Chinese particles revisited: implications for the typology of syntactic categories?. Paper presented at the Third Cambridge Comparative Syntax (CamCoS3) Prequel Workshop.

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- Biberauer, Theresa, Glenda Newton & Michelle Sheehan (2009a). Limiting synchronic and diachronic variation and change: the Final-Over-Final Constraint. *Language and Linguistics* 10(4): 699-741.
- Biberauer, Theresa, Glenda Newton & Michelle Sheehan (2009b). The Final-over-Final Constraint and predictions for diachronic change. In: Ruth Compton & Monica Irimia (eds.). *Toronto Working Papers in Linguistics* 31. [<http://twpl.library.utoronto.ca/index.php/twpl/article/view/6091>; last accessed 15 November 2015]
- Biberauer, Theresa & Johan Oosthuizen (2011). More unbearably light elements? Silent verbs demanding overt complementizers in Afrikaans. *Snippets* 24: 5-6.
- Biberauer, Theresa & Ian Roberts (2005). Changing EPP-parameters in the history of English: accounting for variation and change. *English Language and Linguistics* 9(1): 5-46.
- Biberauer, Theresa & Ian Roberts (2009). The Return of the Subset Principle. In: P. Crisma & G. Longobardi (eds.). *Historical Syntax and Linguistic Theory*. Oxford: Oxford University Press, 58-74.
- Biberauer, Theresa & Ian Roberts (2015a). Rethinking formal hierarchies: a proposed unification. In: James Chancharu, Xuhui Hu & Moreno Mitrović (eds.). *Cambridge Occasional Papers in Linguistics* 7: 1-31.
- Biberauer, Theresa & Ian Roberts (2015b). Clausal hierarchies. In: Ur Shlonsky (ed.). *Beyond Functional Sequence*. Oxford: OUP, 295-313.
- Biberauer, Theresa & Ian Roberts (2015c). Movement without diacritics: getting maximal use out of minimal means. Paper presented at the 41st Incontro di grammatica generativa (Perugia)
- Biberauer, Theresa & Ian Roberts (in press). Parameter setting. To appear in: A. Ledgeway & I. Roberts (eds.). *The Cambridge Handbook of Historical Syntax*. Cambridge: Cambridge University Press.
- Biberauer, Theresa, Ian Roberts & Michelle Sheehan (2014). No-choice parameters and the limits of syntactic variation. In: Robert Santana-LaBarge (ed.). *Proceedings of the 31st West Coast Conference on Formal Linguistics (WCCFL 31)*. Somerville, MA: Cascadilla Press, 46-55.
- Biberauer, Theresa, Michelle Sheehan & Glenda Newton. (2010). Impossible Changes and Impossible Borrowings: the Final-over-Final Constraint. In: Anne Breitbarth, Chris Lucas, Sheila Watts & David Willis (eds.). *Continuity and Change in Grammar*. Amsterdam: Benjamins, 35-60.
- Biberauer, Theresa & Michelle Sheehan (2012a). Introduction: Particles through a modern syntactic lens. In: Theresa Biberauer & Michelle Sheehan (eds.). *The Linguistic Review* 38(4): 387-401
- Biberauer, Theresa & Michelle Sheehan (2012b). Disharmony, antisymmetry, and the Final-over-Final Constraint. In: Vidal Elguea & Myriam Extebarria (eds.). *Ways of Structure Building*. Oxford: Oxford University Press, 206-244.
- Biberauer, Theresa & Michelle Sheehan (2013). Introduction. In: T. Biberauer & M. Sheehan (eds.). *Theoretical Approaches to Disharmonic Word Order*. Oxford: Oxford University Press, 1-46.
- Biberauer, Theresa & Hedde Zeijlstra (2012a). Negative Concord in Afrikaans: filling a typological gap. *Journal of Semantics* 29(3): 345-371.
- Biberauer, Theresa & Hedde Zeijlstra (2012b). Negative changes: three factors and the diachrony of Afrikaans negation. In: Charlotte Galves, Sonia Cyrino, Ruth Lopez & Juanito Avelar (eds.). *Parameter Theory and Linguistic Change*. Oxford: Oxford University Press, 237-263.

- To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.
- Bidese, Ermenegildo, Andrea Padovan & Alessandra Tomaselli (2012). A binary system of complementizers in Cimbrian relative clauses. *Working Papers in Scandinavian Syntax* 90:1-21.
- Biggs, Alison (2014). *Dissociating Theta-roles and Case: a Comparative Investigation*. PhD dissertation: University of Cambridge.
- Blackings, Mairi & Nigel Fabb (2003). *A Grammar of Ma'di*. Berlin: Mouton de Gruyter.
- Bobaljik, Jonathan (2008). Where's phi? Agreement as a post-syntactic operation. In: Daniel Harbour, David Adger & Susana Bejar (eds). *Phi-theory: Phi Features across Interfaces and Modules*. Oxford: Oxford University Press, 295-328.
- Bobaljik, Jonathan & Susi Wurmbrand (2005). The domain of agreement. *Natural Language and Linguistic Theory* 23: 809-865.
- Bodrogligeti, Andras (2003). *An Academic Reference Grammar of Modern Literary Uzbek*. Munich: Lincom GmbH.
- Eefje, Boef (2012). *Doubling in relative clauses. Aspects of morphosyntactic variation in Dutch*. Ph.D. dissertation: Utrecht/Meertens Instituut.
- Bombi-Ferrer, Carla (2014). *Spanish Postnominal Demonstratives*. BA dissertation: University of Cambridge.
- Bonfim Duarte, Fabio (2012). Tenetehára: a predicate fronting language. *Canadian Journal of Linguistics/Revue canadienne de linguistique* 57(3): 359-386.
- Borer, Hagit (1984). *Parametric syntax. Case studies in Semitic and Romance Languages*. Dordrecht: Foris.
- Borsley, Robert & Jaklin Kornfilt (2000). Mixed Extended Projections. In: Robert Borsley (ed.). *The Nature and Function of Syntactic Categories*. New York: Academic Press, 101-131.
- Bošković, Zeljko (2001). *Li* without PF movement. In: Steve Franks, Tracy Holloway King & Misha Yadroff (eds). *Formal Approaches to Slavic Linguistics: The Indiana Meeting, 2000*. Ann Arbor: Michigan Slavic Publications, 57-75.
- Bošković, Zeljko. (2014). Now I'm a phase, now I'm not a phase: on the variability of phases with extraction and ellipsis. *Linguistic Inquiry* 45: 27-89.
- Branigan, Phil (2012). Macroparameter learnability: an Algonquian Case Study. Unpublished ms: Memorial University of Newfoundland.
- Breitbarth, Anne & Liliane Haegeman (2010). Continuity is change: the long tail of Jespersen's Cycle in Flemish. In: Anne Breitbarth, Christopher Lucas, Sheila Watts & David Willis (eds). *Continuity and Change in Grammar*. Amsterdam: Benjamins, 61-76.
- Breitbarth, Anne & Liliane Haegeman (2013). The distribution of preverbal *en* in (West) Flemish: syntactic and interpretive properties. *Lingua* 147: 69-86.
- Bresnan, Joan (1997). Mixed Categories as head sharing constructions. In: Miriam Butt & Tracy Holloway-King (eds). *Proceedings of the LFG97 Conference*. Stanford, CA: CSLI Publications, 1-17.
- Broekhuis, Hans (2011). A typology of clause structure. *Linguistic Variation Yearbook* 10: 1-31.
- Bruening, Benjamin (2009). Selectional asymmetries between CP and DP suggest that the DP Hypothesis is wrong. In: Laurel MacKenzie (ed.). *U. Penn Working Papers in Linguistics 15.1: Proceedings of the 32nd Annual Penn Linguistics Colloquium*, 26-35. (<http://repository.upenn.edu/pwpl/vol15/iss1/>; last accessed 2 June 2016)
- Bruening, Benjamin, Xuyen Dinh & Lan Kim (2015). Selection, idioms, and the structure of nominal phrases with and without classifiers. Unpublished ms:

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- University of Delaware.
(<http://udel.edu/~bruening/Downloads/IdiomsClassifiers7.3.pdf>; last accessed 2 June 2016)
- Buell, Leston (2012). 'Ewe VP Fronting and Derivation by Phase.' ms, University of Amsterdam.
- Cable, Seth (2010). *Q-particles, Wh-movement, and Pied-piping*. Oxford: Oxford University Press.
- Cable, Seth (2012). The optionality of movement and EPP in Dholuo. *Natural Language and Linguistic Theory* 30(3): 651-697.
- Caha, Pavel (2009). *The Nanosyntax of Case*. PhD. Dissertation: University of Tromsø.
- Cardinaletti, Anna (2011). German and Italian modal particles and clause structure. *The Linguistic Review* 28(4): 493-553.
- Cardinaletti, Anna & Michal Starke (1999). The typology of structural deficiency: a case study of the three classes of pronouns. In: Henk van Riemsdijk (ed.). *Clitics in the Languages of Europe*. New York: Mouton de Gruyter, 145-233.
- Cardinaletti, Anna & Lori Repetti (2008). The phonology and syntax of preverbal and postverbal subject clitics in Northern Italian dialects. *Linguistic Inquiry* 39: 523-563.
- Carlson, Robert (1990). *A Grammar of Supyire*. Berlin: Mouton.
- Carnie, Andrew, & Eithne Guilfoyle (2001). *The Syntax of Verb Initial Languages*. Oxford: Oxford University Press.
- Carnie, Andrew, Heidi Harley & Sheila Dooley. 2005. *Verb First*. Amsterdam: Benjamins.
- Chan, Brian Hok-Shing (2013). Sentence-final particles, complementizers, Antisymmetry and the Final-over-Final Constraint. In: Theresa Biberauer & Michelle Sheehan (eds). *Theoretical Approaches to Disharmonic Word Order*. Oxford: Oxford University Press, 445-468.
- Cheng, Lisa (1991). *On the Typology of Wh-Questions*. Ph.D. dissertation: MIT.
- Cheng, Lisa (1997). *On the Typology of Wh-Questions*. New York: Garland Publishing.
- Cheng, Lisa & Johan Rooryck (2000). Licensing *wh*-in-situ. *Syntax* 3:1-19.
- Cheng, Lisa & Rint Sybesma (2003). Forked modality. *Linguistics in the Netherlands 2003*: 13-23.
- Cheng, Lisa & Rint Sybesma (2004). Postverbal 'can' in Cantonese (and Hakka) and Agree. *Lingua* 114: 419-445.
- Chomsky, Noam (1970). Remarks on Nominalization. In: Roderick A. Jacobs & Peter S. Rosenbaum (eds), *Readings in English Transformational Grammar*, 184-221. Boston: Ginn.
- Chomsky, Noam. (1973). Conditions on transformations. In: Stephen Anderson & Paul Kiparsky (ed.). *A Festschrift for Morris Halle*, 232-286. New York: Holt, Rinehart and Winston.
- Chomsky, Noam (1994). Bare Phrase Structure. *MIT Occasional Papers in Linguistics* 5. Cambridge, MA: MIT Press. PAGES
- Chomsky, Noam (1995). *The Minimalist Program*. Cambridge, MA: MIT Press.
- Chomsky, Noam (2000). Minimalist Inquiries. In Roger Martin, David Michael & Juan Uriagereka (eds). *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*, 89-155. Cambridge, Mass.: MIT Press.
- Chomsky, Noam (2001). Derivation by phase. In: Michael Kenstowicz (ed.). *Ken Hale: A Life in Language*. Cambridge: MIT Press, 1-52.

- To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.
- Chomsky, Noam (2005). Three factors in Language Design. *Linguistic Inquiry* 36: 1-22.
- Christophe, Anne, Jacques Mehler & Núria Sebastián-Gallés (2001). Perception of prosodic boundary correlates by newborn infants. *Infancy* 2: 385-394.
- Christophe, Anne, Maria-Teresa Guasti, Marina Nespor & Brit van Ooyen (2003). Prosodic structure and syntactic acquisition: The case of the head-direction parameter. *Developmental Science* 6: 211-220.
- Chung, Jui-Yi Zoey (2012). Investigating the syntax of postverbal modals in Hakka. *Taiwan Journal of Linguistics* 10(1): 69-114.
- Chung, Sandy (2012). Are lexical categories universal? The view from Chamorro. *Theoretical Linguistics* 38:1-56.
- Cinque, Guglielmo (1999). *Adverbs and Functional Heads. A Cross-Linguistic Perspective*. Oxford: Oxford University Press.
- Cinque, Guglielmo (2005). A note on Verb/Object order and Head/Relative clause order. *University of Venice Working Papers in Linguistics* 15: 49-104. Reprinted in: Cinque, Guglielmo (20 CHECK THE ROUTLEDGE DETAILS).
- Cinque, Guglielmo & Luigi Rizzi (2010). *Mapping Spatial PPs*. Oxford: Oxford University Press.
- Citko, Barbara (2014). *Phase Theory. An Introduction*. Cambridge: Cambridge University Press.
- Cognola, Federica (2013). The mixed OV/VO syntax of Mòcheno main clauses: On the interaction between high and low left periphery. In: Theresa Biberauer, and Michelle Sheehan (eds). *Theoretical Approaches to Disharmonic Word Orders*. Oxford: Oxford University Press, 106-136.
- Collinder, Bjorn (1960). *Comparative Grammar of the Uralic Languages*. Stockholm: Almqvist & Wiksell.
- Coniglio, Marco & Iulia Zegrean (2010). Splitting up Force: evidence from discourse particles. In: Lobke Aelbrecht, Liliane Haegeman & Rachel Nye (eds). *Main Clause Phenomena: New Horizons*. Amsterdam: Benjamins, 229-256.
- Corr, Alice (2016). Structure beyond Force? Evidence for a ‘speech act’ projection from Ibero-Romance. Paper presented at GLOW 39 (Göttingen).
- Corr, Alice (in prep.). *Ibero-Romance at the Syntax-Pragmatics Interface: the Clause and Beyond*. Ph.D. dissertation: University of Cambridge.
- Cowper, Elizabeth & Daniel Currie Hall (2014). *Reductio ad discrimen: where features come from*. *Nordlyd* 41(2):145-164.
- Van Craenenbroeck, Jeroen & Marijke de Belder (2014). On Vocabulary Insertion. *Linguistic Analysis* 39(1/2): 173-210.
- Van Craenenbroeck, Jeroen & Marijke de Belder (2015). How to merge a root. *Linguistic Inquiry* 46(4): 625-655.
- Dahl, Östen (1979). Typology of Sentence Negation. *Linguistics* 17: 79-106.
- D’Alessandro, Roberta & Ian Roberts (2010). Past participle agreement in Abruzzese: split auxiliary selection and the null-subject parameter. *Natural Language and Linguistic Theory* 28: 41-72.
- Davison, Alice. 2007. Word order, parameters, and the Extended COMP projection. In: Josef Bayer, Tanmoy Bhattacharya & M. T. Hany Babu (eds). *Linguistic Theory and South Asian Languages: Essays in Honour of K. A. Jayaseelan*. Amsterdam: Benjamins, 175-198.
- Deal, Amy Rose (2016). Syntactic ergativity: analysis and identification. *Annual Review of Linguistics* 2:165-185.

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- Del Pozzo, Lena (2007). *The Finnish Noun Phrase*. MA dissertation: University of Venice.
- Demonte, Violeta & Olga Fernández Soriano (2009). Force and Finiteness in the Spanish Complementizer System. *Probus* 21(1): 23-49.
- Demuth, Katherine & Carolyn Harford (1999). Verb raising and subject inversion in comparative Bantu. *Journal of African Languages and Linguistics* 20 (1): 41-61.
- Den Dikken, Marcel (2007). Phase extension: Contours of a theory of the role of head movement in phrasal extraction. *Theoretical Linguistics* 33: 1-41.
- Den Dikken, Marcel (2010a). On the functional structure of locative and directional PPs. In: Guglielmo Cinque, and Luigi Rizzi (eds). *Mapping Spatial PPs*. Oxford: OUP, 74-126.
- Den Dikken, Marcel (2010b). Directions from the GET-GO: On the syntax of manner-of-motion verbs in directional constructions. *Catalan Journal of Linguistics* 9: 25-55.
- Deutscher, Guy (2000). Stability against the odds: the survival of verb-final word order in Akkadian. In: Rosanna Sornicola, Erich Poppe & Ariel Shisha Halevy (eds). *Stability, Variation and Change of Word-Order Patterns over Time*. Amsterdam: Benjamins, 55-69.
- Deutscher, Guy (2001). On the mechanisms of morphological change. *Folia Linguistica Historica* 22(1/2): 41-48.
- Deutscher, Guy (2006). Complement clause types and complementation strategies in Akkadian. In: Robert M. W. Dixon & Alexandra Aikhenvald (eds). *Complement Clauses and Complementation Strategies*. Oxford: Oxford University Press, 159-177.
- Deutscher, Guy (2009). The semantics of clause linking in Akkadian. In: R.M.W. Dixon & Alexandra Aikhenvald (eds). *The Semantics of Clause Linkage*. Oxford: Oxford University Press, 56-73.
- Donaldson, Bruce (1993). *A Grammar of Afrikaans*. Berlin: Mouton de Gruyter.
- Douglas, Jamie (2015). Unifying that *that*-trace and anti-*that*-trace effects. Unpublished ms: University of Cambridge (<http://ling.auf.net/lingbuzz/002793>; last accessed 26 December 2015)
- Dryer, Matthew (1988). Object-verb order and adjective-noun order: dispelling a myth. *Lingua* 74: 77-109.
- Dryer, Matthew (1992). The Greenbergian word order correlations. *Language* 68: 81-138.
- Dryer, Matthew (2007). Word order. In: Terry Shopen (ed.). *Language Typology and Syntactic Description*. Cambridge: Cambridge University Press, 61-131.
- Dryer, Matthew (2009a). Verb-Object-Negative Order in Central Africa. In: Norbert Cyffer, Erwin Ebermann & Georg Ziegelmeyer (eds.). *Negation Patterns in West Africa*. Amsterdam: Benjamins, 307-362.
- Dryer, Matthew (2009b). The branching direction theory of word order correlations revisited. In: Sergio Scalise, Elisabetta Magni & Antonietta Bisetto (eds). *Universals of Language Today*. Berlin: Springer, 185-207.
- Dryer, Matthew & Martin Haspelmath (eds). (2013). *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at <http://wals.info>; last accessed on 21 September 2015)
- Dryer, Matthew (2013a). Polar question particles. In: Matthew Dryer & Martin Haspelmath (eds). *The World Atlas of Language Structures Online*. Leipzig:

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- Max Planck Institute for Evolutionary Anthropology. (Available online at <http://wals.info>; last accessed on 21 September 2015)
- Dryer, Matthew (2013b). Order of Object and Verb. In: Matthew Dryer & Martin Haspelmath (eds). *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at <http://wals.info>; last accessed on 21 September 2015)
- Duffield, Nigel (1995). *Particles and Projection in Irish Syntax*. Dordrecht: Kluwer.
- Duffield, Nigel (2001). On certain head-final effects in Vietnamese. In: Karine Megerdooian and Leonora A. Bar-el (eds). *Proceedings of WCCFL XX*. Somerville, MA: Cascadilla Press, 101-114.
- Duffield, Nigel (2007). Aspects of Vietnamese clause structure: separating Tense from Assertion. *Linguistics* 45: 765-814.
- Duffield, Nigel (2013a). Head-First: On the head-initiality of Vietnamese clauses. In: Daniel Hole & Elizabeth Löbel (eds). *Linguistics of Vietnamese: An International Survey*. Berlin: Mouton de Gruyter, 127-155.
- Duffield, Nigel (2013b). On polarity emphasis, assertion and mood in English and Vietnamese. *Lingua* 137: 248-270.
- Duffield, Nigel (2014a). Minimalism and semantic syntax: interpreting multifunctionality in Vietnamese. Unpublished ms: University of Konan (LingBuzz/001919; last accessed 21 September 2015)
- Duffield, Nigel (2014b). Shake Can Well. Unpublished ms: Konan University (Lingbuzz/002119; last accessed 21 September 2015)
- Duffield, Nigel (2015). On what projects. Unpublished ms: Konan University (Lingbuzz/002429; last accessed 21 September 2015)
- Enfield, Nick (2003). *Linguistic epidemiology: Semantics and grammar of language contact in mainland Southeast Asia*. London: Routledge Curzon.
- Enfield, Nick, Penelope Brown & J.P. de Ruiter (2012). Epistemic dimensions of polar questions: sentence-final particles in comparative perspective. In: J.P. de Ruiter (ed.). *Questions: Formal, Functional and Interactional Perspectives*. Cambridge: Cambridge University Press, 193-221.
- Epée, Roger (1976). On some rules that are not successive cyclic in Duala. *Linguistic Inquiry* 7: 193-198.
- Erlewine, Mitcho (2015). Low sentence-final particles in Mandarin Chinese and the Final-over-Final Constraint. Unpublished ms: McGill.
- Español-Echevarría, Manuel (1994). Auxiliary selection in Greek dialects. Paper presented at WECOL 24 (Fresno).
- Etxepare, Ricardo & Bill Haddican (2014). Repairing Final-Over-Final Constraint Violations: evidence from Basque verb clusters. Unpublished ms: CNRS (Bayonne) & CUNY.
- Fang, Xiaoyan (2003). *Sentence-final Particles in Guangzhou Cantonese*. Guangzhou: Jinan University Press.
- Farris, Edwin (1992). A Syntactic Sketch of Yosundúa Mixtec. In: Henry Bradley & Barbara Hollenbach (eds). *Studies in the Syntax of Mixtecan Languages* (volume 4). Dallas: Summer Institute of Linguistics and the University of Texas at Arlington, 1-171.
- Feinauer, Ilse (1989). Plasing in Afrikaanse afhanklike sinne. *Suid-Afrikaanse Tvdskrif vir Taalkunde* 7(1): 30-37.
- Féry, Caroline (to appear). *Intonation and Prosodic Structure*. Cambridge: Cambridge University Press. (https://dl.dropboxusercontent.com/u/2155773/Fery_2015.pdf; last accessed 3 July 2016)

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- Fortuny, Jordi (2010). On the duality of patterning. In: J-W. Zwart & M. de Vries (eds). *Structure Preserved: Studies in Syntax for Jan Koster*. Amsterdam: Benjamins, 131–140.
- Fowlie, Meaghan (2014). Adjunction and Minimalist Grammars. In: Glyn Morrill, Reinhard Muskens, Rainer Osswald & Frank Richter (eds). *Proceedings of Formal Grammar 2014, Lecture Notes in Computer Science Vol. 8612*. Dordrecht: Springer, 34-51.
- Frajzyngier, Zygmunt (1993). *A Grammar of Mupun*. Berlin: Dietrich Reimer Verlag.
- Franco, Ludovico (2012). Against the identity of complementizers and (demonstrative) pronouns. In: Katarzyna Dziubalska-Kolaczyk (ed.). *Poznan Studies in Contemporary Linguistics* 48: 565-596.
- Frascarelli, Mara (2008). The fine structure of the Topic field. In: Cécile de Cat & Katherine Demuth (eds). *The Bantu-Romance Connection. A Comparative Investigation of Verbal Agreement, DPs, and Information Structure*. Amsterdam: Benjamins, 261-292.
- Frascarelli, Mara & Roland Hinterhölzl (2007). Types of Topics in German and Italian. In: Susanne Winkler & Kirsten Schwabe (eds). *On Information Structure, Meaning and Form*. Amsterdam: Benjamins, 87-116.
- Gagnon, Michaël & Alexis Wellwood (2008). Interrogative structures in Marshallese. In: S. Jones (ed.) *Proceedings of the Canadian Linguistics Association Annual Meeting 2007*, 1-12. (http://homes.chass.utoronto.ca/~cla-acl/actes2008/CLA2008_Gagnon_Wellwood.pdf; last accessed 21 September 2015)
- Gallego, Ángel (2006). Phase sliding. Unpublished ms: UAB.
- Gallego, Ángel (2010). *Phase Theory*. Amsterdam: Benjamins.
- Gallego, Ángel (2012). *Phases. Developing the Framework*. Berlin: de Gruyter.
- Gallego, Ángel & Juan Uriagereka (2007). Sub-extraction from subjects: a phase theory account. In: José Camacho, Nydia Flores-Ferrán, Liliane Sánchez, Viviane Déprez & María José Cabrera(eds). *Romance Linguistics 2006*. Amsterdam: Benjamins, 149-162.
- van Gelderen, Elly (2004). *Grammaticalization as Economy*. Amsterdam: Benjamins.
- van Gelderen, Elly (2009). *Cyclical Change*. Amsterdam: Benjamins.
- van Gelderen, Elly (2011). *The Linguistic Cycle: Language Change and the Language Faculty*. Oxford: Oxford University Press.
- Georgopoulos, Carol (1991). *Syntactic Variables: Resumptive Pronouns and A' Binding in Palauan*. Dordrecht: Kluwer.
- Gervain, Judit & Jacques Mehler (2011). Speech perception and language acquisition in the first year of life. *Annual Review of Psychology* 61: 191-218.
- Gervain, Judit, Marina Nespors, Reiko Mazuka, Ryota Horie & Jacques Mehler (2008). Bootstrapping word order in prelexical infants: a Japanese-Italian cross-linguistic study. *Cognitive Psychology* 57(1): 56-74.
- Gervain, Judit & Janet Werker (2013). Prosody cues word order in 7-month-old bilingual infants. *Nature Communications* 4:1490.
- Giannakidou, Anastasia (2005). N-words and Negative Concord. In: Martin Everaert & Henk van Riemsdijk (eds). *The Blackwell Companion to Syntax*. Oxford: Blackwell, 327-391.
- Giannakidou, Anastasia (2011). Negative polarity and positive polarity: licensing, variation and compositionality. In: K. von Stechow, Maienborn, C., Portner, P. (Eds.), *The Handbook of Natural Language Meaning*. second ed. Mouton de Gruyter, Berlin, 1660-1712.

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- Ginsburg, Jason (2009). *Interrogative Features*. Ph.D. dissertation: University of Arizona.
- Giorgi, Alessandra (2010). *About the Speaker: towards a Syntax of Indexicality*. Oxford: Oxford University Press.
- Giorgi, Alessandra & Fabio Pianesi (1997). *Tense and Aspect: from Semantics to Morphosyntax*. Oxford: Oxford University Press.
- Greenberg, Joseph (1963). Some universals of grammar with particular reference to the order of meaningful elements. In: Joseph Greenberg (ed.). *Universals of Language*. Cambridge, MA: MIT Press, 58-90.
- Grewendorf, Günther (2015). *Remnant Movement*. Berlin: Mouton de Gruyter.
- Grewendorf, Günther & Cecilia Poletto (2009). The hybrid complementizer system of Cimbrian: In: Vincenzo Moscati & Emilio Servidio (eds). *Proceedings of XXXV Incontro di Grammatica Generativa*. Siena: Centro Interdipartimentale di Studi Cognitivi sul Linguaggio, 181-194.
- Grimshaw, Jane (1991). Extended Projection. Unpublished ms: Brandeis University.
- Grohmann, Kleanthes (2003). *Prolific Domains: On the Anti-Locality of Movement Dependencies*. Amsterdam: Benjamins.
- Guardiano, Cristina (2010). Demonstratives and word order within the DP. A crosslinguistic inspection. Paper presented at the FOFC in Nominals Workshop, Linguistics Association of Great Britain Annual Meetings (Leeds).
- Güldemann, Tom (2010). (Preposed) verb doubling and predicate-centered focus. Paper presented at Workshop Project B7, Berlin, 21-22/11/2010. (http://www2.hu-berlin.de/predicate_focus_africa/data/B7.Workshop.2010-Güldemann-Verb.doubling.pdf)
- Guthrie, Malcolm (1948). *The Classification of the Bantu Languages*. London: Oxford University Press for the International African Institute.
- Haas, Mary (1964). *Thai-English Students' Dictionary*. Stanford: Stanford University Press.
- Haegeman, Liliane (1995). *The Syntax of Negation*. Cambridge: Cambridge University Press.
- Haegeman, Liliane (2006). Conditionals, factives and the left periphery. *Lingua* 116: 1651-1669.
- Haegeman, Liliane (2012). *Main Clause Phenomena and the Composition of the Left Periphery*. Oxford: Oxford University Press.
- Haegeman, Liliane (2014). West Flemish verb-based discourse markers and the articulation of the speech act layer. *Studia Linguistica* 68(1): 116-139.
- Haegeman, Liliane & Virginia Hill (2013). The syntacticization of discourse. In: Raffaella Folli, Robert Truswell & Christina Sevdali (eds). *Syntax and its Limits*. Oxford: Oxford University Press, 370-390.
- Hagstrom, Paul (1998). *Decomposing Questions*. Ph.D. dissertation: MIT.
- Haider, Hubert (2013). *Symmetry Breaking in Syntax*. Cambridge: Cambridge University Press.
- Haig, Geoffrey (2001). Linguistic diffusion in present-day Eastern Anatolia: from top to bottom. In: Alexandra Aikhenvald & Robert M.W. Dixon (eds). *Areal Diffusion and Genetic Inheritance: Problems in Comparative Linguistics*. Oxford: Oxford University Press, 195-224.
- Hanna, William J. (2010). Twenty functional categories compared between Thai and Lue. *Payap University (PYU) Working Papers in Linguistics* 6: 1-32.
- Harley, Heidi (2014). On the identity of roots. *Theoretical Linguistics* 40(3/4): 225-276.

- To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.
- Harwood, Will (2013). *Being Progressive is Just a Phase*. Ph.D. dissertation: Ghent University.
- Harwood, Will (2015). Being progressive is just a phase: celebrating the uniqueness of progressive aspect under a phase-based analysis. *Natural Language & Linguistic Theory* 33(2): 523-573.
- Haspelmath, Martin (1997). *Indefinite Pronouns*. Oxford: Oxford University Press.
- Hawkins, John (2008). An asymmetry between VO and OV languages: the ordering of obliques. In: Greville Corbett & Michael Noonan (eds). *Case and Grammatical Relations: Essays in Honour of Bernard Comrie*. Amsterdam: Benjamins, 167-190.
- Hawkins, John (2013). Disharmonic word orders from a processing efficiency perspective. In: Theresa Biberauer & Michelle Sheehan (eds). *Theoretical Approaches to Disharmonic Word Order*. Oxford: Oxford University Press, 391-406.
- Heim, Johannes (2016). The distribution of the intersubjective particle *gell*. Unpublished ms: UBC (http://syntaxofspeechacts.linguistics.ubc.ca/wp-content/uploads/2014/02/JHeim_intersubjective-gell_ms.pdf; last accessed 3 July 2016)
- Heim, Johannes, Hermann Keupdjio, Zoe Wai-Man Lam, Adriana Osa-Gómez & Martina Wiltschko (2014). How to do things with particles. To appear in: *Proceedings of the Canadian Linguistics Association*. (<http://syntaxofspeechacts.linguistics.ubc.ca/wp-content/uploads/2014/02/heim-et-al-cla-2014-proceedings.pdf>; last accessed 3 July 2016)
- Heine, Bernd & Tania Kuteva (2002). *World Lexicon of Grammaticalization*. Cambridge: Cambridge University Press.
- Heine, Bernd & Mechtild Reh. (1984). *Grammaticalization and Reanalysis in African Languages*. Hamburg: Helmut Buske.
- Henderson, Brent (2007). Multiple agreement and inversion in Bantu. *Syntax* 9(3): 275-289.
- Henderson, Eugenie (1997). *Bwe Karen Dictionary. With Texts and English-Karen Word List* (volumes I and II). London: School of Oriental and African Studies.
- Herburger, Elena (2000). *What Counts: Focus and Quantification*. Cambridge, MA: MIT Press.
- Hill, Virginia (2007). Vocatives and the pragmatics-syntax interface. *Lingua* 117(12): 2077-2110.
- Hill, Virginia (2013a). *Vocatives. How Syntax Meets with Pragmatics*. Leiden: Brill.
- Hill, Virginia (2013b). Features and strategies: the internal syntax of vocative phrases. In: Barbara Sonnenhauser & Patrizia Noel Aziz Hanna (eds). *Vocatives! Addressing the system and performance*. Berlin: Mouton de Gruyter, 79-102.
- Hodson, Arnold W. & Craven H. Walker (1922). *An Elementary and Practical Grammar of the Galla or Oromo Language*. London: Society for Promoting Christian Knowledge.
- Holmberg, Anders (1986). *Word Order and Syntactic Features in the Scandinavian Languages and English*. Ph.D. dissertation: Stockholm University.
- Holmberg, Anders (2000a). Deriving OV order in Finnish. In: Peter Svenonius (ed.). *The Derivation of VO and OV*. Amsterdam: Benjamins, 123-152.
- Holmberg, Anders (2000b). Scandinavian Stylistic Fronting. *Linguistic Inquiry* 31: 445-483.

- To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.
- Holmberg, Anders (2005). Stylistic Fronting. In: Martin Everaert & Henk van Riemsdijk (eds). *The Blackwell Companion to Syntax*. Oxford: Blackwell, 530-563.
- Holmberg, Anders (2013). The syntax of answers to polar questions in English and Swedish. *Lingua* 128: 31-50.
- Holmberg, Anders (2014). The syntax of the Finnish question particle. In: P. Svenonius (ed.). *Functional Structure from Top to Toe*. Oxford: Oxford University Press, 266-289.
- Holmberg, Anders (2016). *The Syntax of Yes and No*. Oxford: Oxford University Press.
- Holmer, Arther (2005) Seediq. Antisymmetry and final particles in a Formosan VOS language. In: Andrew Carnie, Heidi Harley & Sheila Dooley (eds). *Verb First. On the Syntax of Verb-initial Languages*. Amsterdam: Benjamins. 175-201.
- Hopper & Elizabeth Traugott (2003). Hopper, Paul & Elizabeth Traugott (1993/2003). *Grammaticalization*. Cambridge: Cambridge University Press.
- Horn, Larry (1969). A presuppositional approach to *only* and *even*. In: Robert Binnick (ed). *CLS 5: Papers from the Fifth Meeting of the Chicago Linguistic Society*. Chicago: Chicago Linguistic Society, 98-107.
- Horvath, Julia (1986). *FOCUS in the Theory of Grammar and the Syntax of Hungarian*. Dordrecht: Foris.
- Hsieh, Feng-fan & Rint Sybesma (2007). *On the Linearization of Chinese Sentence-Final Particles: Max Spell Out and why CP moves*. Unpublished ms: MIT and Leiden University.
- Hu, Xuhui (2015). *The Syntax of Resultatives: An Interface-based Approach*. Ph.D. dissertation: University of Cambridge.
- Huang, C-T. James, Y-H. Audrey Li & Yafei Li (2009). *The Syntax of Chinese*. Cambridge: Cambridge University Press.
- Hwang, Jya-Lin (1998). A comparative study on the grammaticalization of saying verbs in Chinese. In: Chao Fen Sun (ed.). *Proceedings of the 10th North American Conference on Chinese Linguistic*. GSIL: USC, 585-597.
- Iwasaki, Shoichi & Preeya Ingkaphirom (2005). *A Reference Grammar of Thai*. Cambridge: Cambridge University Press.
- Jackendoff, Ray (1996). The architecture of the linguistic-spatial interface. In: Paul Bloom, Merrill Garrett, Lynn Nadel, and Mary Peterson (eds). *Language and Space*. Cambridge, MA: MIT Press, 1-30.
- Jacob, Peggy (2006). *Informationsstrukturelle Aspekte des Tar B'arma*. MA diss, Humboldt University Berlin.
- Jacob, Peggy (2010). On the obligatoriness of focus marking: evidence from Tar B'arma. In: Ines Fiedler & Anne Schwartz (eds). *The Expression of Information Structure: A Documentation of its Diversity Across Africa*. Amsterdam: Benjamins, 117-144.
- Jacob, Peggy (2013). Doubled verbs. Principles of distribution in Sara-Bagirmi. Paper presented at the Nilo-Saharan Linguistics Colloquium (Humboldt University Berlin).
- Jaggar, Philip (2001). *Hausa*. Amsterdam: Benjamins.
- Jayaseelan, Karattuparambil A. (2001). Questions and question-word incorporating quantifiers in Malayalam. *Syntax* 4(2): 63-93.
- Jayaseelan, Karattuparambil A. (2008). Question particles and disjunction. Unpublished ms: Hyderabad. (<http://ling.auf.net/lingbuzz/000644>; last accessed 21 September 2015)

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- Jayaseelan, Karattuparambil A. (2014). Decomposition coordination: the two operators of coordination. Unpublished ms: Hyderabad. (<http://ling.auf.net/lingbuzz/002389>; last accessed 21 September 2015).
- Jenks, Peter (2011). *The Hidden Structure of Thai Noun Phrases*. Ph.D. dissertation: Harvard.
- Jespersen, Otto (1917). *Negation in English and Other Languages*. Copenhagen: Høst.
- Johnson, Kyle (2003). Towards and etiology of adjuncts. *Nordlyd* 31(1):187-215.
- Jones, Michael (1988). *Sardinian Syntax*. London: Routledge.
- Kandybowicz, Jason (2013). Ways of emphatic scope-taking: from emphatic assertion in Nupe to the grammar of emphasis. *Lingua* 128: 51-71.
- Kaufman, Daniel (2010). Greenberg's 16th slayed in the Bronx? Language universals and fieldwork in NYC. Unpublished ms: Endangered Language Alliance and CUNY. (https://www.academia.edu/1919323/Greenbergs_16th_slayed_in_the_Bronx; last accessed 21 September 2015)
- Kayne, Richard (1994). *The Antisymmetry of Syntax*. Cambridge, MA: MIT Press.
- Kayne, Richard (2009). Antisymmetry and the lexicon. *Linguistic Variation Yearbook* 8: 1-31.
- Kayne, Richard (2010a). *Movement and Silence*. Oxford: Oxford University Press.
- Kayne, Richard (2010b). Why isn't *this* a complementizer? In: Richard Kayne (ed.). *Comparisons and Contrasts*. Oxford: Oxford University Press, 190-227.
- Keegan, John (1997). *A Reference Grammar of Mbay*. München: Lincom Europa.
- Keenan, Ed. (1976). Remarkable subjects in Malagasy. In: Charles Li (ed.). *Subject and Topic*. New York: Academic Press, 247-301.
- Keenan, Ed. (1995). Predicate-argument structure in Malagasy. In: Clifford S. Burgess, Katarzyna Dziwirek & Donna Gerds (eds). *Grammatical Relations: Theoretical Approaches to Empirical Questions*. Stanford: CSLI, 171-216.
- Keevallik, Leelo (2009). The grammar-interaction interface of negative questions in Estonian. *SKY Journal of Linguistics* 22: 139-173.
- Kim, Shin-Sook (2002). Intervention effects are focus effects. In: Noriko Akatsuka & Susan Strauss (eds). *Japanese/Korean Linguistics* 10. Stanford: CSLI, 615-628.
- Kim, Shin-Sook (2006). More evidence that intervention effects are focus effects. In: Changguk Yim (ed.). *Proceedings of the 8th Seoul International Conference on Generative Grammar: Minimalist Views on Language Design*. Seoul: Hankook, 161-180.
- Kiparsky, Paul & Cleo Condoravdi (2006). Tracking Jespersen's Cycle. In: Mark Janse, Brian Joseph & Angela Ralli (eds). *Proceedings of the 2nd International Conference of Modern Greek Dialects and Linguistic Theory*. Mytilene: Doukas, 172-197.
- Klein, Wolfgang (1998). Assertion and finiteness. In: Norbert Dittmar & Zvi Penner (eds). *Issues in the Theory of Language Acquisition: Essays in Honor of Jürgen Weissenborn*. Bern: Lang, 225-245.
- Klein, Wolfgang (2006). On Finiteness. In: Veerle van Geenhoven (ed.). *Semantics meets Acquisition*. Dordrecht: Kluwer, 245-272.
- Koopman, Hilda (2010). Prepositions, postpositions, circumpositions and particles. In: Guglielmo Cinque & Luigi Rizzi (eds). *Mapping Spatial PPs. The Cartography of Syntactic Structures*. Oxford: OUP, 26-73.
- Korn, Agnes & Peter Öhl (2007). The rise of *ke āyā* constructions in Persian interrogative embedding. Paper presented at the Second International

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- Conference on Iranian Linguistics (Hamburg). (<http://www.linguistik.uni-kiel.de/icil2/59Korn.pdf>; last accessed 21 September 2015)
- Kratzer, Angelika (1991). The representation of focus. In: Arnim von Stechow & Daniel Wunderlich (eds). *Semantik – Semantics. Ein Internationales Handbuch der zeitgenössischen Forschung*. Berlin: de Gruyter, 825-834.
- Krinopoulos, Socrates (1889). *Τὰ Φερτάκαινα ὑπὸ Ἐθνολογικὴν καὶ Φιλολογικὴν Ἔποψιν Ἐξεταζόμενα*. Athens: Fexis.
- Krüsi, Peter (1978). *Mumuye Discourse Structure*. In: Joseph Grimes (ed.). *Papers on Discourse*. Dallas: SIL.
- Kuteva, Tania (1994). *Auxiliation. An Enquiry into the Nature of Grammaticalization*. Oxford: Oxford University Press.
- Laka, Itziar (1990). *Negation in Syntax*. Ph.D. dissertation: MIT.
- Laka, Itziar (1994). *Negation in Syntax*. New York: Garland.
- Lam, Zoe Wai-Man (2014). A complex ForceP for speaker- and addressee-oriented discourse particles in Cantonese. *Studies in Chinese Linguistics* 35(2): 61-79.
- Lam, Cherry (2016). Unifying polyfunctional postverbal DAK: a study of four Chinese varieties. Unpublished ms: University of Cambridge.
- LaPolla, Randy (2002). Problems of Methodology and Explanation in Word Order Universals Research. In: Pan Wuyun (ed.). *Dongfang Yuyan yu Wenhua* (Languages and Cultures of the East). Shanghai: Dongfang Chuban Zhongxin, 204-237. (<http://tibeto-burman.net/rjlapolla/>; last accessed 21 September 2015).
- Ledgeway, Adam (in press). From Latin to Romance: the decline of Edge-fronting. In: Adriana Cardoso & Ana Maria Martins (eds). *Word Order Change*. Oxford: Oxford University Press.
- Li, Charles & Sandra Thompson (1981). *Mandarin Chinese: a Functional Reference Grammar*. Berkeley: University of California Press.
- Li, Yafei (1990). Conditions on X⁰ Movement. *Linguistic Inquiry* 21: 399-426.
- Lipski, John (2001). Strategies of double negation in Spanish and Portuguese. Unpublished ms: Penn State (<http://www.personal.psu.edu/jml34/negation.pdf>; last accessed 21 September 2015)
- Lofti, Ahmad & Peter Öhl (2004). Nominalised CPs in Persian: a parametric account. Paper presented at the 2nd International Conference on Iranian Linguistics (<http://www.linguistik.uni-kiel.de/icil2/60Lotfi.pdf>; last accessed 21 September 2015)
- Malouf, Robert (2000). Verbal gerunds as mixed categories in Head-Driven Phrase Structure Grammar. In: Robert Borsley (ed.). *The Nature and Function of Syntactic Categories*. New York: Academic Press, 133-166.
- Makri, Margarita (2013). *Expletive Negation beyond Romance. Clausal Complementation and Epistemic Modality*. MA dissertation: York University.
- Maniacky, Jacky & Jenneke van der Wal (2015). How ‘person’ got into focus: Grammaticalization of clefts in Lingala and Kikongo areas. *Linguistics* 53(1): 1-52. START
- Manzini, Rita & Ken Wexler (1987). Parameters, Binding Theory, and learnability. *Linguistic Inquiry* 18: 413-444.
- Marantz, Alec (2001). Words. Unpublished ms: MIT.
- Marantz, Alec (2008). Phases and words. In: Sook-Hee Choe (ed.). *Phases in the Theory of Grammar*. Seoul: Dong In, 191-222.
- Massam, Diane (2001). VSO is VOS: Aspects of Niuean Word Order. In: Andrew Carnie & Eithne Guilfoyle (eds). *The Syntax of Verb Initial Languages*. Oxford: Oxford University Press, 97-117.

- To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.
- Matthews, Stephen & Moira Yip (1994). *Cantonese: A Comprehensive Grammar*. New York: Routledge.
- May, Robert (1979). Must comp-to-comp movement be stipulated? *Linguistic Inquiry* 10:719-725.
- McCoy, Svetlana (2001). *Colloquial Russian Particles –to, že, and ved’ as Set-Generating (“Kontrastive”) Markers: A Unifying Analysis*. Ph.D. dissertation: Boston University.
- McReady, Eric (2008). What *man* does. *Linguistics and Philosophy* 31(6): 671-724.
- Meenakshi, (1986). The quotative in Indo-Aryan. In: Bhadriraju Krishnamurti, Colin Masica & Anjani Sinha (eds). *South Asian Languages: Structure, Convergence and Diglossia*. Dehli, Varanasi, Patna, Madras: Motilal Banarsidass, 209-218.
- Mehler, Jacques, Emmanuel Dupoux, Thierry Nazzi, & Ghislaine Dehaene- Lambertz (1996). Coping with linguistic diversity: the infant’s viewpoint. In: James Morgan & Katherine Demuth (eds). *Signal to Syntax: Bootstrapping from Speech to Grammar in Early Acquisition*. Mahwah, NJ: Lawrence Erlbaum Associates, 101-116.
- Meisner, Charlotte, Elisabeth Stark & Harald Völker (eds). (2014). *Jespersen Revisited: Negation in Romance and Beyond*. *Lingua* 147.
- Morgan, Justin (2012). Fieldnotes on Yom. Unpublished ms: University of Cambridge.
- Mosel, Ulrike & Even Hovdhaugen (1992). *Samoan Reference Grammar*. Oslo: Scandinavian University Press.
- Munaro, Nicola & Cecilia Poletto (2003). Ways of clausal typing. *Rivista di grammatica generativa* 27: 87–105.
- Munaro, Nicola & Cecilia Poletto (2009). Sentential particles and clausal typing in Venetan dialects. In: Benjamin Shaer, Philippa Cook, Werner Frey & Claudia Maienborn (eds). *Dislocated Elements in Discourse*. London: Routledge, 173-199.
- Myler, Neil (2014). *Building and Interpreting Possession Sentences*. Ph.D. dissertation NYU.
- Narrog, Heiko & Bernd Heine (2011). *The Oxford Handbook of Grammaticalization*. Oxford: Oxford University Press.
- Nazzi, Thierry, Josiane Bertoncini & Jacques Mehler (1998). Language discrimination by newborns: toward an understanding of the role of rhythm. *Journal of Experimental Psychology: Human Perception and Performance* 24: 1-11.
- Nchare, Abdoulaye Laziz (2012). *The Grammar of Shupamem*. Ph.D. dissertation: NYU.
- Ndjerareou, Mekoulnodji, Christy Melick & Sarah Moeller (2010). *A Brief Grammatical Sketch of Ngambay*. *GIALens: Electronic Notes Series* 4(2). [<http://www.gial.edu/GIALens/vol4-2/MelickMoellerMekoulnodji-Ngambay.pdf>; last accessed 21 September 2015]
- Neeleman, Ad & Hans van de Koot (2004). The configurational matrix. *Linguistic Inquiry* 33: 529-574.
- Nespor, Marina & Irene Vogel (1986). *Prosodic Phonology*. Dordrecht: Foris.
- Nespor, Marina, Marcela Peña & Jacques Mehler (2003). On the different roles of vowels and consonants in speech processing and language acquisition. *Lingue & Linguaggio* 2: 203-229.
- Nettle, Daniel (1998). *The Fyem Language of Northern Nigeria*. München: Lincom Europa.

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- Newman, Paul (1971). The Hausa negative markers. *Studies in African Linguistics* 2: 183-195.
- Newman, Paul (1974). *The Kanakuru Language*. Leeds: Institute of Modern English Language Studies.
- Newman, Paul (2000). *The Hausa Language: An Encyclopedic Reference Grammar*. New Haven: Yale University Press.
- Nunes, Jairo (2004). *Linearization of Chains and Sideways Movement*. Cambridge, MA: MIT Press
- Obenauer, Hans-Georg (2004). Nonstandard *wh*-questions and alternative checkers in Pagotto. In: Horst Lohnstein & Susanne Trissler (eds). *The Syntax and Semantics of the Left Periphery*. Berlin: Mouton de Gruyter, 343-383.
- Ochola, Eunita (2006). English words and phrases in Dholuo-English codeswitching. In: Oloaba Arasanyin & Michael Pemberton (eds). *Selected Proceedings of the 36th Annual Conference on African Linguistics*. Somerville, MA: Cascadilla Proceedings Project, 208-220.
- Ojwang', Benson Oduor (2008). Encoding polar questions in Dholuo. *Studies in African Linguistics* 37(1): 61-91.
- Omondi, Lucia Ndonga (1982). *The Major Syntactic Structure of Dholuo*. Berlin: Diatrich Reimer Verlag.
- Oosthuizen, Johan (1998). The final *nie* in Afrikaans negative sentences. *Stellenbosch Papers in Linguistics* 31: 61-94.
- Ouhalla, Jamal (1990). Sentential negation, Relativized Minimality and the aspectual status of auxiliaries. *The Linguistic Review* 7: 183-231.
- Ouwayda, Sarah (2012). Where plurality is: Agreement and DP structure. In: Stefan Keine & Shayne Slogget (eds). *Proceedings of the 42nd North East Linguistics Society Meeting*. Amherst, MA: GLSA Publications, 423-436.
- Ouwayda, Sarah (2014). *Where Number lies: Plural Marking, Numerals, and the Collective-Distributive Distinction*. Ph.D. dissertation: University of Southern California.
- Owens, Jonathan (1985). *A Grammar of Harar Oromo (Northeastern Ethiopia)*. Hamburg: Helmut Buske Verlag.
- Pan, Victor (2016). Mandarin peripheral construals at the syntax-discourse interface. *The Linguistic Review* 33(4): 819-868.
- Panagiotidis, Phoevos (2015). *Categorial Features: A Generative Theory of Word Class Categories*. Cambridge: Cambridge University Press.
- Parrott, Lillian (1997). *Discourse Organization and Inference: The Usage of the Russian Particles že and ved'*. Ph.D. dissertation: Harvard University.
- Paul, Ileana (2001). Concealed pseudo-clefts. *Lingua* 111: 707-727.
- Paul, Ileana (2002). On extraction asymmetries. In: Andrea Rackowski & Norvin Richards (eds). *MIT Working Papers in Linguistics 44: The Proceedings of AFLA XIII*. Cambridge, MA: MIT, 211-224.
- Paul, Ileana (2008). On the topic of pseudoclefts. *Syntax* 11(1): 91-124.
- Paul, Waltraud (2005). Adjectival modification in Mandarin Chinese and related issues. *Linguistics* 43: 757-793.
- Paul, Waltraud (2014). Why particles are not particular: sentence-final particles in Chinese as heads of a split CP. *Studia Linguistica* 68(1): 77-115.
- Paul, Waltraud (2015). *New Perspectives on Chinese Syntax*. Berlin: De Gruyter.
- Paul, Waltraud & John Whitman (2015). Topic prominence. To appear in: Martin Everaert & Henk van Riemsdijk (eds). *The Blackwell Companion to Syntax* (2nd edition). Oxford: Blackwell.

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

(http://crlao.ehess.fr/docannexe/file/1799/topic_prominence_final_public_february_2015.pdf; last accessed 21 September 2015)

- Payne, John (1993). The headedness of Noun Phrases: slaying the nominal hydra. In: Greville Corbett, Norman Fraser & Scott McGlashan (eds). *Heads in Grammatical Theory*. Cambridge: CUP, 114-139.
- Pearson, Matt (2001). *The Clause Structure of Malagasy: A Minimalist Approach*. Ph.D. dissertation: UCLA.
- Penello, Nicoletta & Paolo Chinellato (2008). Le dinamiche della distribuzione di ciò in Veneto. Breve saggio di microvariazione. In: Gianna Marcato (ed.). *L'Italia dei dialetti. Proceedings of the Dialectology Meeting of Sappada/Plodn – 2007*. Padova: Unipress, 111-118.
- Peng, Anne (2011). Head-final and head-initial relative clauses in Jambi Teochew. In: Koichi Otaki, Hajime Takeyasu & Shin-ichi Tanigawa (eds). *Online Proceedings of GLOW in Asia Workshop for Young Scholars*. (http://faculty.human.mie-u.ac.jp/~glow_mie/Workshop_Proceedings/WorkshopProceedings_WholeBook.pdf; last accessed 21 September 2015)
- Peng, Anne (2012). *Aspects of the Syntax of Indonesian Teochew*. Ph.D. dissertation: University of Delaware
- Pesetsky, David (2013). “Что дѣлать? What is to be done?”. Paper presented at the Linguistics Society of America annual meeting.
- Pesetsky, David & Esther Torrego (2006). Probes, Goals and Syntactic Categories. In: Yukio Otsu (ed.). *Proceedings of the 7th Annual Tokyo Conference on Psycholinguistics*. Keio: Hituzi Publishing, 25-60.
- Pesetsky, David & Esther Torrego (2007). The syntax of valuation and the interpretability of features. In: Simin Karimi, Vida Samiian & Wendy Wilkins (eds). *Phrasal and Clausal Architecture*. Amsterdam: Benjamins, 262-294.
- Philip, Joy (2012). *Subordinating and Coordinating Linkers*. Ph.D. dissertation: UCL.
- Philip, Joy (2013). (Dis)harmony, the Head-Proximate Filter, and linkers. *Journal of Linguistics* 49(1): 165-221.
- Poletto, Cecilia. (2008a). On negative doubling. *Quaderni di Lavoro ASIt* 8: 57-84.
- Poletto, Cecilia. (2008b). The syntax of focus negation. *University of Venice Working Papers in Linguistics* 18: 181-202.
- Poletto, Cecilia (2012). *Word Order in Old Italian*. Oxford: Oxford University Press.
- Pollock, Jean-Yves. (1989). Verb movement, Universal Grammar and the structure of IP. *Linguistic Inquiry* 20: 365-424.
- Potsdam, Eric (2006). More concealed pseudoclefts and the Clausal Typing Hypothesis. *Lingua* 116: 2154-2182.
- Potsdam, Eric (2009). Austronesian Verb-initial languages and *wh*-question strategies. *Natural Language and Linguistic Theory* 27: 737-771.
- Pretorius, Erin (in progress). *Adpositions and Verbal Particles in Afrikaans: A Nanosyntactic Analysis*. Ph.D. dissertation: Stellenbosch University, and Utrecht University.
- Puškar, Zorica (2015). Interactions of gender and number agreement: Evidence from Bosnian/Croatian/Serbian. Unpublished ms: University of Leipzig. (http://home.uni-leipzig.de/zoricapuskar/files/squib_final.pdf; last accessed 3 July 2016)
- Ramchand, Gillian & Peter Svenonius (2014). Deriving the functional hierarchy. *Language Sciences* 46: 152–174.

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- Reesink, Ger (2002). Clause-final negation: structure and interpretation. *Functions of Language* 9: 239-268.
- Reuland, Eric (2005a). Agreeing to bind. In: Hans Broekhuis, Norbert Corver, Riny Huybregts, Ursula Kleinhenz & Jan Koster (eds). *Organizing Grammar: Linguistic Studies in Honor of Henk van Riemsdijk* Berlin: Mouton de Gruyter, 505-513.
- Reuland, Eric (2005b). Binding conditions: how are they derived? In: Stefan Müller (ed.). *Proceedings of the HPSG05 Conference*. Stanford: CSLI Publications, 578-593.
- Reuland, Eric (2011). *Anaphora and Language Design*. Cambridge, MA: MIT Press.
- Richards, Marc (2004). *Object Shift and Scrambling in North and West Germanic: A Case Study in Symmetrical Syntax*. Ph.D. dissertation: University of Cambridge.
- Richards, Norvin (2010). *Uttering Trees*. Cambridge, MA: MIT Press.
- Richards, Norvin (2016). *Contiguity Theory*. Cambridge, MA: MIT Press.
- Van Riemsdijk, Henk (2002). The unbearable lightness of GOing. *Journal of Comparative Germanic Linguistics* 5:143-196.
- Rizzi, Luigi (1982). *Issues in Italian Syntax*. Dordrecht: Foris.
- Rizzi, Luigi (1997). On the fine structure of the left periphery. In: Liliane Haegeman (ed.). *Elements of Grammar*. Dordrecht: Kluwer, 281-338.
- Rizzi, Luigi (2001). On the Position 'Int(errogative)' in the Left Periphery of the Clause. In: Guglielmo Cinque, and Giampaolo Salvi (eds). *Current Studies in Italian Syntax: Essays offered to Lorenzo Renzi*. Amsterdam: North Holland, 287-296.
- Rizzi, Luigi (2015a). Cartography, Criteria, and Labeling. In: Ur Shlonsky (ed.). *Beyond Functional Sequence*. New York: Oxford University Press, 314-338.
- Rizzi, Luigi (2015b). Labeling, maximality and the head – phrase distinction. Unpublished ms: University of Geneva.
- Roberge, Paul (2000). Etymological Opacity, Hybridization, and the Afrikaans Brace Negation. *American Journal of Germanic Linguistics and Literatures* 12(1): 101-176.
- Roberts, Ian (2007). *Diachronic Syntax*. Oxford: OUP.
- Roberts, Ian (2010). *Agreement and Head Movement: Clitics, Incorporation, and Defective Goals*. Cambridge, MA: MIT Press.
- Roberts, Ian & Anna Roussou (2003). *Syntactic Change. A Minimalist Approach to Grammaticalization*. Cambridge: Cambridge University Press.
- Roeper, Tom (2011). The acquisition of recursion: how formalism articulates the child's path. Unpublished ms: UMass. (http://people.umass.edu/roeper/online_papers/recursion%20bio%202011.pdf; last accessed 3 July 2016)
- Rooryck, Johan (2008). A compositional analysis of French negation. Unpublished ms: Leiden University.
- Sabel, Joachim (2002). *Wh*-questions and extraction asymmetries in Malagasy. In: Andrea Rackowski & Norvin Richards (eds). *MIT Working Papers in Linguistics 44: The Proceedings of AFLA XIII*. Cambridge, MA: MIT Press, 309-324.
- Sánchez, Liliana (2010). *The Morphology and Syntax of Focus and Topic: Minimalist Inquiries in the Quechua periphery*. Amsterdam: Benjamins.
- Sauerland, Uli & Fabian Heck (2003) LF intervention effects in pied piping. In Makoto Kadowaki, and Shigeto Kawahara (eds.). *Proceedings of NELS 33*. Amherst: GLSA, 347-366.

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- Schaub, Willi (1985). *Babungo*. London: Croom Helm.
- Schwabe, Kerstin (2004). The particle *li* and the left periphery of Slavic *yes/no* interrogatives. In: Horst Lohnstein & Susanne Trissler (eds). *The Syntax and Semantics of the Left Periphery*. Berlin: Mouton de Gruyter, 385-430.
- Schwartz, Florian (2003). Focus Marking in Kikuyu. In: Regine Eckhardt (ed.). *Questions and Focus*. *ZASPIL* 30: 41-118.
- Seidl, Amanda (2001). *Minimal Indirect Reference: a Theory of the Syntax-Phonology Interface*. London: Routledge.
- Selkirk, Elisabeth (1984). *Phonology and Syntax: The Relation between Sound and Structure*. Cambridge, MA: MIT Press.
- Sheehan, Michelle (2013a). Explaining the Final-over-Final Constraint: formal and functional approaches. In: Theresa Biberauer and Michelle Sheehan (eds.), *Theoretical Approaches to Disharmonic Word Order*. Oxford: Oxford University Press, 407-444.
- Sheehan, Michelle (2013b). Some implications of a copy theory of labelling for the Linear Correspondence Axiom. *Syntax* 16 (4): 362-396.
- Shimizu, Kiyoshi (1983). *The Zing Dialect of Mumuye: A Descriptive Grammar*. Hamburg: Helmut Buske Verlag.
- Sigurðsson, Halldór (2004). The syntax of person, tense and speech features. *Italian Journal of Linguistics* 16: 219-251.
- Sigurðsson, Halldór (2010). On EPP effects. *Studia Linguistica* 64(2): 159-189.
- Silverstein, Michael (1976). Hierarchy of features and ergativity. In: R.M.W. Dixon (ed.). *Grammatical Categories in Australian Languages*. Canberra: Australian Institutes of Aboriginal Studies, 112-171. (Republished as: Silverstein, Michael (1986). Hierarchy of features and ergativity. In: Pieter Muysken & Henk van Riemsdijk (eds). *Features and Projections*. Dordrecht: Foris, 163-232.
- Simpson, Andrew & Zoe Wu (2002). Agreement, shells and focus. *Language* 78(2): 287-313.
- Slade, Benjamin (2011). *Formal and Philological Inquiries into the Nature of Interrogatives, Indefinites, Disjunction, and Focus in Sinhala and other languages*. Ph.D. dissertation: University of Illinois at Urbana/Champaign.
- Soh, Hooi Ling (2009). Speaker presupposition and Mandarin Chinese sentence-final *-le*: a unified analysis of the “change of state” and the “contrary to expectation” reading. *Natural Language & Linguistic Theory* 27: 623–657.
- Soh, Hooi Ling & Meijia Gao (2006). Perfective aspect and transition in Mandarin Chinese: an analysis of double *-le* sentences. In: Pascal Denis, Eric McCready, Alexis Palmer & Brian Reese (eds). *Proceedings of the 2004 Texas Linguistics Society Conference*. Somerville, MA: Cascadilla Press, 107–122.
- Song, Chenchen (2016). A Minimalist study of complex verb formation: cross-linguistic patterns and variation. Unpublished ms: University of Cambridge.
- Sorace, Antonella (2004). Gradience at the lexicon-syntax interface: evidence from auxiliary selection. In: Artemis Alexiadou, Martin Everaert, and Elena Anagnostopoulou (eds). *The Unaccusativity Puzzle*. Oxford: Oxford University Press, 243-268.
- Speas, Peggy (2004). Evidentiality, logophoricity and the syntactic representation of pragmatic features. *Lingua* 114(3): 255-276.
- Speas, Peggy & Carol Tenny (2003). Configurational properties of Point of View roles. In: Anna Maria DiSciullo (ed.). *Asymmetry in Grammar*. Amsterdam: Benjamins, 315-344.

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.

- Sportiche, Dominique (2005). Division of labor between Merge and Move: strict locality of selection and apparent reconstruction paradoxes. Unpublished ms: UCLA. (<http://ling.auf.net/lingbuzz/000163>; last accessed 2 June 2016).
- Starke Michal (2009). Nanosyntax. A short primer to a new approach to language. Unpublished ms: Tromsø. (ling.auf.net/lingbuzz/001230/current.pdf; last accessed 2 June 2016)
- Starks, Donna & Diane Massam (2015). The origin of *yes-no* question particles in the Niuean language. *Journal of Linguistics* 51: 185-212.
- Stevenson, Roland (1969). *Bagirmi Grammar*. Khartoum: Sudan Research Unit, University of Khartoum.
- Struckmeier, Volker (2014). *Ja doch wohl C?* Modal particles in German as C-related elements. *Studia Linguistica* 68(1): 16-48.
- Svenonius, Peter (2006). The emergence of Axial Parts. *Tromsø Working Papers in Language and Linguistics (Nordlyd)* 33(1): 49-77.
- Svenonius, Peter (2008). Review of *Non-projecting Words* by Ida Toivonen. *Language* 84(2): 666-670.
- Svenonius, Peter (2010). Spatial P in English. In: Guglielmo Cinque & Luigi Rizzi (eds). *Mapping Spatial PPs. The Cartography of Syntactic Structures* Vol. 6. New York: Oxford University Press, 127-160.
- Svenonius, Peter (2011). Spanning. Unpublished ms: University of Tromsø. (<http://ling.auf.net/lingBuzz/001501>; last accessed 26 December 2015).
- Svenonius, Peter (2016). Spans and words. In: Daniel Siddiqi & Heidi Harley (eds). *Morphological Metatheory*. Amsterdam: Benjamins, 201-222.
- Swanson, Kirstie (2011). *Serial verb constructions in Bwe Karen*. MA diss., Payap University (Chiang Mai, Thailand)
- Sybesma, Rint & Boya Li (2007). The dissection and structural mapping of Cantonese sentence final particles. *Lingua* 117: 1739-1783.
- Tánczos, Orsolya (2014). Cycle by cycle in the history of *shuisa*. Paper presented at the 16th Diachronic Generative Syntax (DiGS16) conference (Budapest).
- Toivonen, Ida (2003). *Non-projecting Words*. Dordrecht: Kluwer.
- Toro, Juan, Luca Bonatti, Marina Nespør & Jacques Mehler (2008). Finding words and rules in a speech stream: functional differences between vowels and consonants. *Psychological Science* 19(2): 137-144.
- Travis, Lisa (2006). VP, D⁰ movement languages. In: Raffaella Zanuttini, Hector Campos, Elena Herburger & Paul Portner (eds). *Negation, Tense and Clausal Architecture: Cross-linguistic Investigations*. Washington, D.C.: Georgetown University Press, 127-147.
- Travis, Lisa (2010). *Inner Aspect. The Articulation of VP*. Dordrecht: Springer.
- Trinh, Tue (2014). *Edges and Linearization*. Ph.D. dissertation: MIT. (<http://dspace.mit.edu/handle/1721.1/68523>; last accessed 3 July 2016)
- Tsimpli, Ianthi (2013). (Evidence for) the language instinct. In: Cedric Boeckx & Kleanthes Grohmann (eds.) *The Cambridge Handbook of Bilingualism*. Cambridge: Cambridge University Press, 49-68.
- Tsimpli, Ianthi (2014). Early, late or very late? Timing acquisition and bilingualism. *Linguistic Approaches to Bilingualism* 4(3): 283-313.
- Tucker, Archibald (1994). *A Grammar of Kenya Luo (Dholuo)*. Cologne: Rüdiger Köppe Verlag.
- Uriagereka, Juan (1999). Multiple Spell Out. In: Sam D. Epstein & Norbert Hornstein (eds). *Working Minimalism*. Cambridge, MA: MIT Press, 251-282.

- To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.
- Vandame, Charles (1963). *Le Ngambay-Moundou: Phonologie, Grammaire, et Textes. Mémoires de L'Institut Français d'Afrique Noire*. Dakar: IFAN.
- Veenstra, Tonjes (1996). Grammaticalised verbs in Saramaccan: the interplay between syntax and semantics. In: Philip Baker & Anand Suya (eds). *Changing Meanings, Changing Functions: Papers Relating to Grammaticalization in Contact Languages*. London: Battlebridge Press, 95-112.
- Vikner, Sten (1995). *Verb Movement and Expletive Subjects in the Germanic Languages*. Oxford: Oxford University Press.
- DeVos, Maud & Johan van der Auwera (2013). Jespersen cycles in Bantu: double and triple negation. *Journal of African Languages and Linguistics* 34(2): 205-274.
- Van der Wal, Jenneke (2016). Diagnosing focus. *Studies in Language* 40(2): 259-301.
- Wang, Yu-Fang, Aya Katz, & Chih-Hua Chen (2003). Thinking as saying: *shuo* ('say') in Taiwan Mandarin conversation and BBS talk. *Language Sciences* 25(5): 457-488.
- Wexler, Kenneth (1998). Very early parameter setting and the unique checking constraint: A new explanation of the optional infinitive stage. *Lingua* 106: 23-79.
- Whitman, John (2008). The classification of constituent order generalizations and diachronic explanation. In: Jeff Good (ed.), *Linguistic Universals and Language Change*. Oxford: Oxford University Press, 233-253.
- Whitman, John (2013). Diachronic interpretations of word order parameter cohesion. Paper presented at the 15th Diachronic Generative Syntax Conference (Ottawa).
- Williams, Edwin (2003). *Representation Theory*. Cambridge, MA: MIT Press.
- Willis, David, Christopher Lucas & Anne Breitbarth (2013). *The Development of Negation in the Languages of Europe (Volume I): Case Studies*. Oxford: Oxford University Press.
- Willson, Heather (2002). *The Marshallese Complementizer Phrase*. MA dissertation: Arizona State University.
- Willson, Heather (2005). Marshallese *yes/no* questions and remnant movement. *UCLA Working Papers in Linguistics: Proceedings of the 12th Meeting of the Austronesian Formal Linguistics Association* 12: 421-435.
- Willson, Heather (2008). Remnant movement and the position of the Marshallese question particle. Unpublished ms: UCLA. (<http://linguistics.byu.edu/faculty/hwills1/RemnantMvmtMarshallese.pdf>; last accessed 21 September 2015)
- Wiltschko, Martina (2014). *The Universal Structure of Categories. Towards a Formal Typology*. Cambridge: Cambridge University Press.
- Wiltschko, Martina & Johannes Heim (2016). The syntac of confirmationals. A neo-performative analysis. In: Günther Kaltenböck, Evelien Keizer & Arne Lohmann (eds). *Outside the Clause. Form and Function of Extra-Clausal Constituents*. Amsterdam: Benjamins, 303-340.
- Wiltschko, Martina (2016). Response particles beyond answering. Unpublished ms: UBC. [<http://syntaxofspeechacts.linguistics.ubc.ca/wp-content/uploads/2014/02/response-particles-beyond-answering.pdf>; last accessed 3 July 2016]
- Wiltschko, Martina (in press). Ergative constructions in the structure of speech acts. In: Jessica Coon, Diane Massam & Lisa Travis (eds). *The Oxford Handbook of Ergativity*. Oxford: Oxford University Press.

- To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.
- Wurmbrand, Susi (2014). The Merge Condition: a syntactic approach to selection. In: Peter Kosta, Lilia Schürcks, Steven Franks & Teodora Radev-Bork (eds). *Minimalism and Beyond: Radicalizing the Interfaces*. Amsterdam: Benjamins, 139-177.
- Yaisomanang, Somphob (2012). *The Syntax of Yes-No Questions and Answers in Thai*. Ph.D. dissertation: University of Newcastle.
- Yang, Charles (2016). *Price of Productivity: How Children Learn and Break Rules of Language*. To appear with MIT Press.
- Yang, Xiaodong & Martina Wiltschko (2016). The confirmational marker *ha* in Northern Mandarin. Unpublished ms: UBC.
[<http://syntaxofspeechacts.linguistics.ubc.ca/wp-content/uploads/2014/02/Yang-wiltschko-mandarin-ha.pdf>; last accessed 3 July 2016]
- Yap, Foong Ha, Jiao Wang & Charles T-K. Lam (2010). Clausal integration and the emergence of mitigative and adhortative sentence-final particles in Chinese. *Taiwan Journal of Linguistics* 8(2): 63-86.
- Zanuttini, Raffaella (1997). *Negation and Clausal Structure: a Comparative Study of Romance Languages*. New York: Oxford University Press.
- Zeijlstra, Hedde (2004). *Sentential Negation and Negative Concord*. Ph.D. dissertation: University of Amsterdam.
- Zeijlstra, Hedde (2008). On the syntactic flexibility of formal features. In: Theresa Biberauer (ed.). *The Limits of Syntactic Variation*. Amsterdam: Benjamins, 143-174.
- Zeijlstra, Hedde (2014). On the uninterpretability of interpretable features. In: Peter Kosta, Steven Franks, Teodora Radeva-Bork & Lilia Schürcks (eds). *Minimalism and Beyond. Radicalizing the Interfaces*. Amsterdam: Benjamins, 109-129.
- Zeijlstra, Hedde (2015). Left and right: explaining FOFC and the left position of specifiers without the LCA. Paper presented at the 4th Cambridge Comparative Syntax conference (CamCoS 4).
- Zeller, Jochen (2013). In defence of head movement: evidence from Bantu. In: Lisa Cheng & Norbert Corver (eds). *Diagnosing Syntax*. Oxford: Oxford University Press, 87-111.
- Zhang, Ling (2014). Segmentless Sentence-Final Particles in Cantonese: an experimental study. *Studies in Chinese Linguistics* 35(2): 47-60.
- Zhang, Niina (1999). Chinese *de* and the *de*-construction. *Syntaxis* 2: 27-49.
- Zhang, Niina (2012). *De* and the functional expansion of Classifiers. *Language and Linguistics* 13(3): 569-582.
- Zimmermann, Malte (2015). Scalar particles as alternative-sensitive expressions. Paper presented to the Cambridge Linguistic Society.
- Zwart, Jan-Wouter (2009). The FOFC asymmetry: a layered derivation perspective. Paper presented at the Theoretical Approaches to Disharmonic Word Orders conference (Newcastle).
- Zwart, Jan-Wouter (2011a). Structure and order: asymmetric merge. In: Cedric Boeckx (ed.). *The Oxford Handbook of Linguistic Minimalism*. Oxford: Oxford University Press, 96-118.
- Zwart, Jan-Wouter (2011b). Recursion in language: a layered-derivation approach. *Biolinguistics* 5: 43-56.
- Zwart, Jan-Wouter (2015). Top-down derivation, recursion, and the model of grammar. In: Andreas Trotzke and Josef Bayer (eds). *Syntactic Complexity across Interfaces*. Berlin: De Gruyter, 25-42.

To appear in: M. Sheehan, T. Biberauer, A. Holmberg & I. Roberts (eds.). *The Final-over-Final Condition: A Syntactic Universal*. Cambridge, MA: MIT Press.